

Laura Robinson

INFORMATION-CHANNEL PREFERENCES AND INFORMATION- OPPORTUNITY STRUCTURES

Providing an empirical base to flesh out the notion of 'information capital', this article charts the elusive linkages between information-seeking practices, vocational preferences, and information-opportunity structures. Drawing on data from focus group interviews with over 300 advantaged and disadvantaged students, the research examines the information-seeking practices and circumstances of students attending high schools in an agricultural region of California. The article outlines a novel typology of four distinctive information-seeking situations: Internet-reliant information-seeking (IRIS), personal community-reliant information-seeking (PCRIS), educator-reliant information-seeking (ERIS), and multi-channel information-seeking (MCIS). Each of these situations brings together particular information-seeking strategies with specific vocational and educational preferences and particular information-opportunity structures. The four groups of information-seekers exhibit distinctive internalized stances towards what they define as appropriate information-seeking strategies and useful information-channels for educational and career planning. Illustrating these patterns, the article uncovers the connections between students' educational and career aspirations, on the one hand, and their online and offline information-seeking strategies, on the other hand. By drawing these connections, the analysis provides rich empirical scaffolding for the concepts of information-channel preferences and information-opportunity structures as they relate to information capital, concepts which have remained empirically underdeveloped.

Keywords digital divide; computer-mediated-communication; young people; information-seeking; habitus; information capital

(Received 29 January 2011; final version received 8 February 2011)

When adolescents plan their educational and occupational careers, they draw on different information sources: personal social networks, educators, and online information. Yet not all adolescents have access to the same information. Differently situated youth face divergent *information-opportunity structures* or menus of information from which they must choose. Mapping out their goals, they must reconcile their own preferences for certain *information-channels*, while taking advantage of available information opportunities.

The analysis treats vocational and educational preferences, information-seeking strategies, and information-opportunity structures as packages or clusters of *information-seeking situations*. Examining these inter related processes, the work illuminates how adolescents' pivotal life decisions regarding career and college planning must be examined *vis-à-vis* digital inequality and larger information inequalities.

The study connects different research problematics: adolescents' vocational planning, information-seeking, internet use, and digital inequality. Previously studied in isolation, their nexus has escaped the scrutiny it deserves. This inquiry bridges these scholarly literatures to develop a synthetic account of the interconnections between adolescents' vocational preferences and educational aspirations, access to person-mediated and technology-mediated information sources, and information-seeking strategies.

Research focusing on decision-making processes reveals that both aspirational preferences (Vondracek *et al.* 1999) and self-initiated planning (Blustein & Phillips 1988) vary widely among adolescents sharing similar socio-demographic profiles. Although professional occupations account for a minority of US jobs, typical American adolescents expect to attend college for a professional career (Schneider & Stevenson 1999). Yet, many do not discern connections between securing particular credentials and becoming qualified to enter specific professional fields (Csikszentmihalyi & Schneider 2000). Some dream of glamorous jobs, while others map out prosaic paths and develop 'aligned ambitions' well-fitted to their options (Schneider & Stevenson 1999).

The effectiveness of proactive information-seeking is limited by available information-opportunity structures. While 'personal communities' (Spencer & Pahl 2006) and educators (Lareau 2003) are critical information sources for all, advantaged youth enjoy adult contacts for career and educational information-seeking (Devine 2004). However, adolescents lacking social networks aligned with their ambitions are isolated (Csikszentmihalyi & Schneider 2000). Advantaged adolescents can solicit advice and information from peers, family, and non-kin adults. By contrast, disadvantaged adolescents endeavoring to improve their life chances have a narrower range of well-informed individuals at their disposal (Nichols 2004); therefore, we must consider personal communities as pivotal information-opportunity structures.

In addition, adolescents face numerous obstacles in procuring appropriate information useful in charting their educational and occupational courses. Many do not know what kinds of information are needed to make well-informed

decisions. Potential information sources, whether non-kin adults, peers, family, or educators, often remain outside of the awareness of many adolescents (Julien 1999). Rather than active information-seeking, some passively absorb whatever information they encounter (Julien 1999). However, such reliance on immediate social environments as primary information resources creates disparities or *information-gaps* among adolescents.

While some have suggested that access inequalities can be mitigated by ubiquitous computing environments (Cotten & Jelenewicz 2006), it remains unclear to what extent information-gaps can be closed when adolescents map their futures using internet-mediated resources versus person-mediated information resources. The role of the internet as an information-channel for career and educational planning does not figure prominently in analyses of communication ecologies (Sturken *et al.* 2004), cybersegmentation (Sassen 2002), or conditions of digital practice (Sassen 1997). While valuable, this literature does not attempt to pinpoint the precise ways in which different information-channels are mobilized by adolescents for post-secondary planning.

New media research, while illuminating the orientations of young adults towards various digital technologies (McMillan & Morrison 2006) has neglected to analyze new media resources as one element within an overall information-opportunity structure composed of multiple information-channels. Neither scholars of adolescents' decision-making processes nor scholars of new media have delineated linkages between types of occupational and educational futures that teenagers envision for themselves, their conditions of access to different information sources, and their mobilization of information-channels.

To bring these literatures into dialogue, this research develops a unique typology of information-seeking based on material from focus group interviews with over 300 high school students. Providing empirical data to give substance to the notion of 'information capital' (Hamelink 2001), this article contributes to the literature on teenagers' career and educational decision-making processes by revealing the role of information-seeking in social reproduction. It delves into both the students' own preferences regarding information-channels and the particular information-opportunity structures they face as they seek information relevant to their educational and career options. Using a generative approach, the paper categorizes students' information-seeking practices according to the roles played by various information-channels. I identify four distinctive groups: Internet-reliant information-seekers (IRIS), personal community-reliant information-seekers (PCRIS), educator-reliant information-seekers (ERIS), and multi-channel information-seekers (MCIS).

Building on the concept of *information habitus* (Robinson 2009), the findings in this article reveal that the four information-seeking groups exhibit distinctive internalized stances towards what they define as appropriate information-seeking strategies and useful information-channels for educational and career planning. This classificatory effort contributes to literature on digital inequality by

making explicit linkages between information inequalities, information-seeking, and aspirational planning. These connections have yet to be examined even in highly comprehensive studies that connect digital inequality to larger social inequalities (Van Dijk 2005; Witte & Mannon 2010). By contrast, this article addresses the connection between information resources and adolescents' pivotal future planning that will largely determine their life chances.

Building upon Van Dijk's classification of digital inequalities in terms of physical, motivational, temporal, and skills access,¹ I find that poor internet skills inhibit individuals' 'ability to combine information from an increasing number of media, channels, and individual sources' (2005, p. 85). My analysis goes further by demonstrating that poor internet skills may strengthen individuals' preferences for information-channels other than digital media. As my study shows, those youth with the least access to digital resources, PCRIS, are also least likely to have digital literacy skills that would allow them to benefit from using the internet in their future planning. Their lack of skills has bearing on their information-channel preferences: a predilection to use personal contacts and eschew online information-seeking. These findings are drawn from a rich empirical base with which I expand the notion of information capital *vis-à-vis* aspirations.

Here, I take my cue from the seminal research identifying the linkage between enhanced economic life chances and productivity of internet use (DiMaggio *et al.* 2004). For adults, the relationship between internet skills and internet-mediated information-seeking for 'life's major moments' (Horrigan & Rainie 2006) reveals how the Matthew Effect plays out in the information-seeking that informs pivotal life decisions. Witte and Mannon (2010) find that online activity 'footprints' vary by the class and educational background of the user; the higher the class and educational background, the larger the footprint for many 'major moments'.² While their analysis confines itself to adults rather than adolescents, it indicates the importance of information-seeking.

For adolescents planning their post-secondary trajectories, online information-seeking is a significant component of information-opportunity structures. When adolescents engage in information-seeking, new media can serve as a complement to or a substitute for offline information resources. Like Mesch and Talmud (2010), I examine the diversity of practices involved in online information-seeking and their connection to offline resources. I, too, find that individuals embedded in social networks with higher levels of education, MCIS, use the information they acquire online for deeper and more varied capital-enhancing activities in the offline world, namely seeking information central to planning their life trajectories. These findings give substance to the importance of information capital in social reproduction.

Also parallel to Mesch and Talmud (2010), I find that adolescents can autonomously access social worlds through online channels that they could not otherwise access without the internet. IRIS use the internet effectively to

communicate with adult professionals outside of their parents' social networks. This finding confirms previous work (Banet-Webster 2004; Holloway & Valentine 2003) on how the use of the internet can be a capital-enhancing activity for youth to enlarge their social networks because the internet frees them from parental supervision.

Like Kraut's 'rich get richer' model (Kraut *et al.* 2002) indicating that individuals who enjoy abundant contacts in the offline world benefit more from their use of the internet than those who are more socially isolated, my article addresses both the 'amplifying' and 'normalizing' dimensions of digital differentiation (Mesch & Talmud 2010, p. 109). The inquiry shows that, depending on the information-opportunity structures encountered by information-seekers, the addition of an online information-channel can have 'amplifying' or 'normalizing' effects. Findings indicate that MCIS, who enjoy access to online and offline sources, are often able to use online-sourced information to augment information available offline. However, IRIS without recourse to useful offline information sources can benefit immensely from online sources. The availability of these sources consequently is a normalizing function by reducing the information-gap between them and information-seekers with more favorable opportunities for gathering information in the offline world.

Also drawing on Kraut *et al.*'s (2002) 'social compensation' model, my findings confirm that those who lack social support or have fewer offline social resources may potentially profit most from using the internet. In this study, IRIS with access to high-quality home internet but lacking rich social networks in their aspirational career field use the internet efficaciously. Using the internet, they are able to fill gaps in their social networks and, as in Bargh and McKenna's (2004) study, use digital media to connect with people who can provide useful information otherwise missing locally.

However, this process can also work conversely. PCRSIS, without access to digital resources and embedded in non-wired social networks, not only avoid using the internet in their future planning but do not believe it is a valuable resource. Here, those who stand to gain the most from new media to improve their life chances are least likely to use it – denying themselves access to information crucial to their future planning and making themselves relatively information-poorer.

Bringing two sides of the same coin together, information capital can both reinforce pre-existing social disparities and provide windows to escape them. Mesch and Talmud (2010) suggest that one of the central motivations for internet use is the search for others who share similar interests, but who do not belong to their immediate social networks due to social segregation. Like them, I argue that the internet can replace other social ties for those with access to resources who take advantage of opportunities for bridging and bonding; but, at the same time, those lacking digital resources are increasingly isolated from these benefits.

Data and methods

Uncovering how advantaged and disadvantaged youth use digital resources, my research analyzes the constraints and opportunity costs shaping respondents' information-seeking for college and career.³ The data is part of a longitudinal study from 2006–2011 combining ethnographic-fieldwork, focus groups, interviews, and surveys conducted in high schools in agricultural California.

Emerging from this larger project, focus groups with over 300 respondents provide the data analyzed in this study. Focus group interviewing is a method with a 'long and honourable history in sociology' (Luker 2008, p. 180). The focus group interviewees are economically and ethnically diverse; males (52 per cent) slightly outnumber females (48 per cent). Latinos, African-Americans, Asian Americans, and Whites comprise 67 per cent, 3 per cent, 10 per cent, and 20 per cent of the focus groups, respectively. A significant proportion of the students qualify for free lunch, indicating that the most economically disadvantaged come from families with incomes falling below federal poverty measures.

This inquiry is an exploratory and generative multi-site case study. The analytic categories that emerged from the focus group interviews were developed using a grounded approach ideal for emergent phenomenon such as new media (Mcmillan & Morrison 2006). As my goal was to elaborate emergent conceptualizations and explanatory accounts, rather than to verify hypotheses or test a priori conceptualizations (Luker 2008), I generated analytic frames by relying more on induction from empirical data than on deduction from theoretical postulates (Alford 1998). More specifically, in the data from the initial focus groups, I observed a connection between information-seeking broadly defined and post-secondary planning. I developed targeted queries regarding vocational preferences, use of personal and mediated information sources, and information-seeking. Employing open coding, I identified clusters concerning preferences and opportunities for information-seeking about career and/or college and access to resources. With these emergent analytic categories, I noted connections between respondents' preferences for certain information-channels and the information-opportunity structures open to them, which I confirmed as I continued inductively coding the data. Through this iterative process, I developed generalizations about the clustering of vocational and educational preferences, information-seeking strategies, and access to information resources. Focused coding was enlisted to verify and confirm these patterns. This process ensured that the analytic categories were grounded in the data.

Regarding the strengths of focus group interviewing, the research benefited from the respondents' firsthand accounts (Nichols 2004) of the ways in which they secured information relevant to their educational and occupational planning activities. These accounts proved critical to uncover the connections between vocational preferences, information-seeking strategies, and information-opportunity

structures. While the very rich data provides an excellent foundation for ‘discovery-oriented’ (Luker 2008) analysis and analytic description, this method does not allow for the testing of hypotheses regarding cause–effect relationships among prespecified factors. Finally, as the present analysis draws upon focus groups conducted in a single region, the goal is to provide rich analytic description of understudied phenomena rather than claiming to generalize the findings to any larger population.

Analysis

Four distinct *information-seeking situations* corresponding to four groups of information-seekers emerge from my classificatory examination: IRIS, PCRIS, ERIS, and MCIS (see Table 1).

Findings

Internet-reliant information-seekers

A minority of students, IRIS, are almost entirely dependent on new media for information regarding their career development and educational options. While they enjoy high-quality home internet access, offline they are isolated from a network of adult contacts knowledgeable about the fields to which they aspire. Given the scarcity of relevant information sources in their immediate personal and local communities, IRIS initiate all information-seeking online. They obtain information about educational and career options primarily through mining online information sources, primarily publicly accessible websites. Most aspire to careers in expressive industries such as design or the arts such as film, music, and dance.

IRIS have no one in their personal community with jobs or educations in their fields who can act as a mentor or purveyor of information. As Miguel⁴ lamented, ‘No one here is into my scene [music]. . . I wish there was someone that I knew. . . that I could talk to about where to go to school’. As Sheila recounted: ‘I found this website and I knew this was the school for me to study interior design. . . but, I only found out about this place after spending many hours surfing the web and visiting a lot of websites for different institutes’. Alonzo said, ‘I feel that I can get more information and better information off the web. My teachers don’t know so much about what it’s like to be a cartoonist and what kind of education you need’.

With no personal contacts or social networks to facilitate their information-seeking, IRIS are entirely dependent on the internet for personal relationships that influence their post-secondary educational plans. Gleaning information online from professional groups is critical because IRIS believe that the received

TABLE 1 Conditions of information-seeking practices.

	<i>Career aspirations</i>	<i>Educational aspirations</i>	<i>Reliance on internet</i>	<i>Reliance on personal community</i>	<i>Reliance on educators</i>
IRIS	Expressive	Art School College: BFA	Sole channel	No	No
PCRIS	Traditional blue, pink, & white collar jobs	Vocational Training College: AA or BA	No	Sole channel	No
ERIS	Traditional white collar jobs	College: BA	Complementary channel	No	Primary channel
MCIS	Traditional white collar jobs	College: BA	Multiplicative channel	Multiplicative channel	Multiplicative channel

wisdom followed by their peers going into more traditional careers and educational paths, namely attending the local community college, Jefferson CC, will not help them. An aspiring graffiti artist, Hidalgo, related, 'Yeah everyone here just kept telling me to go to Jefferson. But I knew that wasn't gonna do it for me. I mean Jefferson will just be the same people – nothing new. How is that gonna help me break in?' In a follow-up question, Hidalgo explained further, 'Nah, I started looking at these people online who were talking about where to go. No one here told me about schools outside of town. I saw it online'. In a follow-up question, Hidalgo explained how he discovered a much more useful goldmine on the web: 'I started looking at these people online who were talking about where to go to school. No one here told me about schools outside of town. . .I saw it online'. Bob, another aspiring artist, dismissed his friends and family members as relevant information sources: 'My friends and family don't know anything about art work, so why should I bother asking them anything?' Searching for a community of practitioners, Bob explained: 'I go on deviantART so I can hear what other people have to say'. When asked how he found the deviantART community, Bob stated, 'Just messing around online. I spend a lot of time messing around, so I find things'.

Faced with inadequate education and career resources close to home, IRIS describe going online to find what programs different schools offer. They adopt an exploratory information habitus towards their surfing and use of the internet in which they become active participants who seek out information. This holds true for their information-seeking about colleges or specialized training. An aspiring dancer, Shaun, explained, 'Yeah I was cruising around YouTube lookin' for stuff when I like found this program in Santa Monica that will let me do my art. I can't decide if I want to do graphic design or dancing, but this place will let me do both'. When asked if he could do the same thing at Jefferson CC, Shaun said, 'No way. I was all over their site and it sucks. You can totally tell from the website. I've already applied to that place in Santa Monica and they've sent me tons of stuff. Why would I go to Jefferson. . .when I found a better place on my own'. Jorge echoed this perspective: 'I wanna be a cartoonist but like there is nothing at Jefferson for that. . .I think this place—AI [Art Institute of California]—is right for me'. When probed, both Jorge and Shaun said that they found these schools by doing open-ended searches on Google and other search engines rather than following leads provided by teachers, family, friends, or other personal contacts. Sheila found the San Francisco Art Institute when she searched for arts programs: 'The San Francisco Art Institute. It just kept coming up as a link, so I checked it out. It looks really good – has interior design and drawing, which is what I want to do'.

It should be noted that IRIS enjoy high-quality home internet access, which allows them the luxury of surfing without constraint. High-quality home access also allows IRIS to be active contributors of online content. Shaun said that he

contributed several dance audition videos on YouTube from which he was selected for performances: 'That's how I do my dance auditions. I put my stuff on YouTube – they do the auditions based on the videos we post, so if they like it, they contact you'. Like Shaun, Bob actively digitizes his work for dissemination to a community of fellow practitioners via the internet: 'So that I can share my stuff, I need to put it online. And if I want to see other people's stuff I go to the internet – I mean that is where it's at'. These efforts have met with positive reception: Bob has received positive feedback in online communities that spurs him to continue, and Shaun has repeatedly been selected to perform based on his YouTube auditions.

This positive feedback loop means that IRIS are incentivized to continually improve their skills for seeking information and creating content. They internalize the belief that their efforts will produce payoffs. Bob elucidated, 'At first I didn't really know what to look for, but the more time I looked at stuff, I learned the right words to use and what to search for. So now I can find what I want pretty quickly . . . so if I see something on deviantART then I can use that information to look somewhere else to share my stuff'. Shaun described a similar trajectory: 'Yeah I didn't know where to go or where to look so I just started surfing . . . little by little I kept seein' the same things, so I knew it was important . . . same with the videos. It was harder at first, but I got better at it'. The more these students seek and produce online content, the more they become skilled at these activities and are more likely to garner additional positive feedback that affirms the payoff for taking advantage of the internet as an information opportunity. Adopting this internalized information habitus makes IRIS highly likely to continue their use of the internet.

Personal community-reliant information-seekers

In contrast to students who seek out career and education information primarily from online sources, a much larger group of students favors members of their personal communities as their primary sources of reliable and useful information for education and careers. This second classification, PCRIS is the largest of the four distinctive groups and comprises the majority of students in the focus groups. Most members of this group have no or low-quality home internet access. In direct contrast to IRIS, PCRIS have not had the luxury of exploratory surfing that results in sophisticated online searching skills. Lacking the skills that make online searching highly productive, PCRIS are unwilling to use the internet in their education and career information searches. By necessity, this group has adopted a task-oriented information habitus towards their information-seeking both online and offline. Their searching must produce payoffs and results. Given the task-oriented information habitus that they have internalized, these PCRIS believe that the information gleaned from personal relationships is far more accurate and reliable than information available on the internet.

Whereas IRIS eschew personal contacts in favor of the internet, PCRIS strongly prefer to use personal relationships as their primary source of information-seeking.

Further, unlike IRIS who aspire to join expressive professions, PCRIS aspire to more traditional occupations spanning blue, pink, and white collar occupations. The majority know an adult in the field to which they aspire, and most are highly motivated to help their families and to escape the economic hardship they have experienced. Some intend to complete a four-year degree to earn a BA or BS. Jesús elucidated, 'I want to take care of my mom, and I need a good job to do that. . . My mom can't really give me information about college. . . I think that I would be a good teacher like my brother'. Other PCRIS aim to become chefs, welders, mechanics, fire fighters, and medical assistants. As these professions indicate, a significant number of these students plan to seek skilled or highly skilled vocational training or an AA; for their goals, a BA or BS degree is not necessary. Serena related, 'My mom and dad go out to the fields everyday. I want to help them, and I don't want to do that. But my cousin decorates cakes – I want to do that, too. She said that I can go to Jefferson to take classes that I need'.

As these students' experiences indicate, many PCRIS do not have parents who can guide their post-secondary educations. Instead, PCRIS often rely on older siblings or family for career-training information. Albert stated, '...I want to go to Jefferson to be a chef like my older brother – he can hook me up'. Most PCRIS state a strong preference to attend a school where they have an older sibling or friend. Sabrina explained, 'Well if I wouldn't know anyone, I wouldn't know where to go or what to do. It's better for me to go to Jefferson 'cuz I know people there like my older sister and her friends'. PCRIS usually identify extended family members as vital information resources. Often, these students have large families and many cousins providing multiple sources of personal information. Alex revealed: 'Yeah I was at a BBQ this weekend and saw my cousin José – he just finished the academy at Jefferson – told me what to do and how to do it'.

Significantly, some PCRIS aspire to attend four-year colleges. Almost without exception, these students have an older sibling who is a first-generation college student. Emily explained, 'My sister was the first person in our family to go to college. She is at UCSB and really likes it. She says that I should go there and that I can do it, too'. Alfred said, 'My brother is at Poly. I want to go there, too'. Sergei told his group, 'My brother is at Cal State San Diego. I'm gonna go there'. When asked if they had used the internet to look up information on other colleges, these students replied in the negative. Emily said, 'Oh no. I just want to go to UCSB'. Alfred shook his head and stated, 'No I don't need to. I'm good with San Diego'. Sergei just smiled and said, 'Nah. I know where I wanna go'. For each, an older sibling's experience and expertise are perceived as more valuable than any other information source.

When asked if they used the internet to look up career or college information, the majority had not done so and did not plan to. Gabriela said, 'No I don't want to use the internet. I don't know if the information is true and you can't ask questions. It's better to talk to people so that you can ask questions'. Rafael agreed, 'Yeah there is a lot of bad stuff out there on the internet. It's better to go to someone you know who can tell you what to do'. PCRIS avoid using the internet for career and college information-seeking because they question the reliability of online information: the internet is 'not reliable', or is 'full of useless information', or 'has too much information'.

These patterns of information-seeking also play out in the job arena when PCRIS look for work. Although some were already employed in part-time jobs or actively seeking work, none had used the internet to aid their efforts. When asked if they had used aggregator job search sites such as *monster*, they were unfamiliar with these websites. Further, none of the PCRIS had used the internet to see if local chains such as Target or Walmart were hiring. In general, PCRIS count on word of mouth via their personal networks. John stated, 'All of my cousins know that I need a job so they are lookin' out for me. When somethin' comes up, they will call me right away...then I'll go in...get to know people...you know that's how it works'. Katherine echoed, 'Yeah so my mom's friend is working at Costco. So when I want a job she said that I can go with her to meet people. It's better that way. She can tell me what to do'.

When they do not know someone who can 'hook them up', entrepreneurial PCRIS try to get to know the person who could hire them. PCRIS believe that face-to-face contact is vital to signal that they are serious. Serena explained, 'It won't do me any good [to use the internet]. I need to go and get the application. Then I need to find the manager and give the application to them'. Carlos affirmed, 'I tried using the computer at JC Penny. But it doesn't work. They never called me. They need to see who I am. That's why it is important to go and turn in the application yourself so that they know who you are'. Other PCRIS said that using the internet did not show proper motivation to potential employers because '...if you are really interested in a job, you will go there over and over to show them that you mean it – you can't do that with the computer'.

Even more important, PCRIS do not know how to use the internet to find information on jobs because they lack high-quality home access. When asked, 'If you had an iPad in front of you right now, what would you do to find a job?' The vast majority responded with permutations of: 'I wouldn't know what to do', or 'I don't know', or 'I've never done that'. Students were asked: 'If you had Google open in front of you, what words would you use to search for a job?' PCRIS gave general responses such as 'jobs' or 'how to get a job'. Those that gave more targeted responses said things like 'welding' or 'chef'. For PCRIS, information-seeking is much more valuable when they interact with people because they can ask questions: 'It's better to talk to someone because they

can tell you what you want to know and answer your questions'. As Marcia explained, 'Computers don't answer your questions. You need a person for that'.

PCRIS are hungry for work and eager to work hard. Yet, implicitly these students believe that the hiring process is not based on a meritocratic system in which an employer bases decisions on educational or skill credentials. Cindy said, 'It's all about who you know and how they can help you – not where you went to school'. PCRIS think that personal contact is the key to being hired. For this reason, they perceive impersonal or mediated information-seeking or applications via the internet as useless. They are willing to exhaust temporal or transport resources to seek work even if it would save them time to perform tasks remotely. As Randy described, 'I will get a ride and go from store to store and keep trying to see the manager. I'll do this until I get a job... I did this summer and it worked'.

Finally, their experiences reinforce their view that interpersonal contact yields high payoffs, whereas internet use yields no or low payoffs. While PCRIS do not recognize the internet as a valuable tool to help them in their efforts, they are well aware that face-to-face interaction produces immediate informational and emotional payoffs through answered questions or being told 'I did it this way. You can, too'. Seeing success as a result of their efforts, they rely on face-to-face interaction and information-seeking as socially rewarding activities. By contrast, web searches leave them feeling overwhelmed with too much information or dissatisfied because their efforts do not produce desired results. Their lack of internet access prohibits them from acquiring internet information-seeking skills. As a result, they do not learn the value of the internet as a tool or see its benefit for them. In a downward cycle, PCRIS do not invest in new media skill building because they perceive it as having little value. They expend time and effort on physical displacement in their face-to-face information-seeking efforts, further internalizing a task-oriented stance towards their information-seeking activities.

Educator-reliant information-seekers

While neither as rare as IRIS nor as common as PCRIS, ERIS depend almost entirely on educators for their college and career information. Like PCRIS, ERIS rely on information from people. However, unlike PCRIS, ERIS are eager to use the internet. Yet, unlike IRIS, they do not display the same savvy and reliance on the internet for exploratory web surfing. Instead, ERIS use the internet to follow-up on leads or information provided by educators. They use the internet as an auxiliary resource for information that has already been vetted by someone with educational credentials. Eddie explained, 'First I talked to my teacher and asked her where I should go. Then I went to the website'. When asked if he had used other information resources, Eddie said, 'No. My teacher didn't tell me to go anywhere else'.

Like PCRIS, the vast majority of ERIS are first-generation college students who must rely heavily on educators to identify post-secondary educational trajectories for them. In response to the question: 'If you had an iPad in front of you right now, what would you do to find information on college?', ERIS list a school that has been suggested by an educator. Anne said, 'I would go to the Cal State Long Beach site...My teacher told me that would be a good place for me to study science. I'm strong in science'. Betsy stated, 'I would go to the Jefferson page because I went to Ms. Stein and told her I want to be a nurse. She helped me out and showed me the page and the links and how they offer classes on that'. Raul said: 'I would use the web to go to Cal Poly for architecture. My math teacher told me that since I am good at math that I should think about architecture – he said that Cal Poly is really known for architecture, so I should go there'.

Reliance on educators' 'expert' opinions drives ERI-Seeking. ERIS go to an educator who identifies an information-seeking path for them; educators' expert opinions jumpstart ERIS use of the internet as an auxiliary information source. Juanita related, 'Mrs. Garcia pushed me to go on the trip to Fresno State with the school. Ever since then I have wanted to go there. I've already visited the website to see how to apply'. George said, 'I didn't know what to do when I went into the College Centre, but Ms. Brown showed me how to use *collegeboard* to apply to a bunch of CSUs'. Mary echoed, 'I didn't think that I could go to college, but Mr. Gomez told me to go to the information session with [a small private university] when they came to campus...now I know how to get information from the college through the internet and can apply online'.

Furthermore, ERIS lock onto information targets. Because ERIS are familiar with colleges primarily as a result of their encounters with educators, they search only for information relating to colleges endorsed by expert opinion. When asked what websites they had visited, ERIS reported limiting their information-seeking to colleges already recommended by educators, primarily teachers. In response to: 'What college websites have you visited?', Jen said, 'UCSB and UCLA – my AP teacher told me that I can study English there'. Responding to the follow-up, 'Have you visited any other college sites?' Jen continued, 'No. I don't know where else to go'. Gabriel told a similar story: '...I visited the Northridge site to see about history after Mr. Gomez told me about it'. When queried further, Gabriel answered in the negative: 'No I haven't visited any other college sites. That is the only one'. Vanessa only had eyes for Fresno State after a teacher-chaperoned visit, 'It's like my dream school now. I don't want to go anywhere else'. Like PCRIS, ERIS do not engage in information-seeking via exploratory web surfing. When asked: 'Have you ever searched for information on other colleges?' these students said that they would not know what schools to look up. Rather they confined their online activities to those schools already identified by educators. Finally, because ERIS are encouraged by educators to enter professions requiring college educations, these

students concentrate their information-seeking efforts on colleges or universities rather than seeking information about jobs. They report having seen this model work for other first-generation college students from their school who sought out educators for mentorship and who are currently at four-year institutions or who graduated from college: ‘Bobbie is at Chico State doing really well after Mr. Gomez helped him find out where to go’.

Multi-channel information-seekers

The final group, MCIS, enjoys access to multiple information sources. By contrast to the three other groups, MCIS avail themselves of all potential information sources including the internet, family, educators, and friends. Only this group is (1) likely to know someone who has worked in the field to which they aspire; (2) have personal networks from which to gain relevant information via face-to-face encounters; (3) take advantage of educators’ knowledge; and (4) use the web abundantly for independent information-seeking regarding education and career. The majority of MCIS enjoy high-quality home internet access. Almost all of their parents are high school graduates, many with some college or post-secondary vocational education; some have at least one parent who has graduated from college. As such, MCIS are the most information-rich group and experience information abundance in both their offline and online environments. Use of these resources in tandem with one another results in the most sophisticated information-seeking of all groups.

Most MCIS plan to attend college or obtain certification for highly skilled professions. When asked if they had spoken to people about where they might go to college, MCIS listed a plethora of individuals: parents, siblings, relatives, and educators, as well as peers from whom they had gleaned information. Like PCRIS, MCIS rely on family as important information sources. Carlos said, ‘My uncle went to UCLA and is encouraging me to apply there’. Similar to ERIS, MCIS use educators as valuable resources. Tanya reported, ‘Several of my teachers have spoken to me about applying to the UCs. I’m thinking about UCSB and UCLA’.

However, only MCIS are highly likely to name their friends or peers as an important information resource for college. Sally explained, ‘My friend Kendra and I are doing college search stuff together. That way we can swap information’. Rosalia said, ‘I’m good friends with other girls on the cheer team. We are looking into colleges together so that we can apply to the same schools’. Billy concurred: ‘I’m on the basketball team with some guys who are looking into four years – helps me to know what is out there’. Oscar said, ‘My friend Simon took me to the College Centre so that we could look up which colleges to apply to’.

In addition, MCIS use the internet for exploratory surfing to familiarize themselves with new colleges. Unlike ERIS, these students go beyond following leads provided by educators. MCIS use the internet to virtually visit new schools

both in California and other parts of the US Alvin stated, 'After the college speaker came to Mrs. Robles' class, I thought of looking outside of California for the first time. I found U Mass Amherst by looking around the internet. It is way cheaper than schools in California'. Maria explained, 'I went on *college-board* and did the widest search possible to include the whole United States. Then I went to all of the sites that came up and visited them. I found a lot of schools that way'.

This pattern also holds true for job-related information-seeking. Again, MCIS integrate information from multiple sources in tandem. Alma related, '...my aunt is a nurse and she told me about her job. It seemed really interesting to me so I went on the internet to get more information. But while I was on this one site, I found out about physical therapy, and now I want to do that'. Ernesto stated, '...I love watching CSI, and I went to my uncle who is a cop and asked him about it. He told me that if I want to do the lab work I need to study something called forensic science. . . now I just need to go online again to find out what kind of science I need to study at college'. Christine revealed, 'My older brother is at Jefferson and he took a photography class there that is kind of cool. So I looked online to see if I can do that at a four-year school – you know photography or something like that. That's how I found the Brooks Institute'. In sum, MCIS have internalized an exploratory information habitus to their online and offline information-seeking. Thanks to high-quality home access, like IRIS, MCIS have honed their online search skills through abundant practice. These skills mean that their searches yield payoffs that further validate the exploratory stance and give them the best possible chance of success at finding the information they need because they draw on multiple information sources. This group alone engages in *exploratory-information integration* using all information-channels.

Discussion and conclusions

This article examines linkages between unequal access to information resources and definitions of appropriate internet use for educational and career information-seeking on the part of advantaged and disadvantaged students. Analysis provides the evidentiary base to develop the concept of *information-seeking situations* characterizing adolescents' future planning, as well as rich empirical scaffolding undergirding the concepts of information-channel preferences and information-opportunity structures as they relate to information capital, concepts hitherto empirically underdeveloped. My research reveals how aspirations are connected to information-opportunity structures *and* internalized stances towards the appropriate use of different information-channels.

All four groups have internalized particular stances towards the use of different information-channels for educational and career information-seeking. Based

on their access to information resources, each group approaches information-channels in a different way. As my analysis shows, students cluster into distinctive groups depending on the degree in which they rely on internet-mediated information sources versus information from personal communities. Not only do members of these four groups differ from one another in terms of their access to these information-channels, but they also vary in the ways that they make use of the information-channels open to them.

Forming a small but revealing subgroup, IRIS rely almost exclusively on internet-mediated sources to obtain information relevant to their expressive career aspirations. They rely on high-quality internet access not only for information-seeking but to produce digital content. Socially isolated from networks of personal contacts in expressive industries and geographically distant from centers of professional activity, they compensate by making extensive use of the internet to obtain information and forge relationships. They display a highly exploratory stance towards their internet use as their only point of contact with their aspirational fields. Actively engaged online, this highly skilled group sees a clear relationship between internet use and payoffs in their professional development thanks to favorable conditions of access.

More numerous, but lacking access to online resources, PCRIS confront a very different information-opportunity structure. Offline they enjoy wide personal contacts to obtain information about traditional (nonexpressive) educational and career options that interest them spanning traditional blue, pink, and white-collar jobs. PCRIS obtain informational payoffs through interaction with personal community members who have already attended or entered preferred educational institutions or occupational fields. PCRIS acquire what they define as useful information through face-to-face contact and emotional gratification by seeing this model of information-seeking bring success to others in their immediate environments, giving them hope for their own futures. Very few PCRIS venture onto the internet to find additional information, eschewing it almost completely in favor of personal contacts. Lacking quality internet access, they do not invest their time online and subsequently lack internet skills that could potentially enhance payoffs in their information-seeking. When these students do use online sources, they distrust much of the content. Because they perceive the internet as offering little or no benefit to them, they do not use it and deny themselves an information-channel that could improve their life chances.

A third group, ERIS, accounts for a large fraction of respondents. These students are more comfortable with online sources than their PCRIS counterparts, but nevertheless relegate it to a secondary role in their information-seeking. They differ from PCRIS in their almost exclusive reliance on personal contacts with educators to secure information vetted by expert opinion. Lacking personal contacts within fields to which they aspire, ERIS follow leads on colleges and careers supplied by educators that typically point towards four-year colleges

and white-collar occupations. Unlike IRIS using the internet to communicate one-on-one with practitioners and unlike PCRIS dependent on firsthand accounts from personal community members offline, ERIS rely on educators as their primary informational-channel. ERIS wield more internet skills than PCRIS but must be prompted by educators. They profit from digital media as auxiliary to educators' expert opinion, but fail to internalize the exploratory stance shared by IRIS and MCIS who engage in unprompted information-seeking.

MCIS, a small, select group obtain information from online sources, personal contacts among educators, peers, and personal communities. Unlike other groups, MCIS are not overly reliant on any one information-channel. They actively seek advice from educators but also talk to friends and family. Unlike PCRIS or ERIS, MCIS use multiple information sources in concert with one another to explore a wider range of traditional occupations requiring post-secondary education. They engage in unprompted information-seeking in the online arena to complement their use of offline resources. Of the four groups, MCIS enjoy the most favorable information-opportunity structure through exploratory-information integration of all information-channels.

To understand students' aspirations, it is necessary to expose their information-seeking practices stemming from internalized stances towards different information-channels. Contextualizing information-seeking practices requires looking at the breadth and usefulness of networks of personal contacts and conditions of access to online sources. Distinctive prompted and unprompted information-seeking practices unfold in tandem with distinctive aspirational planning. The internet is a vital information-channel for IRIS inclining towards expressive occupations whose practitioners are socially and geographically remote. Personal communities and educators are valuable information-channels for those oriented to traditional occupations. However, information-seekers who rely on only one information-channel do not obtain the range or depth of information available to those who exploit multiple information-channels.

Casting light on information-seeking practices among students with access to a range of information resources, my study enriches our understanding of actions, decisions, and orientations that help to define life chances and futures. Illuminating information-seeking situations and expanding our knowledge of the importance of information capital, the research reveals the nexus of adolescents' vocational and educational planning, information-seeking, internet use, and digital inequality. My work provides the empirical underpinning necessary to develop my concept of *information-opportunity structures* as a critical component of *information habitus* (Robinson 2009). Further developing my theory of information habitus in this article, I uncover the ramifications of information habitus on life chances by revealing how advantaged and disadvantaged youth internalize different stances towards information-seeking for their post-secondary education and career plans. Just as adolescents internalize stances

towards the appropriate use of the internet, they also internalize stances towards appropriate information gathering for vocational and educational planning based on what they believe to be the perceived costs and payoffs of each information-channel.

My classificatory effort contributes to multiple research problematics by making explicit linkages between information inequalities, information-seeking, and aspirational planning to address the connection between information capital and adolescents' future planning that will largely determine their life chances. Students who have no or low-quality home internet access (PCRIS) do not enjoy adequate access to resources. They adopt a task-oriented information habitus towards their online activities. Consequently, they do not possess sophisticated information-seeking skills and do not perceive their online activities as garnering a significant payoff. Although mobilizing online sources would maximize the efficiency of their searching, these students make little use of online sources in seeking the more traditional educational and career options they hope to pursue. By contrast, those groups who enjoy high-quality, autonomous internet access (IRIS and MCIS) have internalized a playful or exploratory information habitus towards their information-seeking. They realize that mobilizing online resources maximizes the effectiveness of their searching because they see a clear linkage between internet use and payoffs that encourage further internet use.

Here the Matthew Effect plays out in terms of information-seeking that informs pivotal life decisions. Ironically, those who could benefit most from digital media are least likely to effectively harness its power; they erroneously believe that internet use yields no payoffs. Yet while the internet reinforces pre-existing social disparities, it also provides windows to escape them. At the same time, analysis reveals how new media serves as either a complement to or a substitute for offline information resources. Faced with offline social networks devoid of individuals who can offer information on their career aspirations, IRIS turn to the internet to forge new relationships. They exploit their digital resources to effectively communicate with adult professionals outside of their parents' social networks. Their entrepreneurial use of new media shows how the internet is an agent of powerful social change enabling adolescents to improve their life chances by accessing social worlds through online channels that they could not otherwise access.

In conclusion, the paper unearths hitherto unidentified linkages between youths' practices relating to information acquisition and their educational and occupational aspirations. As my data reveal, different groups of information-seekers encounter more or less favorable information-opportunity structures. Further, they develop distinctive preferences for particular information-channels based on their experiences with offline and online sources. Differences among students arise in their relative reliance on each of these sources. While their information-seeking practices are related to issues of internet access, digital

inequality is part of larger differences in information-opportunity structures related to information habitus. Each group faces a different opportunity structure and perceives relative payoffs from different information-seeking practices, thereby internalizing stances towards appropriate information-seeking. Future work is needed to develop these concepts further and thereby open new windows onto our understanding of the role of information capital in the growing information society.

Acknowledgements

I would like to thank the reviewers and editors, Gustavo Mesch and Nalini Kotamraju, for their insights and valuable recommendations. I would also like to express my appreciation to Paul DiMaggio for his thoughtful commentary at the early stage of this project. Sincere thanks are also due to the dedicated educators and students in my fieldsites, my collaborator Jeremy Schulz, Laura Nichols, and my SCU student-researchers. Finally, I would like to acknowledge generous funding from the Center for Science, Technology, and Society; Bannan Institute, Ignatian Center for Jesuit Education; Internal Research Grants Program; Faculty-Student Research Assistant Award Program; and Office of the Provost Undergraduate Research Initiative at Santa Clara University.

Notes

- 1 While the first wave of scholarship on digital inequality largely concentrated on access differences, scholars have increasingly broadened their research agendas to examine more nuanced facets of digital inequality such as gender and production (Kotamraju 2003). Most recently, scholars of new media have suggested that usage of the internet as an information source yields many positive benefits for teenagers; by contrast, there are many potential negative consequences of digital inequality including lower educational attainment and lack of skills to succeed in the adult job market (Mesch & Talmud 2010).
- 2 Witte and Mannon (2010) find that for adults, this relationship does not hold true in major moments related to education, namely how adults use the internet for information-seeking for additional educational training and selecting a school for oneself or one's children.
- 3 Previous findings from the larger project (Robinson 2009) develop the concept of information habitus to illuminate social processes through which economically advantaged and disadvantaged youth acquire particular skills and habits associated with the use of information technologies. Facets of analysis indicate that the ways diverse populations use

the internet, as well as their social circumstances, often prevent inequality from being mitigated. For those without high-quality, consistent access to new media resources, basic access to the internet does not have the same impact as it does for their economically privileged counterparts. In tandem with other resources, different use of the internet as an information resource replicates offline inequalities and accentuates the impacts of disadvantage.

- 4 All names of individuals and institutions have been replaced by pseudonyms to protect anonymity. Grammar has been corrected when necessary for clarity.

References

- Alford, R. (1998) *The Craft of Inquiry*, Oxford University Press, New York.
- Banet-Webster, S. (2004) 'Surfin' the Net: Children, Parental Obsolescence, and Citizenship', in *Technological Visions: The Hopes and Fears that Shape New Technologies*, eds M. Sturken, D. Thomas & S. Ball Rokeach, Temple University Press, Philadelphia, pp. 270–292.
- Bargh, J. & McKenna, K. (2004) 'The Internet and Social Life', *Annual Review of Psychology*, vol. 55, pp. 573–590.
- Bluestein, D. & Phillips, S. (1988) 'Individual and contextual factors in career exploration', *Journal of Vocational Behavior*, vol. 33, no. 2, pp. 203–216.
- Cotten, S. & Jelenewicz, M. (2006) 'A disappearing digital divide among college students? Peeling away the layers of the digital divide', *Social Science Computer Review*, vol. 24, no. 2, pp. 497–506.
- Csikszentmihalyi, M. & Schneider, B. (2000) *Becoming Adult: How Teenagers Prepare for the World of Work*, Basic Books, New York.
- Devine, F. (2004) *Class Practices: How Parents Help Children Get Good Jobs*, Cambridge University Press, Cambridge, UK.
- DiMaggio, P., Hargittai, E., Celeste, C. & Shafer, S. (2004) 'Digital inequality: from unequal access to differentiated use', in *Social Inequality*, ed. K. Neckerman, Russell Sage Foundation, New York, pp. 355–400.
- Hamelink, C. (2001) *The Ethics of Cyberspace*, Sage, London.
- Holloway, S. & Valentine, G. (2003) *Cyberkids: Children in the Information Age*, Routledge Falmer, London.
- Horrigan, J. & Rainie, L. (2006) 'The Internet's Growing Role in Life's Major Moments', Pew Internet and American Life Project, Washington, DC, [Online] Available at: <http://www.pewinternet.org/Reports/2006/The-Internets-Growing-Role-in-Lifes-Major-Moments.aspx?r=1> (25 February 2011).
- Julien, H. (1999) 'Barriers to adolescents' information seeking for career decision making', *Journal of the American Society for Information Science*, vol. 50, no. 1, pp. 38–48.

- Kotamraju, N. (2003) 'Art versus code: the gendered evolution of web design skills', in *Society Online: The Internet in Context*, eds P. Howard & S. Jones, Sage, Thousand Oaks, pp. 189–200.
- Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V. & Crawford, A. (2002) 'Internet paradox revisited', *Journal of Social Issues*, vol. 58, no. 1, pp. 49–74.
- Luker, K. (2008) *Salsa Dancing into the Social Sciences: Research in an age of Info-glut*, Harvard University Press, Cambridge.
- Lareau, A. (2003) *Unequal Childhoods: Class, Race, and Family Life*, UC Press, Berkeley.
- Mcmillan, S. & Morrison, M. (2006) 'Coming of age with the internet: a qualitative exploration of how the internet has become an integral part of young people's lives', *New Media & Society*, vol. 8, no. no.1, pp. 73–95.
- Mesch, G. & Talmud, I. (2010) *The Social World of Adolescence in the Information Age*, Routledge, New York.
- Nichols, L. (2004) 'Giving students a voice: learning through autobiography', *Thought & Action*, vol. 19, no. 2, pp. 37–50.
- Robinson, L. (2009) 'A taste for the necessary: a Bourdieuan approach to digital inequality', *Information, Communication, & Society*, vol. 12, no. no 4, pp. 488–506.
- Sassen, S. (1997) 'Electronic space and power', *Journal of Urban Technology and Power*, vol. vol.4, no. 1, pp. pp.1–17.
- Sassen, S. (2002) 'Towards a sociology of information technology', *Current Sociology*, vol. 50, no. 3, pp. 365–388.
- Schneider, B. & Stevenson, D. (1999) *The Ambitious Generation: America's Teenagers, Motivated but Directionless*, Yale University Press, New Haven.
- Spencer, L. & Pahl, R. (2006) *Rethinking Friendship: Hidden Solidarities Today*, Princeton University Press, Princeton.
- Sturken, M., Thomas, D. & Ball Rokeach, S. (eds) (2004) in *Technological Visions: The Hopes and Fears that Shape New Technologies*, Temple University Press, Philadelphia.
- Van Dijk, J. (2005) *The Deepening Divide: Inequality in the Information Society*, Sage, Thousand Oaks.
- Vondracek, F., Silbereisen, R., Reitzle, M. & Wiesner, M. (1999) 'Vocational preferences of early adolescents their development in social context', *Journal of Adolescent Research*, vol. 14, no. 3, pp. 267–288.
- Witte, J. & Mannon, S. (2010) *The Internet and Social Inequalities*, Routledge, New York.

Laura Robinson is Assistant Professor in the Department of Sociology at Santa Clara University. After earning her Ph.D. from UCLA where she held a Mellon Fellowship in Latin American Studies, she was a Postdoctoral Fellow on a John D. and Catherine T. MacArthur Foundation funded project. She has been a Visiting Scholar at Trinity College Dublin and received a Bourse d'Accueil at the

École Normale Supérieure. Her research has won awards from the American Sociological Association Computer and Information Technology Section, the Association of Internet Researchers, and the National Communication Association International and Intercultural Communication Division. She studies new media in Brazil, France, and the United States. Robinson's current multi-year study examines digital and informational inequalities. Other publications explore online interaction and norm building, national and collective identities, 9/11 and political violence, and cultural discourse in Brazilian, French, and American contexts. Her website is www.laurarobinson.org. *Address:* Department of Sociology, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053, USA. [email: lrobinson@scu.edu]
