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**Behavioral Economics and Workforce Development:
A Review of the Literature from Labor Economics and the Broader Field**

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Abstract

Objective: This review of current literature explores the strengths and limitations of applying tools of behavioral sciences to increase the participation and completion rate of training for lower-wage, frontline incumbent workers in ways that benefit both workers and sponsoring firms. **Background:** While behavioral economics may have deep roots in labor economics, its application in other fields, such as psychology and education, have drawn much of the recent attention it is receiving. **Method:** We reviewed studies in the field of social sciences that present potentially transferable lessons for behavioral economic approaches aiming to increase participation in employer-sponsored training. **Results:** Recent studies in the fields of labor economics, psychology, education and recent efforts of applying behavioral economics present promising practices and models for developing tools to assisting individuals to pursue educational goals. **Conclusion:** Evidence from the field provide valuable lessons and insight into the challenges employers face when creating effective programs to train low-wage, frontline incumbent workers. **Application:** Interventions ranging from choice architecture to individualized goal clarification may contribute to the creation of a bridge for frontline workers to enter into and complete training programs offered by employers.

Introduction

There is mutual benefit for employers and workers when workers improve their skills beyond the minimum requirements for their position—a fact not lost on employers, many of who are willing to provide education and training opportunities to staff, including frontline workers. These opportunities typically include on-the-job-training, tuition reimbursement for postsecondary courses, and paid leave to attend classes. Despite often generous budgets for these activities, relatively few workers take advantage of these opportunities, potentially limiting increases in productivity, wages and longer-term career advancement (Tompson, Benz, Agiesta, & Junius, 2013). This dilemma raises an interesting research question: Can emerging lessons from behavioral science experiments be applied to cutting the Gordian Knot of worker participation in education and training programs?

This review of current literature on the topic is intended to explore the strengths and limitations of applying tools of behavioral sciences to increase the participation and completion rate of training for lower-wage, frontline incumbent workers in ways that benefit both workers and sponsoring firms. This paper presents evidence from the fields of labor economics and education, current models in practice by behavioral scientists, and a discussion of the social context of decision making.

Labor Economics and Behavior

Babcock, Congdon, Katz, and Mullainathan (2010) reviewed key implications of social psychology and behavioral economics to examine how individuals make decisions about work and leisure, searching for jobs, and taking up opportunities for education and

training. They found that removing complexity in training offerings, as well as the need for willpower to remain engaged in training, would likely benefit workers and employers seeking to increase enrollment and completion of training programs. Earlier research in the field of social psychology has described willpower as a limited cognitive resource that can be depleted by exercising self-control (see Baumeister et al., 2008, for a review of the literature), yet recent research on the effect of willpower depletion on research participants' susceptibility to framing effects (e.g. context) has suggested that depletion may have more limited and less consistent effects on willpower than implied by earlier research (de Haan and van Veldhuizen, 2015).

Duhigg (2012) suggests that willpower can also be strengthened to change a behavior. He presents a framework for understanding how habits are formed and a guide to experimenting with how habits might change. He presents a simple three part neurological loop as the core of every habit: a cue, a routine and a reward. He suggests that organizations and individuals can make significant changes through the study of their habits to identify the cue, the spark that leads individuals to act on the routine habit and what is the payoff, or reward, for the individual in maintaining the habitual behavior. Further, Duhigg suggests that the identification of a behavioral inflection point, a typical stressor in a specific behavioral pattern, can inform an individual to create an alternative pattern of behavioral responses to overcome the challenge and reach their goal. Through understanding the habit loop, interventions can be designed to interrupt the loop and potentially develop a desired behavior.

Miller, van Dok, Tessler, and Pennington (2012) studied the Work Advancement and Support Center (WASC), a randomized control trial demonstration designed to increase the incomes of low-wage incumbent workers. The project expanded the mission of One-Stop Career Centers to offer incumbent workers career coaching, skills training and easy access to support services. Miller et al. found that the program simplified worker access to funds for training and substantially increased workers' participation in education and training activities and their receipt of certificates and licenses.

A number of studies have evaluated the effects of financial incentives in workforce development and educational achievement. Bloom et al. (2001) present findings from a randomized experiment conducted in four Canadian provinces to measure the effects of a financial incentive designed to promote rapid re-employment among workers who were displaced from their jobs by changing economic conditions. Over a two year period, cash incentives up to \$250 weekly were designed to supplement earnings for workers who accepted employment with wages lower than their previous position. Persons who received the supplement payments (2 out of 10 displaced workers) benefited from them; on average receiving payments for 64 weeks, totaling \$8,705. Yet, when compared to the control group, the supplement offer had little effect on job-search behavior, employment prospects, or receipt of unemployment insurance.

Madrian (2014) describes research on the effects of a variety of interventions that support the premise that an understanding of psychology can promote the development of policy tools that serve to motivate behavior change. Madrian's (2014) review concludes that financial incentives appear to work best to motivate behavior change when the structure for obtaining the incentive is simple, timely, tied to controllable outcomes and the outcome matters to the participants.

Education

Choice architecture, the simplifying of a process, forms, and arranging information in a manner that makes it accessible to participants has been shown to increase participation in the enrollment of social services, education and training. Using a random assignment research design, Bettinger, Long, Oreopoulos and Sanbonmatsu (2012) demonstrated that assisting low- to moderate-income families to complete the FAFSA (Free Application for Financial Student Aid), providing an estimate of aid eligibility, and providing information about local postsecondary options, substantially increased the likelihood that students will submit the aid application, enroll in college the following fall, and receive more financial aid. The results suggest that simplification and providing information could be effective ways to improve college access.

Similarly, Castleman and Page (2014) report that "...several low-cost interventions demonstrate that simplifying information about college and financial aid and helping students' access professional assistance can generate substantial improvements in students' postsecondary outcomes"(p.144). They build on the growing behavioral economics literature by examining the effect of two applications of behavioral principles to mitigate summer "melt," the phenomenon that college-intending high school graduates fail to matriculate in college anywhere in the year following high school. One group of students received automated and personalized text messages to remind the prospective student of required pre-matriculation tasks and to offer counselor-based support. Another group of students received peer mentors to provide summer outreach and support. Both interventions substantially increased college enrollment among students traditionally underrepresented in higher education.

Fryer (2011) conducted a series of school-based randomized trials to test the impact of financial incentives on student achievement. Partnering with 203 urban schools in low-performing school districts (Dallas, New York and Chicago), incentives were distributed to approximately 27,000 students. Results show that incentives can produce small to modest effects on student achievement when incorporated into a program designed to raise achievement among even the poorest minority students in the lowest performing schools. The qualitative data, interviews and observations, provide insight into student experiences as they participated in the project. For example, fourth and seventh grade students in the New York City experiment received incentives for performance on ten exams. The qualitative data reveals that students were excited about the incentives yet lacked the knowledge and skills needed to translate their enthusiasm into tangible steps to achieve their goal. The qualitative data revealed that not a single student identified these steps in their process to achieve their goal: reading the textbook, studying harder, completing homework, or asking the teacher or other adults for help. Rather, students focused on test taking skills such as, reading the test more carefully and double checking their work. Fryer concludes that students participating in the study lacked knowledge of the process that could potentially increase their test scores.

Paunesku (2013) used the work of the Stanford University Project for Education Research That Scales (PERTS)¹ as a case study for scaling up social psychological research regarding the motivation of at-risk students enrolled in community college math courses. The study involved 770 students enrolled in 22 different math courses and examined the effects of a growth mindset intervention and a sense-of-purpose intervention on math achievement. The growth mindset intervention students read an article describing the brain's ability to restructure itself as a consequence of effortful practice, reinforced with written exercises. The sense-of-purpose intervention asked students how they wish the world could be a better place, how they can contribute to this imagined world and related working hard in school to empowerment and making a positive impact on the world. The intervention raised the grades of initially lower-performing students and significantly reduced the rate of failure for at-risk students.

Models

As research presents innovative ideas and approaches for increasing the participation of individuals in education and workforce development programs, the process for scaling-up or the implementation of a successful strategy in a different community, requires local evaluation plans. Haskins and Margolis', *Show me the Evidence* (2015), notes that even if a program design is good and shown to work in previous studies when you implement it in a new place it might not work. A process of continuous evaluation to inform program improvements is needed. The objective being that evaluations permit program developers to make the necessary changes to support the unique experiences of local communities of workers and employers. The following two models present a process of evaluation that includes an information loop that demonstrates Haskins thesis.

Perhaps the prime example of how policy makers are taking advantage of the potential for behavioral economics to shape policy and services is the UK's Behavioral Insights Team. This group has demonstrated gains in the uptake of a variety of services through the development of the "EAST framework," which states simply: if you want to encourage a behavior, make it Easy, Attractive, Social and Timely (EAST). This framework combined with defining the outcome, understanding the context, building the intervention, and then testing, learning and adapting, has been used by the UK to successfully improve a number of programs and services across the country. One recent project conducted in the UK employed the EAST model to improve adult student retention. In the UK, many colleges offer fully government subsidized adult education programs to improve basic numeracy and literacy skills. Reviewing a dataset of 1179 student attendance records, they found that approximately 25 percent of learners stop attending these programs in the first ten weeks and that average attendance rates deteriorate by 20 percent during that time frame. Applying the EAST model researchers implemented a large-scale field experiment in which they sent encouraging text messages to students reducing the proportion of students that stop attending by 36 percent, and leading to a 7 percent increase in average attendance relative to the control group (Chande et al., 2015).

¹ PERTS partners with schools, colleges and other organizations to conduct research to improve programs and expand the knowledge of student academic motivation and achievement, (<https://www.perts.net>).

Similar to the development of the EAST model, the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, sponsored by the U.S. Office of Planning, Research and Evaluation, is using a behavioral economics lens to examine programs that serve low-income families. The BIAS team uses a four phase method called “behavioral diagnosis and design” to identify potential behavioral obstacles — or “bottlenecks.” In the first phase, the testable problem is defined, in the diagnosis phase, both qualitative and quantitative data is collected to identify what is causing the problem. The design phase suggests theories about why bottlenecks are occurring and behavioral insights are employed to develop the intervention. Lastly the team evaluates the behavioral intervention creating a loop for continuing the process of improving program effectiveness. One example of the use of this model developed a meeting reminder postcard and text message follow-up that increased the participation in a social service program meeting by 12 percentage points beyond the attendance of those receiving a standard or light-touch reminder. The BIAS team used behavioral interventions to direct the reader’s attention to certain key pieces of information, including a prompt to schedule a date and time to attend the meeting (Dechausay, N., Anzelone, C., & Reardon, L., 2015).

In the United States in 2014, the Executive Office of the President established the Social and Behavioral Sciences Team (SBST) to identify how behavioral insights can be integrated into systems to improve access to programs and government efficiency. One of the initial projects, cited in the 2015 SBST Annual Report, sent email notices informing Veterans of their benefits and the steps needed to apply. A simple change in language identifying the benefits as “earned” (substituted for the word “eligible”) led nearly 9 percent more Veterans to access the application for those benefits.

Simplifying job training services, minimizing barriers to take-up and providing effective supports are only a part of the larger social context in which frontline workers make choices regarding their participation in job training opportunities. Creating a workplace community where frontline workers experience opportunity may vary for each community of incumbent low-wage workers. However, frameworks such as EAST and the similar BIAS’ “behavioral diagnosis and design,” methods hold promise for continued innovation within the United States to create programs that foster environments where workers have the necessary supports to motivate and assist their participation in employer sponsored training programs.

Social Context

This review of the literature in the field of behavioral economics has revealed that the language and perspective of the field is undergoing a paradigm shift from the perspective of identifying and correcting the deficit of the workforce (e.g., “. . . individuals often fail to choose optimally and have difficulty exerting self-control. . .”), to identifying and building upon the social, cultural and psychological context of worker’s lives to construct a frame of reference for behavioral insights² that can guide policy and practice. A recent report by the World Development Bank Group, *Mind, Society and Behavior* (2015), finds that decision-making is influenced by contextual cues, local social networks and social norms, and shared mental models.

² Behavior insights, a term coined in 2010 to help bring together ideas from a range of inter-related academic disciplines (behavioral economics, psychology, and social anthropology).

Indeed, theories of learning have evolved away from notions that reduce learning to individual mental capacity, shifting the analytic focus from the individual, to learning as participation in the social world (Lave and Wenger, 1991). Markus and Nurius (1986) purport that individual motivation is influenced by what an individual believes possible for the self or possible self. The possible self is made salient by an individual's particular sociocultural and historical context, from the models, images and symbols provided by the society and culture and an individual's social experiences.

For example, goal setting exercises have been reported to successfully improve GPA among undergraduate students who self-identified as struggling academically (Morisano, Hirsh, Peterson, Pihl, and Shore, 2010). As a student experiences successful goal attainment, self-efficacy increases; enhancing the student's commitment to their goal and motivating students to work toward subsequent achievement (Boekaerts, Pintrich, & Zeider, 2000). Even though these studies report on the effects of interventions on college students, these lessons can inform the broader range of considerations when designing a workforce training program.

Discussion

Can emerging lessons from behavioral science experiments be applied to cutting the Gordian Knot of worker participation in education and training programs? The literature review presented in this paper discusses a number of behavioral science interventions and the role of relationships in the process of recruiting and training students as well as models used by behavior economists to increase participation of individuals in government sponsored programs. Employers wishing to create a culture of inclusion that invites and welcomes frontline, low wage incumbent workers to take advantage of training opportunities, potentially increasing productivity, wages and longer-term career advancement, are challenged to look through the lens of behavior science to create systems infused with an understanding of the desires, hopes and challenges workers face as workers pursue understanding, explore considering, and commit to a training program.

The literature suggests that a thoughtful review of the company and classroom/training site culture and the social context of the relationships involved in recruiting and training is the starting point for the development and evaluation of a training program. Through the behavioral science lens companies and educators can evaluate what messages and behaviors are inviting, welcoming, inclusive, and supportive of lower-wage, frontline incumbent workers. A sample of questions to explore using the EAST framework includes:

Easy

- Is the language used in posters, notices, and in discussions between supervisors and frontline workers inviting and inclusive?
- Are recruitment messages constructed in a manner that is accessible for all workers? Is the information presented clearly, are the key points emphasized, is the language accessible to individuals with varying degrees of reading proficiency?
- Does the recruitment process clearly identify for workers the commitment they are making when entering into training and what the employer and/or trainer are

- committing too as well: provide the vision of opportunities for promotion, pay increases, contacts for encouragements and offers of additional support?
- How are the specific barriers, both internal and external, that may impact workers abilities to enter into and complete training identified? Once identified, how can this information be incorporated into recruitment and retention systems?

Attractive

- What is the motivation of workers: do they desire to help their families with increased wages and/or advance to a more challenging position of responsibility and involvement with their employer? How can this motivation factor be incorporated into the retention process for workers? How do supervisors and trainers encourage and support workers to maintain a connection to and achieve the workers stated goal?
- Does the recruitment message provide the necessary detailed information to increase the comfort level of workers? Are the steps to be taken clearly outlined? Is an offer of assistance with the process available in a manner that is meaningful within the context of the workers relationship with supervisors or other company staff?

Social

- Do training offerings utilize the social networks of workers to encourage participation and completion?

Timely

- Are training opportunities available as needed? Are incentives distributed within a timeframe that encourages retention and completion? Are reminders and messages of encouragement provided in a timely manner?

Suggestions for Future Research

Limited research has been conducted applying the tools of behavioral sciences to the training of lower-wage, frontline incumbent workers. As this field of study continues to grow, research of both the recruitment and training systems may produce meaningful results that will build knowledge for the process of continuous improvement in the determination of what works best to recruit and retain workers from a specific community. The following is a limited list of possible future research topics:

- When lower-wage, frontline incumbent workers are included in the creation and continuous improvement of the system that functions to recruit workers into training and support workers to complete training, does it improve uptake into training and training completion?
- How do various forms of messaging regarding the availability of training impact uptake of workers into training programs?
- Does systematic relationship-based support through one-on-one conversations, text messages and other appropriate modes of encouragement and recognition from supervisors and instructors, improve uptake into training and training completion?
- Do clearly identified training outcomes for workers that are both meaningful and timely, improve uptake into training and training completion?

- Does the use of worker identified goals in retention and support practices improve the completion of training programs?

Conclusions

Evidence from the fields of labor economics, psychology, education and recent efforts of applying behavioral economics to promote efficiencies in government sponsored programs, can provide valuable lessons and insight into the challenges educators and employers face when creating effective programs to train low-wage, frontline incumbent workers. Interventions ranging from choice architecture to individualized goal clarification may contribute to the creation of a bridge for frontline workers to enter into and complete training programs. Further, the literature encourages employers, educators, and researchers to be mindful of the cultural and social context of workers lives in developing and evaluating training programs.

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