Program for the International Assessment of Adult Competencies
U.S. PIAAC

Commissioned Paper
February 2015

Adults' Readiness to Learn as a Predictor of Literacy Skills

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Suggested Citation: Smith M. C., Rose A. D., Ross-Gordon J., and Smith T. J. (2015). *Adults' Readiness to Learn as a Predictor of Literacy Skills.* Retrieved [insert date], from [insert website].

This project has been funded by the American Institutes for Research through a contract with the National Center for Education Statistics (NCES) of the U.S. Department of Education. This report is based on PIAAC data released in October 2013. The views expressed in this paper do not necessarily reflect the views or policies of the American Institutes for Research, National Center for Education Statistics, or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government.

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Note: This paper has been commissioned by American Institutes for Research, funded through a contract with the National Center for Education Statistics (NCES).

1 – The authors gratefully acknowledge the assistance of Lisa Paylo Meyer in preparing this report.

ABSTRACT

This study investigated adults' readiness to learn drawing upon data from the 2013 Program for the International Assessment of Adult Competencies (PIAAC). Specifically, data from the PIAAC's Survey of Adult Skills were used to address research questions regarding the extent to which adults' readiness to learn (RtL) predicts their literacy and numeracy skills, skills for problem-solving in technology-rich environments, and their uses of these skills at home and at work. Further, the study examined both the mediating and moderating effects of RtL on the relationships between a variety of demographic variables -- age, gender, educational attainment, and work experience -- and literacy skills outcomes and skill uses. Our investigation focused on RtL among U.S. adults (N = 5,010 adults) ages 16 to 65 who participated in the PIAAC study. Regression analyses were carried out using RtL as a predictor of both adult skill levels and uses of these skills. We found that RtL was not a strong predictor of adult skill levels, but was a statistically significant predictor of adults' use of skills -- particularly skill use in home settings. Additionally, RtL partially mediated the effects of age, education, and work experience on skill levels, and also partially mediated the effect of education on the use of these skills. Furthermore, RtL showed significant moderating effects. Specifically, RtL moderated the effects of age and education on the outcomes of literacy and numeracy, and moderated the effects of education on several measures of skill use. Increased levels of RtL decreased the positive effect of these demographic predictors. Finally, RtL significantly moderated the effect of gender on adults' use of numeracy skills at work, with increased levels of RtL lessening the gender gap. Thus, readiness to learn appears to be more strongly associated with adults' skill *uses* than with the skills themselves -- and particularly for those skills used at home. Conditions within the contemporary workplace may constrain the relationship of readiness to learn to workplace skill use, such as the lack of opportunities to fully apply the range of one's skills. Our findings have implications for thinking about the workplace readiness of U.S. adults. Perhaps workers' skills are not being fully utilized by employers. We offer several recommendations for investigations that further examine readiness to learn.

Introduction

Do adults typically enter into learning situations prepared to learn? That is, do adults possess sufficient motivation for the learning task, have the cognitive skills and learning strategies necessary to aid their learning and understanding, feel curious and interested in learning, and believe that they can solve problems that they encounter when attempting to learn something? Such characteristics would seem to be important in most situations in which adults are trying to learn skills or acquire knowledge to fulfill a variety of purposes and needs in life -- for work, family, and social interactions with others and so on. The significance of adults' readiness to learn is at the heart of our investigation. The purpose of our study, therefore, was to analyze the data from the U.S. sample of the Program for the International Assessment of Adult Competencies (PIAAC), with the aim of examining the importance of readiness to learn in adults' literacy skills as well as their uses of these and other important skills in different contexts.

The PIAAC, in its Survey of Adult Skills, proposes a new construct — adults' "readiness to learn," which is operationally defined as adults' *propensity to learn new things, relate these knowledge and skills to existing knowledge and life situations, and engage in problem-solving and information seeking behaviors*. Although the construct is novel and does not appear to be derived from any specified learning or motivation theoretical framework, it may be related to other theories and constructs relevant to learning, which we explore in the subsequent literature review.

Our study analyzed whether Readiness to Learn (RtL), a composite variable found in the Background Questionnaire of the PIAAC, predicted (a) the three PIAAC-developed skill outcome measures (i.e., Literacy, Numeracy, and Problem-Solving in Technology-rich Environments [PS-TRE]), and (b) PIAAC-derived indices of skill use at home and at work (e.g., use of reading skills at home, use of numeracy skills at work). Additionally, this exploratory investigation assessed both the mediating and moderating effects of RtL on the relationship between selected demographic variables (age, education, gender, and work experience) and the skill outcome measures, and the indices of skill use. The demographic variables were selected because differences in skills and uses have been documented across adult age groups, levels of educational attainment, types of jobs, and between men and women (Kirsch & Guthrie, 1984; Kirsch, Jungeblut, Jenkins, & Kolstad, 1993; Organization for Economic Co-operation and Development [OECD], 2013b; Smith, 1996; White, Chen, & Forsyth, 2010). Additionally, other related PIAAC studies (e.g., Hanushek, Schwerdt, Wiederhold, & Woessman, 2013) have incorporated these demographic variables as control and/or moderating variables.

Review of Literature

Our literature review begins with a brief discussion of adult literacy skill acquisition. We then describe Readiness to Learn as utilized in the PIAAC. Next, we examine the research on literacy and use of literacy skills.

Skill Acquisition and Use for Adult Literacy, Numeracy, and Problem-Solving in Technology-Rich Environments

Much of the research within the United States has focused on either understanding what illiteracy looks like (Kaestle, Damon-Moore, Stedman, & Tinsley, 1993) or on developing effective methods for teaching reading, writing, basic mathematics, and now basic computer use (Kruidenier, 2002; National Reading Panel, 2000). There has been much debate about levels of adult literacy -- both in the United States and worldwide. In general, low literacy levels (in whatever manner these skills may be defined and measured) are generally positively correlated with low income, low educational attainment, and/or poverty (Kirsch, Jungeblut, Jenkins & Kolstad, 1993; Kutner et al., 2007).

The PIAAC Survey of Adult Skills is one in a series of large scale surveys that have attempted to outline the state of adult literacy and the ramifications this may have for adults' competitiveness in the labor market and participation in the workplace. As Soares and Perna (2014) point out

> OECD's Survey of Adult Skills, published in November of 2013, enhances understanding of workplace readiness by offering assessment of proficiency (from low to high) on measures of literacy, numeracy, and problem solving with information-technology (IT) tools – critical cognitive and workplace skills – for individuals in 24 participating countries and sub-national regions (p. 1).

Results from this survey corroborate other studies that have found that the United States is falling behind in terms of the skills needed for the workplace (U.S. Congress Joint Economic Committee, 2012). But it goes beyond this, to ask what skills are used in the workplace and at home and to investigate levels of these skills employed in these settings. Recent studies of the PIAAC have looked at these skills in terms of human capital dimensions such as relationships to earnings (Hanushek et al., 2013), educational level (Soares & Perna, 2014), and the mismatch between skill acquisition and use (Allen, Levels, & van der Velden, 2013), but they have not examined how non-cognitive factors might relate to these skills. A possibility for exploring the role of these factors is available, however, in that the PIAAC Background Questionnaire assesses a non-cognitive construct, which PIAAC calls Readiness to Learn (RtL).

Readiness to Learn

The Background Questionnaire of the Survey of Adult Skills, a component of the 2013 PIAAC assessment, contains a measure of readiness to learn (RtL) that is intended to measure adults' readiness to engage in learning activities in diverse settings (e.g., at home, at work). The RtL construct is operationally defined by the PIAAC using six indicators (see Table 1). Succinctly, these indicators address issues of cognitive scaffolding (i.e., how new material is integrated into existing knowledge), curiosity or enjoyment of learning new things, approaches to overcoming difficulty in one's learning, and problem solving or looking for connections among ideas. While these

items do not appear to be direct indicators of motivation and/or participation in education, they are skills and behaviors that are relevant to learning and are, therefore, implicated in motivation for learning, for example.

The designers of the Background Questionnaire note that the rationale for the inclusion of the readiness to learn items is "[t]here is good empirical evidence that learning strategies affect the acquisition of skills and educational attainment. This measure is important as a control variable to get good estimates of the effects of education and training on skills" (OECD, 2011). It is important to point out that Readiness to Learn does not appear to be synonymous with knowledge of learning strategies including what, when, and how to use such strategic skills to improve one's learning (i.e., metacognition).

The conceptual framework that guided the development of the RtL scale is not altogether clear; however, it appears to be a composite variable derived from a variety of areas of the adult education and educational psychology literatures. These areas include cognitive processing, metacognition and learning strategies, students' study behaviors, self-regulation, and critical thinking -- several of which have been listed as "21st Century Skills" by Allen and van der Velden (2014), the chief architects of the PIAAC Background Questionnaire. In a report titled *Skills for the 21st century: Implications for education*, Allen and van der Velden (2012) make the point that while basic skills, specific skills, and what have been referred to as 21st century skills (Trilling & Fadel, 2009) are all essential to learning: "[t]here is a large gap in our knowledge in terms of most 21st century skills themselves, such as creativity, critical thinking, learning skills, socio-communicative skills and self-management skills" (Allen & van der Velden, 2012, p. 5). The document that details the conceptual framework of the Background Questionnaire (OECD, 2011) indicates that, while the questionnaire contains no direct indicators of innate learning abilities, "learning strategies may affect individuals' ability to learn" (p. 5), and also that "[a]lthough it is not practicable to describe the educational environments respondents have been exposed to, it does make sense to include indicators of respondents' learning strategies, which may in part be a result of such exposure" (p. 5). Referenced in the same discussion of learning strategies are concepts such as self-regulation, metacognitive abilities (that "structure the learning process and affect the efficiency with which new information is being processed" (OECD, 2009, p. 52), and information processing strategies.

Contemporary psychological perspectives view learning as an active process of knowledge construction that requires perception, thinking, problem solving, memory, and behavior (i.e., attention, effort, motivation) on the part of the learner (Ormrod, 2011). While all of these processes are essential to learning, individuals' readiness to engage in learning has been relatively under-studied and little theory exists to guide the study of it. However, the concept of learning readiness has a lengthy history in psychology – going back as early as the work of Edward L. Thorndike, a founder of educational psychology at the turn of the 20th century, who described the "law of readiness" as a fundamental law of learning (1922).

Today, learning readiness -- to the extent that it is considered as a variable relevant to adult learning -- is seen as consisting of a mix of attitudinal or emotional (e.g., enthusiasm), cognitive (e.g., prior knowledge, metacognitive skills), behavioral (e.g., time management) and, to lesser extent, personality or dispositional components (e.g. determination or drive). Adult educator Malcolm Knowles (1984) asserted that adults' readiness to learn is oriented to the developmental tasks that arise through the social roles (e.g., parent, partner, employee, community member) that adults inhabit. Readiness to learn implies that the learner has sufficient interest in the learning stimuli to be engaged and attentive, is eager or motivated to learn, and can concentrate on and complete the learning task. Further, the learner is assumed to recognize the utility value of the learning task (i.e., perceived value of a task in helping the learner to achieve a long- or short-term goal) (Eccles & Wigfield, 2002).

Recent research on learning and skill acquisition highlights the importance of the context in which learning takes place. For example, Säljö (2009) emphasized that learning cannot be divorced from context and this context includes the learner's motivation. In the 1970s, Säljö (1979) pointed out the need for learners to: (a) be aware of the influence that the context has in one's learning; (b) adapt one's learning to a particular context (and its set of demands); and, (c) view school learning as somewhat distinct from and possibly unrelated to the outside world. Säljö called this awareness "the discovery of the problematic nature of learning in educational contexts" (p. 449). Two RtL items on the PIACC Background Questionnaire are rooted in a contextual perspective on learning. These items ask respondents to what degree they try to relate new information to real-life situations and to their prior knowledge. In addition, skill use in the PIAAC data is categorized broadly into skills used in the workplace and skills used at home, highlighting the salience of these two learning environments.

It seems possible that RtL may play some role in adults' skill competencies, although the nature of its role is not yet well understood. This inquiry is in line with recent investigations into "educational production functions" (see Hanushek, 2002; Hanushek et al., 2013), which examine how factors other than schooling might be related to such skills. This research suggests that skills may be influenced by a range of extra-educational factors, such as family inputs, individual ability levels, and other factors such as health, work experience, and non-cognitive variables. Heckman and Rubinstein (2001) argue that non-cognitive constructs such as self-regulation, time management, and motivation are critically important for outcomes in later life, including workplace success.

When considering auxiliary predictor variables, we drew from the Hanushek et al. (2013) analyses of the PIAAC data, which examined how skill levels predict adult earnings. Their analyses incorporated education, work experience, and gender as control variables. Because we expected skill levels to vary across age, we also included age as a predictor. Additionally, following up on Hanushek's (2002) suggestion that non-cognitive and extra-educational factors may be determinants of skills, and more directly on Hanushek et al.'s (2013) analyses of the PIAAC data, we explored the mediating and moderating effects of readiness to learn on the relationship between education and skill

levels, as well as its mediating and moderating effects on the relationship between other demographic variables (i.e., gender, age, and work experience) and skills. That is, it is important to assess how extra-educational factors, such as readiness to learn, can explain what, up to the present, have been assumed to be the effects of education on skill levels and skill use (i.e., assess the mediating effects of RtL), as well as to explore how the effects of education on skill levels and skill use might differ for individuals of varied educational levels. It is presumed that, if individuals indicate high levels for these items, they are better prepared -- and are motivated -- to carry out learning activities.

Given the exploratory nature of our investigation into the relationship of adults' readiness to learn in their skills and skill uses within different social contexts, we posed the six research questions that follow.

Research Questions

1. How does U.S. adults' readiness to learn predict their skill levels in literacy, numeracy, and problem solving in technology-rich environments (PS-TRE)?
2. Does readiness to learn mediate the effects of gender, age, work experience, and education on literacy, numeracy, and PS-TRE skill levels?
3. Does readiness to learn moderate the effects of gender, age, work experience, and education on literacy, numeracy, and PS-TRE skill levels?
4. How does readiness to learn predict the extent to which specified literacy skills (reading writing, numeracy, and information and computer technology [ICT] skills) are used by U.S. adults at work and at home?
5. Does readiness to learn mediate (explain) the effects of gender, age, work experience, and education on the use of specified literacy skills (reading writing, numeracy, ICT skills)?
6. Does readiness to learn moderate (change) the effects of gender, age, work experience, and education on the use of specified literacy skills (reading writing, numeracy, ICT skills)?

Method

Participants and Measures

Data for this study came from the PIAAC Survey of Adult Skills (OECD, 2013a). The Survey of Adults Skills was administered to adults from age 16 to 65 years in 24 countries as a part of the Program for the International Assessment of Adult Competencies (PIAAC) (OECD 2013b). The Survey of Adult Skills assesses key skills and related variables that are used in the workplace, at home, and in the community. The full Survey of Adult Skills consists of three elements: (a) a Direct Assessment that assesses skill competencies in three domains—literacy, numeracy, and problem solving in technology-rich environments (e.g. locating information on the Internet); (b) a Module on Skills Use that assesses skill use both in the workplace and at home or in the community; and, (c) a Background Questionnaire that solicits information on a variety

of personal background variables that could potentially influence skill development, maintenance, or use (e.g., education; work experience).

For the present study, responses from the U.S. sample only were examined because particular effects of interest may occur uniquely within the U.S. population and may, in fact, be disguised by aggregating the sample across countries (Hanushek et al., 2013). The data consisted of responses from N = 5,010 U.S. respondents between the ages of 16 and 65 years. The dependent variables of interest included (a) the three PIAAC-developed skill outcome measures (Literacy, Numeracy, and Problem-Solving in Technology-rich Environments [PS-TRE]) and (b) the PIAAC-derived indices of information processing skill use at home and at work (e.g., use of reading skills at home, use of numeracy skills at work). The primary predictor variable of interest was the composite Readiness to Learn (RtL) score, a derived variable created by the PIAAC survey developers and based on six indicators (see Table 1). Additional variables from the Background Questionnaire also were used as predictors, including age (coded in 5-year intervals), number of years of formal education, gender, and number of years of full-time work experience.

Evidence for the reliability and validity of the scores used in this study is essential to establish confidence in the inferences that are made using these scores (see Messick, 1995). The OECD technical report (2013a) reiterates this, stating that constructs "must have good measurement properties in terms of reliability and validity and be able to maintain that over time" (p. 22). For the U.S. sample, reliabilities for scores from the skills proficiencies scales were .90, .91, and .87 for Literacy, Numeracy, and PS-TRE, respectively (OECD); while mean reliabilities for the skill use indices ranged from .69 to .81 across countries (see Table 2; Yamamoto, Khorramdel, & von Davier, 2013). Although the developers of the RtL scale (OECD, 2013a) provide evidence for reliability of scores across the countries in which the RtL scale was administered, with reported alpha = .85, little or no other psychometric information is available concerning this scale. Smith, Smith, Rose, and Ross-Gordon (2014) provide additional evidence for the reliability of the latent construct of RtL among U.S. adults, with a reported Omega reliability coefficient of .86. Omega is a more appropriate index of reliability because Readiness to Learn scores are provided in the PIAAC data as latent ability estimates. Smith et al. also provide evidence that readiness to learn constitutes a single, one-dimensional construct. Additionally, the measurement characteristics of the scores also do not appear to vary by gender, age, educational level, or employment status. This indicates that, psychometrically, the instrument performs similarly when used with different groups and thus can reliably be used with these different groups.

Procedure

Research questions 1-3 asked how RtL predicts adult skill levels, and whether RtL mediates and/or moderates the effect of other potential predictors (i.e., age, education, gender, and work experience) on these skill outcomes. Predictor variables in these models included RtL, respondent's age, number of years of formal education, gender, and the number of years of full-time work experience. To address these research

questions, multiple linear regression analyses were carried out, variance accounted for by the combined set of predictors computed, and statistical significance of each predictor assessed. In addition, the relative importance of each predictor was assessed by computing, for each, the value of Pratt's index (Pratt, 1987). Pratt's index is an indicator of the relative importance of predictors, where larger values of Pratt's index indicate that a particular predictor has more predictive importance than other predictors having smaller index values.

This study also examined the mediating effects of RtL. Mediating effects occur when the effect of a particular variable of interest on an outcome variable (e.g., the effect of education on literacy skill) is mediated through a third variable (e.g., RtL) and, thus, the initial predictor variable of interest *indirectly* affects the outcome through the mediator. Mediating effects can be "partial," in which case the original variable of interest (e.g., education) maintains some degree of direct (i.e., non-mediated) effect on the outcome at the same time that it exerts an indirect effect through the mediator (RtL). Alternatively, mediating effects can be "full," in which case the variable of interest only affects the outcome indirectly through the mediator, and no direct effect on the outcome variable is evident. To assess potential mediating effects of RtL, Sobel's (1982) test was carried out. Sobel's test is used to assess the statistical significance of a potential mediating effect. That is, it assesses whether the reduction in the effect of the variable of interest is statistically significant when the potential mediating variable is included in the model.

In addition to mediating effects, this study also examined potential moderating effects of RtL on the relationship between selected demographic variables and the outcomes of interest. Moderating effects are evident when the relationship between a particular variable of interest (e.g., education) and an outcome (e.g., literacy skill) changes with different levels of the potential moderator (RtL). For example, if RtL moderates the effect of education on literacy skill levels, then the effect of education on literacy skill would not be constant for persons at all levels of RtL — it would be different for different levels of RtL.

For all statistical analyses in the present study, the supplied sampling weights were used, and standard errors were estimated using jackknife replications to account for the complex sampling design. For analyses involving skill levels, analyses were repeated using each of the provided plausible values, and parameter estimates averaged across analyses. Regression analyses were carried out using SPSS v.21 in conjunction with the IDB Analyzer.

Findings

Tables 3 and 4 provide frequency information for the demographic characteristics of the sample. As can be seen, males and females each comprised approximately half of the sample, while age was distributed fairly uniformly across the indicated age intervals. The mean number of years of education was 13.27 years, and the mean number of years of full-time work experience was 19.40 years.

The results pertaining to Research Question 1, where literacy, numeracy, and PS-TRE scores were regressed onto the five predictors (RtL, age, education, gender, and work experience), showed that the combined set of predictors accounted for 34%, 38%, and 23% of the variability in literacy, numeracy, and PS-TRE, respectively (see Table 5). When the predictors were considered individually, each predictor significantly predicted literacy, numeracy, and PS-TRE scores (each $p < .05$) except for gender, which did not significantly predict literacy scores ($p = .56$). Specifically, increased RtL, increased years of education, and increased work experience were associated with higher levels of each of the skills outcomes (literacy, numeracy, and PS-TRE), while increased age was associated with lower scores on each of the three skills outcomes. Men scored significantly higher than women in numeracy and PS-TRE skills. The relative importance of the predictors was evaluated by computing the Pratt (1987) index for each. These indices (see Table 5) indicated that RtL was a relatively weak predictor of each of the skills outcomes, while education was the strongest predictor. Although age was a relatively weak predictor of literacy and numeracy skills, it was the second-strongest predictor of PS-TRE skill, and this effect was in a negative direction. Specifically, older adults showed lower levels of PS-TRE skill than younger adults.

Next, the potential mediating effect of RtL on the relationship between each of the aforementioned predictors (age, education, gender, and work experience) and the skill outcomes was considered. Readiness to Learn would mediate these relationships if it either fully or partially explains them. Results from Sobel's test (Table 6) indicated that RtL partially mediated (a) the effect of education on each of the three skill outcomes (literacy, numeracy, and PS-TRE); (b) the effect of age on each skill outcome; and (c) the effect of work experience on each skill outcome. This suggests that adults' readiness to learn can partially—but not fully—explain what might initially have been seen as the direct effects of education, age, and work experience on these skills. The potential mediating effect of RtL on the relationship between gender and literacy skill was not applicable, because gender did not significantly predict literacy when RtL was omitted from the model; $t(1869) = 0.55$, $p = .291$.

We then examined the moderating effect of RtL on the relationship between selected demographic variables (gender, education, age, and work experience) and each of the three skills outcomes (literacy, numeracy, and PS-TRE). Results pertaining to this research question (RQ3) showed that RtL significantly ($p < .05$) moderated the effects of both age and education on both (a) literacy and (b) numeracy (see Table 7). Specifically, as RtL increased, the effects of age and educational level on each of the two skills outcomes decreased. Equivalently, at low educational levels (or younger ages), the effect of RtL on skill levels was more pronounced than at high educational levels (or older ages). Figure 1 depicts this interaction effect for one of the skill outcomes (literacy).

When results pertaining to research question 4 were examined (Table 8), RtL showed significant ($p < .001$) effects on each of the observed skill use outcomes. Moreover, examination of Pratt indices indicated that RtL had moderate-to-strong predictive power compared to the other predictors. In fact, for writing and reading skill

uses at home, readiness to learn was the strongest of the five included predictors. The effect for the latter outcome, in particular, was very strong. Additionally, for five of the outcomes (information and communication technology skill use at home and at work, numeracy skill use at home and work, and reading skill use at work), RtL was second strongest predictor.

Research Question 5 asked whether RtL mediated the effects of selected demographic characteristics of respondents (gender, education, age, and work experience) on skill use outcomes. Table 9 shows the results of Sobel's test of these mediating effects. For each of the eight skill use outcomes, RtL partially mediated the effects of age, work experience, and education. Readiness to Learn did not significantly mediate the effect of gender on these skill use outcomes, however. This suggests that the explanatory power of each of these predictors (except gender) can be explained, at least partially, by an individual's readiness to learn.

An examination of interaction effects (Research Question 6) showed that RtL moderated the effect of education on several skill use outcomes (ICT skill use at work, numeracy skill use at home, and reading skill use at home/work; see Table 10). Here, the positive effect of education on adults' skill uses was lessened by increased levels of RtL. That is, although individuals with higher educational levels showed greater skill use in home and work environments than those with lower educational level, this advantage among those with higher education was smaller among adults with high RtL levels. RtL also moderated the effect of gender on adults' numeracy skill use at work. Although males showed greater numeracy skill use at work than females, this advantage of males was smaller among adults with higher RtL levels. That is, as RtL increased, the gender gap in favor of males in the use of these skills became smaller.

Discussion and Conclusions

Our investigation was designed to examine the association of U.S. adults' readiness to learn (RtL) with both (a) their literacy, numeracy, and problem solving in technology-rich environments (PS-TRE) skills and (b) their literacy, numeracy, and PS-TRE skill uses in different contexts (i.e., at home and at work). We further examined both the mediating and moderating (interaction) effects of RtL on the relationship between several demographic variables (age, educational attainment, gender, and work experience) and these skill levels and skill uses.

Analyses of data on more than 5,000 U.S. participants in the 2013 PIAAC Survey of Adult Skills determined that readiness to learn significantly predicts literacy, numeracy, and PS-TRE skill levels -- albeit rather weakly, as compared to educational attainment or age. Although readiness to learn mediates some of the effects of education on skill level, this mediation is partial -- that is, education still exerts considerable direct effect on skills. Therefore, while readiness to learn is a part of the overall picture of adults' literacy skills, schooling is much more important (as previous studies have convincingly shown (e.g., Reder, 1998). However, as confirmed by the moderating effect of RtL on the relationship between education and literacy, numeracy, and PS-TRE

skills, increased levels of RtL served to decrease the marked skill level differences between those with low versus high levels of education. This suggests that readiness to learn, as a non-cognitive construct, is particularly important for those at lower educational levels. If increased readiness to learn can buffer the deleterious effects of lower educational levels on skill level, then perhaps mechanisms that serve to increase readiness to learn might enhance the potential for career advancement of these individuals.

Our finding that readiness to learn was associated with adult skills supports the recent emphasis given to the effects of non-cognitive/affective attributes on learning (see Duckworth & Seligman, 2006; Farrington et al., 2012; Nagaoka et al., 2013). These efforts suggest that educators and policy makers might do well to recognize and consider these non-cognitive factors; in the same way, employers might benefit from strategies or interventions that increase employees' readiness to learn, thus enhancing skill use and skill levels in the workplace.

In contrast to its effects on skill levels, readiness to learn appears to be more meaningful to the extent to which adults *use* information processing skills. In fact, for a number of such skill uses, the effects of readiness to learn were equal to or exceeded the effects of education. Readiness to learn is a particularly strong predictor of the use of various skills at home. Readiness to learn was shown in the current study to consistently mediate the effects of education on skills use both at home and at work, and also mediate the effects of age and work experience. Thus, readiness to learn can be said to explain, in part, the observed relationship between education and skill use, as well as -- to a more limited extent -- the relation between age / work experience and skill use across different life contexts. Clearly, readiness to learn has a non-trivial role in the extent to which adults use these skills.

Our findings also suggest that readiness to learn may be more related to skill use at home than at work. This may be due to the types of conditions and demands that employees encounter in the workplace, possibly including limited opportunities to apply certain skills at work relative to the potentially greater latitude in use of skills at home. That is, the use of workplace skills may be more constrained than home skill use, due to the particular roles and responsibilities aligned with specific occupations and, thus, workers must use these skills regardless of their curiosity level, interest, or ability to relate ideas or concepts to each other or their own lives (i.e., regardless of their readiness to learn).

There has been much concern expressed in the popular media, business circles, and in labor policy reports that many adults come into the labor force inadequately prepared to be productive in today's highly competitive, global economy (*Ready to Work*, 2014; Soares & Perna, 2014; Spring, 2008; *Workforce Innovation and Opportunity Act*, 2014). There has been much less attention devoted to how well the work environment is prepared for the workers and learners who are employed. That is, are workplaces conducive to learning? Do employers fully capitalize upon the skills and knowledge that employees bring with them? Do workplaces allow workers to use a

diverse enough array of skills that relate to and leverage their learning readiness? These questions are significant in light of the costs to employers for employee training programs.

For example, U.S. organizations spent approximately $156.2 billion on employee learning in 2011. While average annual expenditures for employment training in U.S. business and industry have remained flat over the past decade, these costs have recently increased, according to a 2012 report from the American Society of Training Directors. Fully 44 percent of employer costs were for employees' college tuition reimbursements or to pay external agencies to train employees (ASTD, 2012), rather than for on-the-job training. Nonetheless, these are significant costs to employers who may not fully recognize and leverage the knowledge and skills that workers bring into the workplace.

Our findings suggest that, if readiness to learn predicts skill use better at home than in the workplace, the workplace may not be maximally utilizing the human capital that is present. If adults are using skills at home that relate to their learning readiness, then they clearly have these skills. But, perhaps such skills are not recognized as valuable, useful, or transferable to the workplace. It is likely that many workers (and their skills) are being underutilized in the workplace. While these data do not clearly show that this is the case, the fact that readiness to learn emerges as a key factor in skill use merits further investigation.

An important point to consider in these findings is that, although Readiness to Learn does emerge as a key predictor of adults' skill use among the predictors considered, the set of predictor variables taken together still account for less than one-quarter of the variability in this skill use (as reflected by the *R*-squared values). The predictors account for somewhat more variability in skill levels, but there are clearly other unexplored variables that may be affecting both skill level and skill use.

Implications of Findings for Policy and Practice

There are several interesting implications arising from this research. First, our findings suggest that it may be particularly important for employers to focus on adult education practices that enhance the readiness to learn of low education workers. These practices could help to ameliorate some of the negative effects of low education on skills and skill uses. In addition, adults appear to have a readiness to learn that belies current negative perspectives on human capital in the United States and elsewhere. This suggests there may be untapped potential for this learning readiness to be leveraged in the workplace toward the application of a more diverse array of skills.

Efforts to assist adults in transferring skills that they already use at home, and perhaps in other life situations, to the workplace may be a valuable yet understudied avenue for employee development. Considerable attention has been paid to the transfer-of-learning from training programs to "real" work situations, including those that may not closely resemble the context of the training (Kaiser, Kaminski, & Foley, 2013). It may be equally important to consider how to nurture such transfer of skill use from

home to work. PIAAC reports that have been published to date discuss the mismatch between worker skills and skill use (e.g. Allen et al., 2013). While our study does not directly address this issue, the observed relationship between readiness to learn and the use of skills at home points to the power of individual interest, curiosity, and the ability to derive meaning from ideas and concepts. One way to encourage this transfer could include facilitating workers' interest in skill development by establishing more meaningful connections between their work experiences and their need for new learning. These connections could be built on workers' prior learning obtained from a variety of contexts and a greater emphasis on contextual learning within the workplace.

The role of contextual learning is widely accepted in the workplace learning literature (Bierema, 2002). The present study raises questions about the way in which training resources are currently allocated. Current practices have led to a reduction of training for new skills in the workplace for lower level workers and a greater emphasis on the development of expertise at the managerial level (Rose, 2013). Thus, those with less education and lower skill levels are often left out of the current discussion of training and development in the workplace. Our findings regarding readiness to learn point to the potential benefits of training that is appropriately contextualized. For example, one way to begin such an effort may be to spend time during employee orientation periods learning what are the related skills, curiosities, and interests that new employees bring into the work environment, based on both their prior work and outside-of-work experiences. This knowledge might then be used to assist workers in finding meaningfulness in their work environment. It could also be used to encourage the development of more robust problem solving approaches to work tasks. Finally, recognition of the readiness to learn construct could add to policy discussions on workplace learning by emphasizing the importance of contextual learning at all levels within organizations, not only the managerial level.

Recommendations for Future Research

Because readiness to learn is a relatively unexplored topic, there are several areas that can be explored more fully using the PIAAC data. These include:

1. A more complete examination of the readiness to learn (RtL) construct. This construct was developed by the PIAAC, but additional evidence of reliability and validity is needed. We have begun to do this with recent work (Smith et al. 2014) that examines data used in the present study (the U.S. sample). This research examines the factor structure and reliability of the readiness to learn construct and its invariance across specific subgroups--specifically, individuals of varied gender, age, work status, and educational levels. Preliminary findings provide evidence for a unidimensional construct with good reliability (alpha = .852 and omega = .858). The RtL construct showed metric invariance across all observed subgroups, and scalar invariance across all subgroups except for educational level. The invariance results imply that the construct is being measured similarly for these subgroups; i.e., that relationships between

readiness to learn and other constructs such as skill levels can be validly compared across each of these subgroups and that mean scores on the constructs can be meaningfully compared across each of the subgroups (with the possible exception of educational level).

2. Many aspects of readiness to learn need to be explored. Given the PIAAC data, it could be important to look at readiness to learn in relation to other constructs such as employment status, social engagement, skill development, and skill use in diverse settings. Additionally, it is important to examine more closely different aspects of skill use at home and work in relationship to readiness to learn, given the differences in skill demands between these two contexts.

3. The moderating and mediating effects of readiness to learn on educational level need to be examined more extensively. Within the PIAAC, this could be studied by means of a more complex structural equation model that posits readiness to learn as a latent construct that potentially relates to multiple latent and observed variables, both endogenous and exogenous. For example, multiple skill types might be incorporated into the model as outcomes, or both skill use and skill level might serve as outcomes. The structural equation model might also posit a more involved pathway whereby, for instance, readiness to learn has mediating and/or moderating effects on the extent of skill use, which then in turn directionally affect individuals' skill levels.

4. An examination of the relationship between participation in various forms of adult education and training and readiness to learn. The PIAAC *Reader's Companion* (OECD, 2013b) describes readiness to learn in terms of participation but does not examine the construct as a factor in participation. We think it would be important to examine readiness to learn from this perspective in order to examine it as a predictive construct.

6. Our investigation only focused on readiness to learn among U.S. adults. It will be important to examine the relationships of readiness to learn to both literacy skills and skill use in an international context to determine how readiness to learn might function in similar or different ways for adult populations in other nations. For instance, U.S. adults exhibited lower skill proficiencies but higher use of these skills (OECD, 2013b) in comparison to other countries. This suggests that it may be of some value to further examine this "low proficiency/high use" finding in relationship to adults' readiness to learn.

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Table 1

Items on the "Readiness to Learn" Scale of the Survey of Adult Skills Background Questionnaire

Item	Item description
	"I would now like to ask you some questions about how you deal with problems and tasks you encounter. To what extent do the following statements apply to you?"
Item 1	When I hear or read about new ideas, I try to relate them to real life situations to which they might apply
Item 2	I like learning new things
Item 3	When I come across something new, I try to relate it to what I already know
	To what extent do the following statements apply to you?
Item 4	I like to get to the bottom of difficult things
Item 5	I like to figure out how different ideas fit together
Item 6	If I don't understand something, I look for additional information to make it clearer

Note. Response options are 1 = *Not at all*, 2 = *Very little*, 3 = *To some extent*, 4 = *To a high extent*, 5 = *To a very high extent*

Table 2

Indices of Skill Use from Background Questionnaire of Survey of Adult Skills

Skill Use Index	Reliability (alpha)	Skills involved
1. Index of use of ICT skills at home	.69	Using e-mail, Internet, spreadsheets, word processors, programming languages; conducting transactions on line; participating in online discussions (conferences, chats)
2. Index of use of ICT skills at work	.77	
3. Index of use of numeracy skills at home	.77	Calculating prices, costs or budgets; use of fractions, decimals or percentages; use of calculators; preparing graphs or tables; algebra or formulas; use of advanced math or statistics (calculus, trigonometry, regressions)
4. Index of use of numeracy skills at work	.81	
5. Index of use of reading skills at home	.73	Reading documents (directions, instructions, letters, memos, e-mails, articles, books, manuals, bills, invoices, diagrams, maps)
6. Index of use of reading skills at work	.81	
7. Index of use of writing skills at home	.50	Writing documents (letters, memos, e-mails, articles, reports, forms)
8. Index of use of writing skills at work	.62	

Table 3

Frequency Distribution for Respondents' Gender and Age

Characteristic	Frequency	Percent
Gender		
Female	2548	50.9%
Male	2462	49.1%
Total	5010	100.0%
Age		
16-19 years	397	7.9%
20-24 years	537	10.7%
25-29 years	520	10.4%
30-34 years	494	9.9%
35-39 years	499	10.0%
40-44 years	506	10.1%
45-49 years	540	10.8%
50-54 years	553	11.0%
55-59 years	474	9.5%
60-65 years	490	9.7%
Total	5010	100.0%

Note. Frequencies are based on weighted analysis.

Table 4

Descriptive Statistics for Respondents' Years of Work Experience and Education

	N	*M*	*SD*	Minimum	Maximum
Years of Work Experience	5010	19.40	13.19	0	47
Years of Education	5010	13.27	3.07	6	21

Table 5

Regression of Literacy, Numeracy, and PS-TRE Scores on Readiness to Learn, Gender, Education, Age, and Work Experience

Outcome	Effect	*df*	*β*	*SE*	*t*	*Pratt index*
Literacy (R^2 =.34)	Readiness to Learn	1	0.05	0.02	3.08**	0.011
	Gender (female)	1	0.01	0.02	0.59	<0.001
	Education (in years)	1	0.54	0.01	38.18***	0.293
	Age (5 year increments)	1	-0.35	0.03	-10.87***	0.032
	Work experience (in years)	1	0.21	0.03	5.92***	0.003
Numeracy (R^2 = .38)	Readiness to Learn	1	0.04	0.02	2.38**	0.009
	Gender (female)	1	-0.11	0.01	-7.34***	0.013
	Education (in years)	1	0.57	0.01	38.64**	0.316
	Age (5 year increments)	1	-0.33	0.03	-10.91***	0.021
	Work experience (in years)	1	0.22	0.03	6.98***	0.013
PS-TRE (R^2 = .23)	Readiness to Learn	1	0.05	0.02	2.94***	0.007
	Gender (female)	1	-0.04	0.02	-2.12*	0.001
	Education (in years)	1	0.44	0.02	22.30***	0.165
	Age (5 year increments)	1	-0.42	0.04	-10.51***	0.075
	Work experience (in years)	1	0.16	0.04	3.58***	-0.018

Note. $*p < .05$, $**p < .01$, $***p < .001$, df_{error} = 1868.

Table 6

Mediating Effects of Readiness to Learn on the Relationship between Specified Predictors and Literacy, Numeracy, and PS-TRE Scores

Skill Outcome	Predictor	Test statistic (*z*)	*p*
Literacy	Gender (female)	0.50	.615
	Age (5 year increments)	2.79**	<.005
	Work experience (in years)	2.41*	.016
	Education (in years)	3.02**	.002
Numeracy	Gender (female)	0.50	.618
	Age (5 year increments)	2.24*	.025
	Work experience (in years)	2.03*	.042
	Education (in years)	2.36*	.018
PS-TRE	Gender (female)	0.50	.615
	Age (5 year increments)	2.69**	.007
	Work experience (in years)	2.34*	.019
	Education (in years)	2.90**	.004

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 7

Moderating Effects of Readiness to Learn on the Relationship between Selected Predictors and Literacy, Numeracy, and PS-TRE Scores

Outcome	Effect	*df*	*β*	*SE*	*t*
Literacy (R^2 =.35)	Readiness to Learn	1	0.03	0.02	1.52
	Gender (female)	1	0.01	0.02	0.54
	Age (5 year increments)	1	-0.35	0.03	-10.56***
	Work experience (in years)	1	0.21	0.04	5.73***
	Education (in years)	1	0.55	0.01	37.43***
	Rtl ×Gender	1	0.03	0.02	1.60
	Rtl ×Age	1	-0.07	0.03	-2.50*
	Rtl ×Work experience	1	0.03	0.03	1.00
	Rtl ×Education	1	-0.04	0.02	-2.31*
Numeracy (R^2 = .38)	Readiness to Learn	1	0.03	0.02	1.44
	Gender (female)	1	-0.11	0.01	-7.30***
	Age (5 year increments)	1	-0.33	0.03	-10.70***
	Work experience (in years)	1	0.22	0.03	6.79***
	Education (in years)	1	0.57	0.01	38.40***
	Rtl ×Gender	1	0.02	0.02	1.09
	Rtl ×Age	1	-0.06	0.02	-2.70**
	Rtl ×Work experience	1	0.03	0.03	1.14
	Rtl ×Education	1	-0.03	0.02	-2.01*
PS-TRE (R^2 = .23)	Readiness to Learn	1	0.05	0.03	1.90
	Gender (female)	1	-0.04	0.02	-2.18*
	Age (5 year increments)	1	-0.42	0.04	-10.49***
	Work experience (in years)	1	0.16	0.04	3.56***
	Education (in years)	1	0.44	0.02	22.97***
	Rtl ×Gender	1	0.02	0.02	0.65
	Rtl ×Age	1	-0.01	0.04	-0.20
	Rtl ×Work experience	1	-0.02	0.04	-0.50
	Rtl ×Education	1	-0.03	0.02	-1.59

Note. $*p < .05$, $**p < .01$, $***p < .001$, $df_{error} = 1864$.

Table 8

Regression of Skill Use on Readiness to Learn, Gender, Education, Age, and Work Experience

Outcome	Effect	*df*	*β*	*SE*	*t*	*Pratt index*
ICT skill use at home (R^2 =.17)	Readiness to Learn	1	0.21	0.02	12.02***	0.057
	Gender (female)	1	0.02	0.02	1.07	0.001
	Age (5 year increments)	1	-0.18	0.03	-5.39***	0.024
	Work experience (in years)	1	-0.04	0.04	-1.09	0.005
	Education (in years)	1	0.30	0.02	17.28***	0.086
ICT skill use at work (R^2 = .14)	Readiness to Learn	1	0.12	0.03	4.16***	0.021
	Gender (female)	1	-0.06	0.02	-2.80**	0.004
	Age (5 year increments)	1	0.02	0.04	0.44	0.002
	Work experience (in years)	1	0.06	0.04	1.40	0.006
	Education (in years)	1	0.32	0.02	15.16***	0.110
Numeracy skills at home (R^2 = .13)	Readiness to Learn	1	0.21	0.02	10.44***	0.052
	Gender (female)	1	-0.02	0.02	-1.10	0.001
	Age (5 year increments)	1	-0.32	0.03	-9.48***	0.075
	Work experience (in years)	1	0.09	0.03	2.71**	-0.014
	Education (in years)	1	0.10	0.02	5.22***	0.011
Numeracy skills at work (R^2 = .07)	Readiness to Learn	1	0.12	0.02	6.16***	0.019
	Gender (female)	1	-0.13	0.02	-6.06***	0.017
	Age (5 year increments)	1	-0.13	0.04	-3.43***	-0.005
	Work experience (in years)	1	0.16	0.03	4.78***	0.012
	Education (in years)	1	0.16	0.02	8.62***	0.028
Reading skills at home (R^2 = .19)	Readiness to Learn	1	0.33	0.02	20.21***	0.128
	Gender (female)	1	0.03	0.02	1.37	0.001
	Age (5 year increments)	1	-0.10	0.03	-3.32***	0.006
	Work experience (in years)	1	0.03	0.02	1.30	<0.001
	Education (in years)	1	0.20	0.02	12.75***	0.056
Reading skills at work (R^2 = .23)	Readiness to Learn	1	0.19	0.02	7.94***	0.050
	Gender (female)	1	-0.03	0.02	-2.09*	0.001
	Age (5 year increments)	1	0.04	0.04	0.99	0.008
	Work experience (in years)	1	0.12	0.04	3.19**	0.025
	Education (in years)	1	0.35	0.02	21.03***	0.143
Writing skills at home (R^2 = .15)	Readiness to Learn	1	0.25	0.02	14.11***	0.072
	Gender (female)	1	0.07	0.02	4.32***	0.004
	Age (5 year increments)	1	-0.21	0.03	-6.26***	0.042
	Work experience (in years)	1	-0.02	0.03	-0.70	0.003
	Education (in years)	1	0.16	0.02	8.02***	0.027
Writing skills at work (R^2 = .11)	Readiness to Learn	1	0.12	0.02	5.24***	0.020
	Gender (female)	1	-0.01	0.02	-0.50	<0.001
	Age (5 year increments)	1	-0.10	0.04	-2.27*	-0.010
	Work experience (in years)	1	0.19	0.04	4.57***	0.025
	Education (in years)	1	0.27	0.02	14.84***	0.080

Note. $*p < .05$, $**p < .01$, $***p < .001$, $df_{error} = 1868$.

Table 9

Mediating Effects of Readiness to Learn on the Relationship between Specified Predictors and Skill Uses

Skill Use Outcome	Predictor	Test statistic (*z*)	*p*
ICT skill use at home	Gender (female)	0.51	.610
	Age (5 year increments)	5.85***	<.001
	Work experience (in years)	3.69***	<.001
	Education (in years)	9.76***	<.001
ICT skill use at work	Gender (female)	0.51	.613
	Age (5 year increments)	3.53***	<.001
	Work experience (in years)	2.85**	.005
	Education (in years)	4.04***	<.001
Numeracy skills at home	Gender (female)	0.51	.610
	Age (5 year increments)	5.63***	<.001
	Work experience (in years)	3.64***	<.001
	Education (in years)	8.85***	<.001
Numeracy skills at work	Gender (female)	0.51	.611
	Age (5 year increments)	4.53***	<.001
	Work experience (in years)	3.28**	.001
	Education (in years)	5.78***	<.001
Reading skills at home	Gender (female)	0.510	.610
	Age (5 year increments)	6.35***	<.001
	Work experience (in years)	3.81***	<.001
	Education (in years)	12.89***	<.001
Reading skills at work	Gender (female)	0.51	.611
	Age (5 year increments)	5.12***	<.001
	Work experience (in years)	3.49***	<.001
	Education (in years)	7.17***	<.001
Writing skills at home	Gender (female)	0.51	.610
	Age (5 year increments)	6.04***	<.001
	Work experience (in years)	3.74***	<.001
	Education (in years)	10.79***	<.001
Writing skills at work	Gender (female)	0.51	.612
	Age (5 year increments)	4.13***	<.001
	Work experience (in years)	3.12**	.002
	Education (in years)	5.00***	<.001

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 10

Moderating Effects of Readiness to Learn on the Relationship between Selected Predictors and Skill Use Outcomes

Outcome	Effect	*df*	*β*	*SE*	*t*
ICT skill use at home (R^2 =.17)	Readiness to Learn	1	0.24	0.03	7.39***
	Gender (female)	1	0.02	0.02	1.25
	Age (5 year increments)	1	-0.17	0.03	-5.38***
	Work experience (in years)	1	-0.04	0.04	-1.18
	Education (in years)	1	0.30	0.02	17.36***
	Rtl ×Gender	1	-0.03	0.03	-1.11
	Rtl ×Age	1	-0.02	0.03	-0.47
	Rtl ×Work experience	1	0.01	0.03	0.41
	Rtl ×Education	1	-0.02	0.03	-0.68
ICT skill use at work (R^2 = .15)	Readiness to Learn	1	0.15	0.05	2.84**
	Gender (female)	1	-0.06	0.02	-2.91**
	Age (5 year increments)	1	0.03	0.04	0.60
	Work experience (in years)	1	0.05	0.04	1.23
	Education (in years)	1	0.32	0.02	15.84***
	Rtl ×Gender	1	-0.01	0.04	-0.23
	Rtl ×Age	1	-0.02	0.05	-0.52
	Rtl ×Work experience	1	0.02	0.05	0.44
	Rtl ×Education	1	-0.05	0.02	-2.35*
Numeracy skills at home (R^2 = .13)	Readiness to Learn	1	0.22	0.03	7.53***
	Gender (female)	1	-0.02	0.02	-1.16
	Age (5 year increments)	1	-0.31	0.03	-9.16***
	Work experience (in years)	1	0.09	0.03	2.55*
	Education (in years)	1	0.11	0.02	5.63***
	Rtl ×Gender	1	0.00	0.03	0.04
	Rtl ×Age	1	-0.05	0.04	-1.39
	Rtl ×Work experience	1	0.05	0.03	1.74
	Rtl ×Education	1	-0.05	0.02	-2.19*
Numeracy skills at work (R^2 = .08)	Readiness to Learn	1	0.19	0.03	6.36***
	Gender (female)	1	-0.12	0.02	-5.68***
	Age (5 year increments)	1	-0.13	0.04	-3.40***
	Work experience (in years)	1	0.16	0.03	4.79***
	Education (in years)	1	0.16	0.02	8.59***
	Rtl ×Gender	1	-0.10	0.03	-3.43***
	Rtl ×Age	1	-0.01	0.05	-0.24
	Rtl ×Work experience	1	0.02	0.04	0.59
	Rtl ×Education	1	0.00	0.02	0.07

Table 10 (ctd.)

Moderating Effects of Readiness to Learn on the Relationship between Selected Predictors and Skill Use Outcomes

Outcome	Effect	*df*	*β*	*SE*	*t*
Reading skills at home (R^2 = .20)	Readiness to Learn	1	0.33	0.03	10.24***
	Gender (female)	1	0.02	0.02	1.26
	Age (5 year increments)	1	-0.09	0.03	-2.95**
	Work experience (in years)	1	0.02	0.02	1.00
	Education (in years)	1	0.21	0.02	13.33***
	Rtl ×Gender	1	0.02	0.03	0.49
	Rtl ×Age	1	-0.02	0.04	-0.65
	Rtl ×Work experience	1	0.03	0.04	0.79
	Rtl ×Education	1	-0.08	0.02	-4.10***
Reading skills at work (R^2 = .23)	Readiness to Learn	1	0.22	0.03	6.99***
	Gender (female)	1	-0.03	0.02	-2.00*
	Age (5 year increments)	1	0.05	0.04	1.09
	Work experience (in years)	1	0.12	0.04	1.09
	Education (in years)	1	0.35	0.02	21.99***
	Rtl ×Gender	1	-0.04	0.03	-1.64
	Rtl ×Age	1	-0.03	0.05	-0.63
	Rtl ×Work experience	1	0.03	0.05	0.68
	Rtl ×Education	1	-0.04	0.02	-2.75**
Writing skills at home (R^2 = .15)	Readiness to Learn	1	0.26	0.03	8.25***
	Gender (female)	1	0.07	0.02	4.28***
	Age (5 year increments)	1	-0.20	0.03	-6.05***
	Work experience (in years)	1	-0.02	0.03	-0.75
	Education (in years)	1	0.16	0.02	8.22***
	Rtl ×Gender	1	-0.01	0.03	-0.43
	Rtl ×Age	1	0.01	0.03	0.43
	Rtl ×Work experience	1	0.01	0.03	0.25
	Rtl ×Education	1	-0.01	0.02	-0.66
Writing skills at work (R^2 = .11)	Readiness to Learn	1	0.13	0.03	4.10***
	Gender (female)	1	-0.01	0.02	-0.39
	Age (5 year increments)	1	-0.10	0.04	-2.32*
	Work experience (in years)	1	0.20	0.04	4.79***
	Education (in years)	1	0.27	0.02	15.29***
	Rtl ×Gender	1	-0.01	0.03	-0.29
	Rtl ×Age	1	0.03	0.06	0.57
	Rtl ×Work experience	1	-0.04	0.05	-0.83
	Rtl ×Education	1	-0.02	0.02	-0.94

Note. $*p < .05$, $**p < .01$, $***p < .001$, df_{error} = 1864.

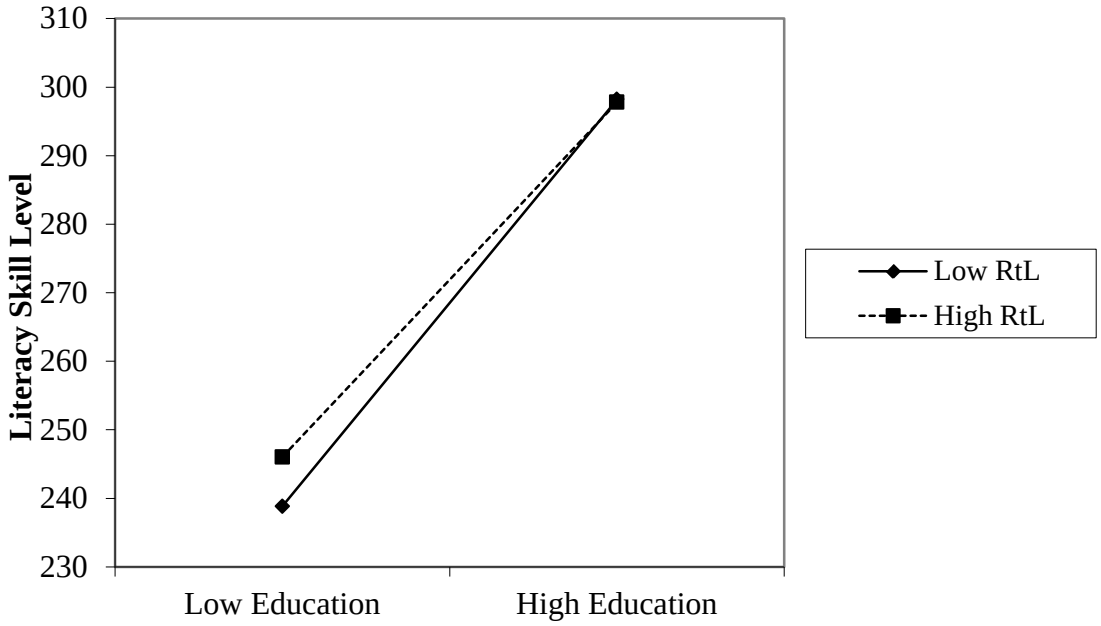

Figure 1. The moderating effect of Readiness to Learn (RtL) on the relationship between educational level and literacy skill level. At low educational levels, RtL has a more pronounced effect on skill level than at high education levels.