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MISSION STATEMENT

The Journal of Research and Practice for Adult Literacy, Secondary, and Basic Education is published jointly three times a year by the Commission on Adult Basic Education and Rutgers University. The journal's mission is to provide a forum for sharing research, information, theory, commentary, and practical experiences that will improve the quality of services for adult basic education, literacy, and numeracy learners. These learners are found in publicly funded ABE, ESL, and GED programs; volunteer-based literacy programs; community-based literacy programs; family literacy programs; workplace literacy programs; correctional literacy programs; and many other places.

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THE COABE JOURNAL, CELEBRATING 36 YEARS AS A MAJOR VOICE IN ADULT EDUCATION

Dear Colleagues,

We are excited to offer you the summer issue of the journal. This issue includes three research articles and a forum on public policy. In addition, we have interesting resource and book reviews, as well as a fascinating discussion of online courses for adult basic skills learners.

Rachel Blackmer and Rachel Hayes-Harb present an interesting comparison of methods used to teach English to English Language Learners in a community-based program. This study is of importance, not only for its research findings, but also because of the way that a university-based researcher and community-based organization collaborated on the research and on the development of an innovative program. This is an excellent example of how innovative methods developed externally can be introduced into organizations and influence practice.

The second research article, authored by Nicole Taylor, Nicole Patton Terry, and Daphne Greenberg, reports on the relationship between parental literacy skills and their children's emergent skills. This study asks a rather simple, yet extremely important question. While it has long been known that individuals with higher education levels are more likely to have children with higher level skills, it was not clear whether this was due to the level of their literacy skills or to something that happened during the educational process itself. While this study does not answer this question, it begins an examination of the issue, finding that parental literacy skills are related to higher skill levels for children.

The third research article is also the third installment of our collaboration with the American Institutes for Research (AIR) for the publication of commissioned research studies that analyze data from the Program for the International Assessment of Adult Competencies (PIAAC). In this article, Anita Alves Pena has found that skill only partially explains differences in economic inequality across countries. This is extremely important in the development of policies focused on lower skilled adults.

Finally, we are excited to present our Forum. We have two outstanding articles included here. In the first, Amy Pickard critiques WIOA for its potential to limit learning opportunities for learners who score at the lower levels on standardized assessments. She argues that the emphasis on education for work in WIOA may mean that these adults are not in a position to participate in or benefit from many programs and may lose out. She also suggests that this disproportionally affects minorities. Debra Bragg offers a different perspective. While she agrees with the general critique, Bragg maintains that WIOA's focus on career and college transition can be integrated with instruction that supports literacy development along with preparation for next steps in ways that accelerate progress and improve prospects for learners. We hope these two pieces stimulate your thinking about the impact of policy on learning opportunities and encourage you to reflect on how program responses to WIOA can effectively meet the needs of all learners while maintaining expectations and targets of funders.

We are pleased to include a resource review by Lisa Baumgartner. We are continuing a rotation of authors for this column by inviting guest researchers, whose areas of expertise are related but not directly in the fields of adult literacy, secondary and basic education. Our aim is to introduce new perspectives and research to our readers that can contribute to new knowledge and understandings in the field. We are hopeful that this approach extends the depth and breadth of ideas the journal brings to our readers. In this issue, Dr. Baumgartner discusses an article by Perry and Homan that looks at the literacy practices of individuals in Africa and the Americas. She draws on her expertise in qualitative research and identity theory to provide an interesting discussion of this article.

In his WebScan column, David Rosen provides an overview of free online courses for Adult Basic Skills learners. This is an often discussed, but not much researched area and Dr. Rosen presents a helpful group of resources for educators.

Finally, this issue includes two book reviews. In the first, Amani Talwar reviews Duncan's book, *Reading for Pleasure and Reading Circles for Adult Emergent Readers: Insights in Adult Learning*. The second is Erik Jacobson's review of *Unfit to Be a Slave: A Guide to Adult Education for Liberation*.

Sincerely,

Amy D. Rose	Alisa Belzer	Heather Brown
Co-Editor	Co-Editor	Co-Editor

The Relationship Between Parents' Literacy Skills and Their Preschool Children's Emergent Literacy Skills

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Abstract

The aim of the present study was to investigate the correlational and predictive relationships between parents with low literacy skills (n = 96) and their 3–5 year old children's emergent literacy skills (n = 96). In the study parents were assessed on measures of reading comprehension, decoding, fluency, oral vocabulary, and word identification, and prekindergarten children were assessed on similar measures of alphabet knowledge, beginning sound awareness, print awareness, and oral vocabulary. Results indicated that parents' word identification and fluency skills were positively correlated with all of the children's literacy skills with the exception of print awareness. Parents' decoding, receptive vocabulary, and expressive vocabulary skills were positively associated with all of the children's literacy skills with the exception of phonological awareness. Also, hierarchical regressions indicated a predictive relationship between several of the skills after accounting for child age and parent educational level. This study adds to the family literacy literature indicating the importance of the relationship between children and their parents' literacy skills.

As research has focused largely on the role of emergent literacy skills in children's subsequent reading achievement (National Early Literacy Panel, 2008), the role of the parent has also been endorsed as a fundamental component in children's early reading success (Sénéchal & Young, 2008). Based on prior research showing a correlation between the mother's educational level and the child's achievement in school, many assume that a positive causal relationship exists (Kogut, 2004; Korat, 2009; Magnuson, Sexton, Davis-Kean, & Huston, 2009). As this causal relationship is one of the major presumptions for the provision of family literacy programming and initiatives, it is often assumed that improving the parent's literacy level will lead to improvement in other environmental, social, and cultural factors that support literacy. Surprisingly, these presumptions are supported primarily by data on parent variables that is either self-reported (e.g., surveys) or indicated by educational level. There is a lack of empirical research that measures both the parent's and child's literacy skills.

Ample evidence supports the strong relationship between parents' educational levels and their children's literacy levels (Korat, 2009; Magnuson et al., 2009). Meanwhile, according to the 2000 United States Census, it is estimated that 21% of the adult population does not have a high school diploma, or a high school equivalence diploma (Lasater & Elliot, 2005). Parents' low levels of educational attainment likely impact their children's literacy development. For example, in a longitudinal study of children's reading and reading-related abilities in kindergarten through fifth grade, Hecht et al. (2000) found that a composite score comprised of parents' grade attainment and occupation significantly and independently accounted for growth in children's reading and oral language abilities. Korat (2009) found significant positive correlations between mothers' educational level and children's (ages 5–6 years old) literacy performance. Children of mothers with a Bachelor's degree or higher scored significantly higher than children of mothers with a high school diploma or less on measures of print concepts, word recognition, receptive vocabulary, emergent word writing, and emergent book reading, but not phonological awareness. Finally, Magnuson et al. (2009) found significant positive relationships between mothers' educational levels and preschool children's oral vocabulary comprehension and expressive language skills.

Despite the potency of these findings, a measure of parents' educational level (e.g., highest grade completed in school) is only a proxy for adults' true academic abilities. Education level does not provide a complete picture of one's academic ability. For example, Greenberg (1995) found that 63% of her adult participants who read at a third to fifth grade level had completed the 11th grade, and an additional 24% were high school graduates. Gross measures of educational attainment, like "highest grade level completed," may mask low literacy rates that are present within the general adult population in the United States. According to the most recent assessment of adult literacy skills, one in six adults in the United States reads at or below elementary school levels (OECD, 2013). Many of these adults exhibit limited literacy capabilities and have difficulty with tasks such as filling out an application, reading news stories, reading labels, or reading instructional materials (National Center for Educational Statistics, n.d). Thus, in order to investigate the relationship between parents' and children's literacy skills, it may be important to assess both groups' skills directly.

It is important to investigate this relationship directly because many adults who participate in family literacy programs may be at the lowest literacy levels, but are expected to work with their child on literacy related tasks in the home (Chen, Pisani, White, & Soroui, 2012; Wen, Bulotsky-Sharer,

Hahs-Vaughn, & Korfmacher, 2012). Therefore it is important for educational programs to be aware of the diverse literacy needs of families as they provide services. Moreover, as the current study is a first step in exploring the correlation between parent and child skills it is our hope that this research may be extended in the future to yield helpful information about the intergenerational transfer of literacy skills which has been considered in previous research as important (e.g., Bus, van Ijzendoorn, & Pellegrini, 1995; Hecht, Burgess, Torgesen, Wagner, & Rashotte, 2000; Korat, 2009). Research on family literacy programs and strategies suggest that effective programs require parents to actively engage with texts and use of strategies such as print referencing, conversational expansions, and other reading-related strategies (Wen et al., 2012). Thus, parents themselves need to have sufficient literacy capabilities to implement these programs and strategies effectively (Chen et al., 2012). Unfortunately, little research in this area has considered whether or not program implementation is effected by parents' literacy levels. As attention to the intergenerational cycles of functional illiteracy increases both in the research literature and among service providers, it may be valuable to consider the value of adult education alongside early childhood education. Accordingly, the following research questions were posed:

1. What are the relationships among parents' educational level, their literacy skills (receptive and expressive vocabulary, decoding, word recognition, fluency) and their children's related emergent literacy skills (receptive and expressive vocabulary, phonological awareness, letter knowledge, print awareness)?

2. After accounting for the child's age and parents' educational level, do parent literacy skills account for variance in related child emergent literacy skills?

This correlational study serves as a necessary first step in investigating the relationship between parents' specific literacy skills and their children's specific literacy skills. It was conducted with the hope that information would be gathered to help guide future intergenerational researchers investigate causal intergenerational relationships.

Method

Participants

This study included 192 participants, which consisted of 96 primary caregivers and one prekindergarten child of each primary caregiver. Children (100% African American, 60% female, mean age = 55 months, *SD* = .37) were attending a state-funded pre-kindergarten program that was also participating in an Early Reading First (ERF) project. ERF is a federally-funded early education grant program that sought to create early childhood centers of excellence that served primarily children from low-income families. Through provisions established by ERF and state-mandated standards for prekindergarten instruction, children in these prekindergarten classrooms received high-quality, developmentally appropriate instruction in oral language, emergent literacy, and cognitive, socioemotional, and physical development. Children completed several assessments of early literacy skills as a part of ERF. Caregivers (hereafter referred to as *parents*) were recruited to participate in this study if their children completed testing within the ERF project.

Responses on demographic surveys revealed that 99% of the adult participants were African American, 80% were female, and their average age was 32 years old (*SD* = 8.84). Mothers were the majority of the primary caregivers who participated in the study (i.e., 75%), with others self-identifying as grandparents, fathers, or other guardians. All participants were native English speakers. Additionally, all of the adults reported their highest level of education—20% reported that they did not complete high school, 24% reported graduating from high school, 26%

reported having a high school degree with some college or associates education, 2% reported having an associate's degree, and 28% reported having a four year degree or higher.

Procedure

Prior to recruitment for this study, the investigators obtained IRB approval. The parent participants for this study, whose children had available literacy scores (from a separate larger study) were recruited to participate. Parents were assessed in a quiet location at their child's school. All participants started with item number 15 on the Letter-Word Identification subtest of the *Woodcock Johnson Tests of Achievement*, 3rd Edition (WJ-III; Woodcock, McGrew, & Mather, 2001). This item is the first word reading item which does not have letter identification items following it, and is at the k.7 grade level (therefore it was anticipated that all parents would be able to easily read the first few words). The age level equivalencies obtained on this subtest forecasted the starting points for the *Peabody Picture Vocabulary Test*, 3rd Edition (PPVT; Dunn & Dunn, 1998) and *Expressive Vocabulary Test* (EVT; Williams, 2007) to ensure that the adults were started at an appropriate level that would not be too difficult. Testing for the adult participants was completed in one session lasting 25 to 40 minutes.

Children were tested prior to their parents, individually at the beginning of the school year by trained ERF staff as a part of the separate larger study (investigators from the current study were granted access by the parents to the child assessment data). Tests were administered in random order and in standardized format according to directions stated in the test manuals. All testing occurred during the morning school hours, in two or three sessions.

Measures
Parent Oral Language and Literacy

Oral vocabulary. To measure oral receptive vocabulary, the PPVT (Dunn & Dunn, 1998) was administered. Participants were instructed to look at a template with four pictures, listen to the word orally presented by the examiner, and chose the picture that best represents the word. This test was normed on people ages 2 to 90+, with reliability of .97.

The EVT (Williams, 2007) was administered to measure expressive vocabulary. Participants were shown a picture and asked to provide a single word to label a picture or to provide a single word synonym for the target word. This assessment was normed on people ages 2 to 90+, with a reliability of .97.

Word recognition. The Letter-Word Identification subtest of the WJ-III measured the participants' word identification skills as they identified words of increasing difficulty. This subtest was normed on people ages 5 to 80+, with a reliability of .94.

Decoding. The Word Attack subtest of the WJ-III measured the adults' decoding skills requiring participants to read aloud pseudo words (of increasing difficulty) that are phonetically consistent or regular patterns in English orthography. This subtest was normed on people ages 4 to 80+, with a reliability of .87.

Reading fluency. The Fluency subtest of the WJ-III assessed the participants' reading speed and rate within a 3-minute time limit. The Fluency subtest was normed on people ages 6 to 80+, with a reliability of .90.

Child Oral Language and Literacy

Oral vocabulary. Similar to the adults, the children were administered the PPVT and EVT (see descriptions above).

Phonological awareness. The Beginning Sounds subtest of Phonological Awareness Literacy Screening (PALS PreK; Invernizzi, Sullivan, Meier,

& Swank, 2004) measured children's phonological awareness skills and required children to orally produce the beginning sounds of words that were first spoken aloud by the examiner. This assessment was intended for preschoolers, with a reliability of .93.

Alphabet knowledge. Letter Knowledge subtest of the PALS PreK assessed alphabet knowledge. The test administrator asked children to name the 26 upper-case letters of the alphabet presented in random order. This assessment was designed for preschoolers and no information regarding reliability is available for this subtest.

Print awareness. The Print and Word Awareness subtest PALS PreK measured print identification, concepts of print, and concepts of word. This subtest contained 10 items and mimicked a naturally occurring book reading event. This subtest was designed for preschoolers with a reliability of .75.

Demographics

Demographics. Parents provided the following demographic information about themselves: age, gender, ethnicity, educational level, language spoken in the home, and caregiver role. Parents also reported demographic information about their child (e.g., gender, age, and ethnicity). Parents completed this survey orally with a trained examiner who read the questions and wrote down their responses.

Results

Similar to many adult literacy studies, raw scores were used for all analyses because it is unclear whether standard scores are appropriate for adults with low literacy skills (e.g. Greenberg, et al., 2013; Nanda, Greenberg, & Morris, 2010). Another reason for using raw scores was due to the face that one of the child assessments (PALS PreK) does not have standard scores available.

Parent Oral Language and Literacy Performance

As shown in Table 1, there was a fair amount of variability in parents' performance on each of the main variables. However, based on the average reported educational level of the parents (nearly 80% high school graduates, with 56% having attended some college), the data demonstrate that the adults performed lower on these measures than what may have been expected. Specifically, their mean grade equivalency level on word identification was 9.85 ($SD = 5.43$), on word attack was 8.20 ($SD = 5.37$), and on fluency was 10.00 ($SD = 4.5$). Their mean age equivalency level on receptive vocabulary was 15.30 ($SD = 6.26$) and on expressive vocabulary was 15.24 ($SD = 5.37$).

To further explore the variability of the adults' performance on the assessments, analyses were conducted to determine the percentage of adults who were one standard deviation above and below the mean and two or more standard deviations above and below the mean on all the assessments. Within the analyses, educational level was considered to determine if there were differences between low-educated adults (some high school and or graduated high school) and high-educated adults (some college and above). Results indicated that the high-educated group included a greater percentage of participants than the low-educated group who performed one standard deviation above the mean on the assessments (79.7% vs. 66.7%, respectively). Similar results were obtained when looking at the performance of the adults at two or more standard deviations above the mean. The high-educated group included a greater percentage of participants than the low-educated group (55.6% vs. 23.8%, respectively). Likewise, the low-educated group included a greater percentage of participants than the high-educated group who performed one standard deviations below the mean (78.6% vs. 64.9%, respectively) and two or more

standard deviations below the mean (35.7% vs. 18.6%, respectively). Additionally it was noted that parents with higher literacy skill levels included children with higher literacy skills levels and lower parent literacy skill levels included children with lower literacy skill levels.

Child Oral Language and Literacy Performance

As shown in Table 2, there was also a fair amount of variability in children's performance on each of the main variables. Age equivalency means demonstrated that the children performed lower than expected (the average age of the children was four and a half years) on the oral language assessments of receptive vocabulary ($M = 3.11$, $SD = 1.21$) and expressive vocabulary ($M = 3.86$, $SD = 1.05$).

To provide context on the children's performances on the literacy assessments, it is important to note that according to the PALS-PreK manual (Invernizzi et al., 2004), by the end of prekindergarten children's subtest scores should range between 12 and 21 on alphabet knowledge, between 5 and 8 on beginning sounds, and between 7 and 9 on print awareness. There are no developmental ranges provided for how children should perform in the Fall, which is when the children in this study were tested. The children's mean performance on alphabet knowledge ($M = 15.60$, $SD = 9.29$) showed that at the beginning of the school year, many of the children were already performing within the expected developmental range for the end of prekindergarten. The children's performances on phonological awareness ($M = 4.70$, $SD = 3.43$) and print awareness ($M = 3.93$, $SD = 2.16$ demonstrated they were below the developmental range expected for the end of prekindergarten. However, since these scores are an indication of the children's performance at the beginning of prekindergarten, it is unclear

whether or not their Fall phonological awareness and print awareness scores were within developmental expectations.

Relationships Between Parents' and Children's Oral Language and Literacy Skills

Correlations between parents' educational levels, their literacy skills and their children's literacy skills are presented in Table 3. Although significant positive correlations are indicated among many of the parent and child variables, the strength of these associations are small to moderate ($r = .21$ to .45). Parents' educational level positively correlated with all the tested parental literacy skills and with all of the children's literacy skills, with the exception of phonological awareness and print awareness. Parents' word identification and fluency skills were positively correlated with all of the children's literacy skills, with the exception of print awareness. Parents' decoding, receptive vocabulary, and expressive vocabulary skills were positively associated with all of the children's literacy skills, with the exception of phonological awareness.

A hierarchical regression model was carried out to examine whether specific parental literacy skills contributed unique variance to specific child skills. In the regression the children's ages and parents' educational levels were entered before the parental literacy skills because previous research has indicated that both account for significant variance in child performance on emergent literacy measures (e.g., Bingham, 2007; Evans, Shaw, & Bell, 2000; Hood, Conlon, & Andrews, 2008; Hecht et al., 2000; Korat, 2009).

For the children's receptive vocabulary, parents' educational level accounted for the largest amount of variance (15%) followed by the child's age (11%) and parental receptive vocabulary skills (5%) For the

children's expressive vocabulary, child age accounted for the largest amount of variance (20%) followed by parents' educational level (17%) and parental expressive vocabulary skills (6%). For the children's alphabet knowledge, parental word identification skills accounted for the most variance (14%) followed by parents' educational level (12%). For the children's phonological and print awareness, none of the variables accounted for variance. (see Table 4).

Discussion

The main goals of this study were to (1) go beyond self-reported parent educational level to investigate the relationships between specific parent literacy skills and their child's emergent literacy skills (2) to examine whether a predictive relationship exists between the parent and child literacy skills after accounting for child age and parent educational level. Overall, this study's findings showed that relationships do exist between specific parent and child literacy skills.

The results of this study support previous research demonstrating a positive relationship between parents' educational level and their child's emergent literacy skills (e.g., Hecht et al., 2000; Korat, 2009; Magnuson et al., 2009; Tracey & Young, 2002). Findings from this study also extend those previously reported by documenting these relationships when skills are measured directly among both parents and children. Furthermore, the findings differed by specific skill, which may have implications for family literacy programs. For example, in this study, parents' receptive and expressive vocabulary skills accounted for significant variance in their children's receptive and expressive vocabulary skills. This finding aligns with existing literature by supporting the notion that the way parents communicate with their children has direct influences on their children's emergent oral language development. For example, Paris, Morrison, and Miller (2006) describe how children's

vocabularies are dependent upon the frequency and quality of the interactions between parents and their children. Although further research needs to be conducted to depict a causal link between parents' and children's skills, findings from this current study support the notion of developing parent engagement activities that support parent and children's oral vocabularies. Both are amenable to instruction, and therefore could be impactful targets for family literacy programming (Chen et al., 2012). Similarly, parents' word identification skills accounted for significant variance in their children's alphabet knowledge. Further research may want to disentangle the relationship between parents' word identification skills and parents' role in assisting their children with alphabet knowledge.

Conversely, in this study, parents' word attack skills did not account for variance in their children's phonological awareness skills. This association might have been expected because stronger phonological awareness skills support stronger decoding skills (NELP, 2008). However, in this study, parents' ability to decode may not have been related to their children's beginning phonological awareness. It may be that parents were unaware of how to effectively teach phonological awareness skills to their children. Moreover, as a more advanced emergent literacy skill, phonological awareness may not have been the focus of instruction at the beginning of the school year when children were assessed; yet it is a skill that must be taught explicitly in order for children to demonstrate proficiency on direct measures. Finally, another angle to consider is that children's performance, on average, was quite low, with most children scoring below 50% on the task. Therefore, due to these floor effects significant variability in performance could not be achieved. Future researchers may want to explore the relationships using other phonological awareness tasks that may discriminate more at lower levels.

Interestingly, significant relationships were

not observed between parents' educational or performance levels and children's print awareness skills. These findings may reflect the nature of the support that children and families received through ERF. That is, parents were given books, games, workshops, and other materials and resources to use at home to support children's print awareness explicitly. Moreover, children's interactions with parents and other family members around books and print materials prior to prekindergarten may contribute significantly to their print awareness skills, such that development of this specific child skill may not be particularly sensitive to specific parent skills. Thus, all children may have performed similarly on this measure, resulting in less variability in children's performance on the print awareness measure and preventing the emergence of significant correlations.

Conclusions

In sum, this study contributes a nuanced perspective on the contribution of parents' education level to children's early literacy development. In general, the findings indicate that a gross measure like level of educational attainment is not always commensurate with parents' performance on various measures of reading and oral language skills that are known to support early literacy development. Such findings are particularly relevant to family literacy programs that seek to include parent engagement in child-focused literacy activities (Wen et al., 2012). Findings from direct measurement of parents' language and literacy skills can provide insight on impactful areas of focus for these programs.

This study is not without limitations that should be considered in reviewing the findings. The parental skills assessed in this study were limited to those that matched skills that were already assessed among their children. Future research may focus on other parent skills that may support child language and literacy development. Secondly, although the tests

administered to the parents are measures used by other adult literacy researchers (e.g., Davidson & Strucker, 2002; Dietrich & Brady, 2001; Sabatini, Sawaki, Shore, & Scarborough, 2010), they were not developed to capture the strengths and weaknesses of adults who have difficulty with reading, and therefore may or may not have appropriately captured the performance of the adults who had difficulty with reading in this study. Thirdly, the children's participation in ERF classrooms and in state funded prekindergarten programming likely contributed to their performance on the language and literacy measures, as both programs emphasized high quality early language and literacy instruction. It is possible that different findings might emerge among children and families not involved in this kind of early learning programming. Another limitation is due to the generalizability of the findings as the participants in this study were overwhelmingly African American from low-income families living in urban areas. It would be advantageous for future research to investigate if the relationships found in this study are true for other ethnically and culturally diverse participant samples, including those high-risk populations that are important to family literacy researchers and providers (e.g., rural populations; English language learners; families experiencing multigeneraltional poverty; parents of children with disabilities). Future research involving other high-risk populations might focus on the types of schooling experiences the children are receiving (for example, attending formal prekindergarten programs versus not attending formal prekindergarten programs) in addition to other background factors the parents may be faced with which may impact their achievement levels (for example, language barriers).

Additional research is needed to understand underlying factors involved in parental transmission of literacy skills to their child. Although the results of this study indicate a positive relationship among

parents' educational level, their literacy skills, and most of the children's emergent literacy skills, the findings are correlational and causal statements cannot be made without further investigation. Moreover, findings of insignificant relations between parents' skills and children's phonological awareness and print awareness warrant further investigation. For instance, it may be that parent skills that were not measured directly in this study contribute to children's development of these skills. Alternatively, it may be that the measures used in this study for both children and parents were not sensitive enough for significant relationships to emerge at the beginning of the prekindergarten school year. Perhaps different relationships emerge after children have participated in classroom instruction on these very skills. Finally, although the finding of a direct relationship between children and parents' oral vocabulary skills is neither novel nor surprising, it does encourage continued investigation of ways to support and harness parents' oral language abilities in the development of their children's oral language abilities. Given the critical importance of oral language to later literacy achievement in school, this may be a promising area of study for the family literacy researchers. ❖

Dr. Nicole A. Taylor is an Assistant Professor at Spelman College in the Education Studies Program. At Spelman, she works with pre-service teachers and instructs in the areas of Educational Psychology and Reading. Dr. Taylor's research interests include the development of emergent literacy skills in children whose parents are struggling adult readers and the home literacy environment. Dr. Taylor earned her doctorate degree from Georgia State University in Educational Psychology with a concentration in language and literacy. She is also involved with the Prime Time Family Literacy program as a Humanities Scholar.

Dr. Daphne Greenberg is a Distinguished University Professor in the Department of Educational Psychology, Special Education, and Communication Disorders, and the Director of the Adult Literacy Research Center in the College of Education. Her current research focuses on adults who read below the eighth grade level. She is interested in uncovering their strengths and weaknesses, as well as studying the best instructional approaches for them. She has received funding from the Institute of Education Sciences, National Institute of Child Health and Human Development, the National Institute for Literacy, the U.S. Department of Education, the Komen Foundation, and the Department of Defense. She has tutored adult nonreaders and has helped communities develop adult literacy programs.

Dr. Nicole Patton Terry is an Associate Professor at Georgia State University in the Department of Educational Psychology, Special Education, and Communication Disorders, and Executive Director of The Urban Child Study Center in the College of Education and Human Development. Her research interests concern children who struggle to acquire language and literacy skills, in particular children from culturally and linguistically diverse backgrounds and children living in poverty. Much of that work has focused on African American children in preschool–3rd grade who speak nonmainstream dialects of American English and attend urban schools. She completed her graduate studies at Northwestern University.

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Table 1—_Raw Score and Standard Score Performance of Pre-K Parents[a] on Literacy Measures_

Test	Raw score		Grade Equivalent Score	Age Equivalent Score
	Range	*M (SD)*	*M (SD)*	*M (SD)*
PPVT	83-188	154.03 (24.48)	n/a	15.30(6.26)
EVT	65-186	124.32 (30.92)	n/a	15.24(5.37)
WJ Word ID	23-76	61.25 (10.47)	9.85(5.43)	14.68(4.69)
WJ Word Attack	4-32	22.85 (7.60)	8.20(5.33)	13.09(4.73)
WJ Fluency	2-95	2.91 (18.63)	10.00(4.50)	15.69(4.90)

Note. PPVT-III= Peabody Picture Vocabulary Test; EVT = Expressive Vocabulary Test; WJ = Woodcock Johnson; [a] n = 96.

Table 2—_Raw Score and Standard Score Performance of Pre-K Children[a] on Literacy Measures_

Test	Raw score		Age Equivalent Score
	Range	*M (SD)*	*M (SD)*
PPVT	8-86	44.37 (16.65)	3.11 (1.21)
EVT	25-65	40.46 (8.00)	3.86(1.05)
Sounds	0-10	4.70 (3.43)	n/a
Alphabet	0-26	15.60 (9.30)	n/a
Print Awareness	0-9	3.93 (2.16)	n/a

Note. PPVT = Peabody Picture Vocabulary Test; EVT = Expressive Vocabulary Test; Sounds = Phonological awareness; Alphabet = Alphabet Knowledge; [a] n = 96

Table 3—*Correlations among Parents' Literacy Skills and their Children's Literacy Skills*

	1	2	3	4	5	6	7	8	9	10	11
1. Parent Education Level	--										
2. Adult Word ID	.40**	--									
3. Adult Word Attack	.23*	.76**	--								
4. Adult Fluency	.46**	.79**	.70**	--							
5. Adult PPVT	.30**	.61**	.70**	.64**	--						
6. Adult EVT	.23*	.46**	.57**	.53**	.76**	--					
7. Child PPVT	.38**	.31**	.21*	.37**	.43**	.27**	--				
8. Child EVT	.39**	.32**	.23*	.36**	.43**	.37**	.82**	--			
9. Child Alphabet	.34**	.31**	.27**	.36**	.45**	.43**	.49**	.55**	--		
10. Child Sounds	.20	.28**	.16	.27**	.16	.05	.41**	.43**	.39**	--	
11. Child Print Awareness	.16	.14	.21*	.18	.25*	.31*	.35**	.41**	.50**	.24*	--

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

Table 4— *Hierarchical Regression Assessing Prediction of Children's Skills*

Step and Predictor	*F* change	*r²* change	*β*
Receptive Vocabulary (PPVT)			
1. Child Age	11.05	.11*	.32*
2. Parent educational level	19.15	.15*	.39*
3. Adult PPVT	3.37	.05*	.26*
Adult EVT			-.02
Expressive Vocabulary (EVT)			
1. Child Age	23.50	.20*	.45*
2. Parent educational level	24.15	.17*	41*
3. Adult EVT	5.12	.06*	.22*
Adult PPVT			.06
Alphabet Knowledge			
1. Child Age	1.75	.02	.14
2. Parent educational level	12.28	.12*	.34*
3. WJ Word ID	3.47	.14*	.07
WJ Word Attack			.16
WJ Fluency			.02

Note. * p < .05

PIAAC Skills and Economic Inequality

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Abstract

Mixed findings characterize the literature on skills and economic distributions within and across countries. The Programme for the International Assessment of Adult Competencies (PIAAC) offers new, internationally comparable data on literacy, numeracy, and digital problem-solving skills that can be combined with wage information. This paper presents statistical analyses, aimed at quantifying the contributions of observable and unobservable contributors to earnings inequality. Substantial inequality is documented across countries and skill measures, thus reinforcing previous findings that skill, even by the broader definition used here, is only a partial explanation for differences in economic inequality across countries. The paper concludes with future research possibilities that can further understandings of inequality dynamics within and across nations.

Correlations between skill levels and economic distributions have been hypothesized in academic literature and popular discussion alike. The newly-released first wave of the Organisation for Economic Co-operation and Development (OECD)'s Programme for the International Assessment of Adult Competencies (PIAAC) provides a distinctive opportunity to study how the levels and distributions of a wide variety of adult skills, in the areas of literacy, numeracy, and digital problem solving, relate to wage (or earnings) inequality in an international context characterized by both economic forces of demand and supply and by institutions.

Studies of the relationship between skills and inequality have been popular in recent decades. Early work (e.g., Katz & Murphy, 1992; Blau & Kahn, 1996) focused on educational attainment, or combinations of education and other experience variables as proxies for skill due to the limited availability of comparable skill data across countries. More recent work has critiqued the use of higher education as a skill measure, most especially when used across international contexts where educational and political institutions vary (e.g., Leuven, Oosterbeek, & Van Ophem, 2004). As a result, research has moved

toward skill surveys. While this literature finds evidence of some correlations between skills and wage inequality, more detailed and comprehensive skill measures are needed.

The primary purpose of this article is to revisit the effect of skills (and its distribution) on economic inequality both within and across countries using PIAAC data, which provide more realistic ways of defining and measuring skills than had been possible previously. This has implications for understanding the effects of education and training programs and other policies affecting lifelong learning.

The next section discusses relevant literature on skills and earnings inequality using data collected before PIAAC as well as new research on wages that uses PIAAC. The subsequent sections present the statistical methodology used and the results. The article ends with a discussion and conclusions section.

Literature Review

This article is part of a larger discussion on the use of cross-country surveys. In this section, I briefly examine some of these surveys and the state of economic research on inequality.

Previous Studies and Data on Skills and Earnings Inequality

Using the International Adult Literacy Survey (IALS) for 11 countries, Devroye and Freeman (2001) document positive (albeit small) correlations between skill inequality and earnings inequality. They also find that earnings inequality is more prevalent within, not across, skill groups. Consistent with these findings and also using IALS, Blau and Kahn (2005) compare the United States to eight other OECD countries and argue that differences in wage rates and unobserved factors are more important determinants of earnings inequality than are differences in skill distributions.

Leuven et al. (2004) use IALS (compared with other data sources) to show that the variation among

groups with different skills is due to the lack of supply of specific skilled groups rather than the acquisition of the skill itself. In contrast to Devroye and Freeman (2001) and Blau and Kahn (2005) that use these same data, Leuven et al. (2004) use different economic modeling techniques to document this larger impact of supply and demand factors. This methodology, however, involves making a large number of market assumptions which may not be realistic in all country contexts.

Previous Labor Market Research Using PIAAC

Hanushek, Schwerdt, Wiederhold, and Woessmann (2015) use the PIAAC data to document high lifetime labor market returns related to numeracy, literacy, and problem-solving skills. Hanushek et al. (2015) use both skill levels and educational attainment in their analysis. They report statistically and economically significant relationships between skill and wage levels across the countries surveyed in PIAAC. Hanushek et al. (2015) document labor market returns to numeracy, literacy, and problem-solving skills expressed as levels. In contrast, this article highlights *variability* in labor market returns as it relates to both level and variability in skill sets. This article therefore is significant for understanding the relevance of targeting specific skill improvement programs and policies as a way to improve adult learning and economic outcomes.

Methodology

This section describes the data and skill measures used. It then presents the statistical analyses that were employed.

Description of Skill Measures

Primary data come from the public-use PIAAC

data files. The main aggregate dataset is based on 24 OECD countries which participated in the first round of PIAAC between 2008 and 2013. Data for 22 countries are included in the international public-use dataset from the OECD. Cyprus is available separately from the German GESIS Data Catalogue (Michaelidou-Evripidou et al., 2014). Australian data are not publicly accessible. The other countries that participated are Austria, Belgium (Flanders), Canada, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, South Korea, Netherlands, Norway, Poland, the Russian Federation, Slovak Republic, Spain, Sweden, the United Kingdom (England and Northern Ireland), and the United States. The Russian Federation is included in what follows, though results should be taken with caution due to concerns regarding the validity of preliminary data as noted in Hanushek et al. (2015) and other sources.

There are three primary skill measures in PIAAC. These are literacy, numeracy, and problem solving in technology rich environments (PSTRE). The OECD (2013b) defines literacy as:

> *'Understanding, evaluating, using and engaging with written texts to participate in society, to achieve one's goals, and to develop one's knowledge and potential'* (OECD, 2012b). It is intended to encompass the range of cognitive strategies (including decoding) that adults must bring into play to respond appropriately to a variety of texts of different formats and types in the range of situations or contexts in which they read (p. 3; italics in the original).

Numeracy is:

> *"The ability to access, use, interpret and communicate mathematical information and ideas, in order to engage in and manage the mathematical demands of a range of situations in adult life"* (OECD, 2012b). Numeracy is further specified

through the definition of 'numerate behavior,' which involves managing a situation or solving a problem in a real context by responding to mathematical information and content represented in multiple ways…numeracy relates to a wide range of skills and knowledge (not just arithmetic knowledge and computation), a range of responses (which may involve more than numbers), and responses to a range of representations (not just numbers in texts) (OECD, 2013b, pp. 3-4; italics in the original).

In contrast to previously published skill surveys, PIAAC adds problem solving in technology-rich environments as a third dimension of skill. It is defined as:

> *"Using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks."* The first wave of PIAAC focused on *"the abilities to solve problems for personal, work and civic purposes by setting up appropriate goals and plans, and accessing and making use of information through computers and computer networks"* (OECD, 2012b). The PSTRE domain of PIAAC covers the specific class of problems people deal with when using information and computer technology (ICT)…PSTRE represents a domain of competence which involves the intersection of the set of skills that are sometimes described as "computer literacy" (i.e., the capacity to use ICT tools and applications) and the cognitive skills required to solve problems (OECD, 2013b, p.4; italics in the original).

Schleicher (2008) writes that computer literacy is and will become even more important in the

workplace and will possibly also affect wages. He goes on to note that, "Policy-makers worried about social inequality and exclusion have a need to know the size of these effects and which population sub-groups are most at risk" (p. 637). This makes the addition of this dimension very relevant.

Data Analysis

Methods to examine economic inequality using country-level microdata have differed in the economics literature. The terms wage and earnings inequality are used interchangeably here to denote economic inequality. My analysis separates the relative importance of (1) different levels of observable characteristics such as skill and other human capital differences across countries, (2) different returns to skill and other observable characteristics across countries, and (3) different unobservable factors (i.e., residuals) in the distribution of earnings across countries for three different inequality statistics. Separating the effects should provide intuition as to what the drivers of differences in earnings inequality are in the international context.

Choice of the Baseline Country

Coefficients and residuals from the U.K. data are used as the benchmark reference prices and the residual distribution respectively. Alternately, an "average" could serve as the baseline, but this is harder to interpret in terms of real world differences across countries since all results would then be relative to a counterfactual country with unclear country characteristics. Devroye and Freeman (2001) discuss particularly high skill and high wage inequality in the English speaking countries of Canada, the U.K., and the U.S., patterns that are also evident in PIAAC as documented above. Given data availability issues in PIAAC, the U.K. stands alone from this group as having all necessary variables in order to serve as the benchmark country for analysis (since the U.S. and

Canada do not have continuous wage information in the international public-use data) and is chosen for this purpose as it is an outlier in the direction of high inequality. This informs a prior expectation as to the directions of expected identified differences across the countries and provides context for interpretation of results.

Results

The analysis starts with summary statistics of skill and wage distributions. General determinants of wages are then estimated and used to compute the components for each of three inequality statistics.

Summary Statistics of Skill Distributions

Table 1 shows how PIAAC skills vary within and across countries. For each of these categories the table shows means and standard deviations (sd) of the skill level measures as well as the 50-10 and 90-50 skill differentials (differences of the 50th and 10th and the 90th and 50th skill percentiles of the skill distribution respectively) for literacy, numeracy, and problem solving. A low (high) differential for a skill gap by one of these measures corresponds to limited (substantial) inequality of skills in the lower or higher part of the skill distribution. The differentials can be interpreted in terms of measuring inequality in the lower skill (50-10) and higher skill (90-50) populations of each country.

There is notable variation in skills by the literacy, numeracy, and problem solving across countries (as measured by means) and within countries (as measured by standard deviations and percentile differentials). As can be seen in Table 1, literacy skills vary from a low average of 250.5 skill points in Italy to an average high of 296.2 in Japan. Numeracy skills vary from a mean of 245.8 (Spain) to 288.2 (Japan). Problem-solving skills vary from 274.9 (Poland) to 294.0 (Japan). Fewer countries are listed in Table 1 for problem solving since problem-solving skills

assessments were not administered in all countries. These averages tell little about the extent and nature of inequality of skills within and across countries.

Standard deviations, on the other hand, summarize the spread of the distributions of skills within countries. For literacy skills, standard deviation varies from a low amount of inequality (39.7 skill points in Japan) to a high (50.7 skill points) in Finland. For numeracy, the lowest amount of inequality by this measure is found to be in the Russian Federation (42.0 points) and the highest is in the U.S. (57.0 points). For problem-solving skills, the range is a low in the Slovak Republic (36.9 points) to a high in the Russian Federation (49.0 points). Thus, the dispersion of skills indicates substantial differences within and across countries.

Substantial variation in skill distributions also is noticeable in the percentile distributions for literacy, numeracy, and problem-solving skills. In contrast to the standard deviation of skill levels which gives an overall measure of spread around the mean of the skill distribution, the 50-10 and 90-50 skill differentials separately measure inequality of the lower and higher skilled populations within each country. The literacy inequality in the lower skill population (50-10 skill differential) varied between 55.3 skill points in the Czech Republic to 69.9 skill points in France. Meanwhile, the inequality among the higher skilled (90-50 skill differential) was 42.9 literacy skill points in the Slovak Republic, 56.2 points in Canada, and 57.0 points in the U.K. and 57.1 in the U.S. In terms of numeracy, Canada, the U.K., and the U.S. also stand out as having the highes, inequality of skills in the upper parts of these country's skill distributions. Furthermore, in numeracy, both lower and upper skill inequality measures are higher than those in literacy for these countries. Canada, the U.K. and the U.S., however, are not outliers in terms of problem-solving skills. Instead, five other countries emerge by that skill measure as having higher upper

skill inequality (Czech Republic, Estonia, Germany, Poland, and the Russian Federation).

Across all countries studied and across all three skill measures those in the lower skill population differ more from the average than those in the upper skill population. This can be seen in terms of larger 50-10 differentials than 90-50 skill differentials. These results suggest that low skill inequality is higher than upper skill inequality by these measures. Digital problem-solving skills did not differ as much as the other two domains across the upper and lower skill inequalities on average. Only for Japan was there a larger difference between the 50-10 and 90-50 skill differentials for problem-solving skills than for both literacy and numeracy. The difference for problem-solving skills was also higher than that for literacy (but not for numeracy) for Finland and the Russian Federation. The variation of magnitudes across skill measures demonstrates the extent to which the three PIAAC skill measures capture different aspects of skill strengths.

Earnings Inequality

Aggregate earnings are difficult to use for empirical studies of inequalities in labor economics since these measures may represent differences in wages across economic agents, differences in hours worked, or both. The PIAAC data, however, includes a wage measure that is based on raw data of *hourly* earnings excluding bonuses for wage and salary earners, purchasing power parity (PPP) adjusted to U.S. dollars. Hourly earnings are not available for all countries. The focus on this paper therefore is on earned income (instead of income inequality more generally) since earned income is more likely directly related to skill than is income from other sources (e.g., inheritances).

Figure 1 illustrates log wage differentials based on 50-10 and 90-50 percentiles overall. As in the cited literature, the natural logarithm is used to scale

wages. The 50-10 log wage differential describes wage inequality between the bottom 10% of earners and those in the middle of the distribution (at the median), and the 90-50 log wage differential does the same for the top 90 % of earners relative to the median earner. Just as the 50-10 and 90-50 skill differentials can be interpreted in terms of measuring inequality in the lower skill and higher skill populations, the 50-10 and 90-50 differentials for log wages can be interpreted as measuring "inequality of the poor" (defined as the lower half of the distribution, excluding the unemployed) and "inequality of the rich" (for the upper half of the wage distribution). The figure therefore illustrates wage inequality within and across countries.

Substantial wage inequality within and across countries is evident. Across countries in Figure 1, wage inequality is highest in Korea, Japan, Estonia, and Cyprus at the top of the wage distributions with 90-50 differentials approaching or exceeding one (the point at which the 90th percentile earner would make 100 % more than the median earner).

Unlike the skill inequality measures in Table 1 which had the feature that of more inequality at the bottom of the distribution than the top, wage inequality for the rich (the upper end of the wage distribution) is shown in Figure 1 to be higher than wage inequality for the poor (the lower end of the wage distribution) across most countries.

Contribution of Skills to Economic Inequality

Major results from the decomposition approach for the impacts of skills alone are presented in Table 2. Since decompositions are based on wage equations that control for skills, the sample is restricted to those countries for which all data (e.g., hourly wages and each of the skill measures) are available.

Results are presented separately for each country

relative to the base of the U.K. The numbers in the first column of Panel A of Table 2 indicate how each country compares to the U.K. in terms of the total spread of log wages (total standard deviation). For example, a finding is that the Czech Republic has a spread of wages that is approximately six % (0.06 log points) smaller than the U.K, while Estonia has a spread of wages that is approximately seven % (0.07 log points) higher than the U.K. Overall, the spread of wages between the countries and the U.K. vary from being lower in Finland by about 15 % (-0.15 log points) to higher in Russia by about 31 % (0.31 points).

The first column of each panel indicates the total difference between each country and the baseline country, which as noted is set as the U.K. The total difference between the indicated country and the U.K. in each of the three panels is then split into three parts. The first is the portion of the difference that is due to observable quantities of skills. These "Observable Quantities" are shown in the second column. "Observable Returns" in the third column pertains to the portion of the difference across countries that is due to differing "prices" or returns to the various observable characteristics that are included in the model. Finally, the "Unobservables" component is that portion of the total difference across countries that is the remainder. This appears in the fourth column and may be interpreted as including differences in country-level institutions and cultural and social norms that are not reflected in the independent variables in the regressions that are being decomposed. Formal equations and additional technical details are available in Pena (2015).

In this first specification, the only observable variables in the model are the three skill measurements for literacy, numeracy, and digital problem-solving abilities and therefore the observable quantities component of the total difference across countries relative to the base country of the U.K. is interpreted

in terms of the impacts of quantities (levels) of skills alone (apart from other demographic and work-related characteristics). This component is universally negative in terms of a contribution to total differences in the spread (standard deviation) of wages relative to the U.K. Since several of the total differences are positive, this indicates that negative observable quantities contributions are more than offset by positive components elsewhere. This suggests that many countries have less inequality due to the observable skill factors that are included in the model than does the base country. Instead, these countries are characterized by large positive contributions of unobservable factors to inequality (e.g., institutions, other demographic factors that have been excluded, etc.). In some cases, however, this is partially offset by the *rates* at which skills contribute to total cross-country differences (as indicated by the observable returns component).

Overall, the importance of differences in unobservables in determining wage inequality across countries is found to be substantial. Unobservable components, for example, explain approximately two-thirds of the total difference in the spread of wages (-0.0372/-0.0564) between the Czech Republic and the U.K. while the levels of and returns to skills (observable factors in this model) explain only one-third. Unobservable components contribute even more and in some cases much more, to each of the other country-U.K. pairs. Skills, even when measured comprehensively as in PIAAC, are found to contribute little on their own to economic inequality across nations. Eight countries show more wage inequality than the U.K. in terms of the spread of wages as indicated by the standard deviation, and only five show less wage inequality overall than the U.K.

The numbers in the first columns of Panels B and C show how each country compares to the U.K.

in terms of inequality of the poor (50-10 wage gap) and inequality of the rich (90-50 wage gap). For the Czech Republic, for example, the inequality of the poor is approximately five % lower than that for the U.K. and inequality of the rich is approximately 19 % lower than that for the U.K. Similar to the overall spread of wages, inequality in the lower part of the wage distribution (50-10) is higher for eight countries and lower for five countries relative to the U.K. Unlike the overall spread of wages, however, wages in the upper part of the wage distribution (90-50) are higher for only six countries relative to the U.K. In the Netherlands and the Russian Federation, wage inequality of the rich is less than that in the U.K. while wage inequality of the poor is greater than that of the U.K. This pattern is not evident from the examination of standard deviation alone.

The decomposition presents the portion of these gaps (the 50-10 and 90-50 log wage differentials) that is due to observable levels of independent variables in the model and rates of return of these variables, and due to unobservable factors that are not included in the model. Substantial variability in inequality across countries is seen in the range of total differentials reported in the first columns of these panels. In all country cases, the unobservable component portions of the total differences are large consistent with the results for the overall spread of the wage distribution in Panel A. This indicates that differences in the regression error across country models are critical for generating the total differences that are observed in the wage distributions and that this is true for both the lower and upper parts of the wage distribution in many countries. For inequality of the poor, unobservable factors contribute at least 50 % (lower bound is Japan) to the total differences in inequality across countries. For inequality of the rich, unobservable factors contribute at least 49 % (lower bound is the Czech Republic as in the standard deviation of log wages results).

The finding of a large portion of the total difference between measures of inequality in many countries relative to the U.K. that is due to unobservable components is perhaps unsurprising. Blau and Kahn (2005) concluded similarly using the IALS data, and suggested in their concluding analysis that unobserved institutional factors are often of greater importance for understanding inequality than are the price and quantity effects in standard economic theory of supply and demand. Before repeating this conclusion, however, it is worthwhile to examine other variables that have been identified as important in earning determination.

Contributions of Non-skill Determinants to Earnings Inequality

In the second major specification, control variables are drawn from age groupings (four dummy variables for categorical age ranges), education levels (in years), experience levels (in years), experience squared divided by 100, and skill measures for all three of literacy, numeracy, and problem solving. Variation in returns to skill by age in PIAAC is documented in Hanushek et al. (2015). Since the sample here maintains larger country-specific sample sizes by not restricting to prime-aged workers, controls for age are included. The age groupings are those defined by PIAAC in the international public-use data. Specifically, binary variables are included for those 25-34, those 35-44, those 45-54, and those 55 plus. The excluded category corresponds to those 24 years or age or younger. Experience squared is divided by 100 for the purpose of scaling the coefficients to ease in the interpretation of marginal effects. The regressors are combinations of those in Blau and Kahn (2005) and Hanushek et al. (2015).

Summary statistics in the form of means and standard deviations for major control variables aside from skills are presented in Table 3. The first columns give the fraction of respondents in each country in each of the age groupings that are defined by a series of dummy variables. The age distribution is found to be roughly similar across countries by these measures. Education, however, is more spread out. Average education varies from 10.5 years in Italy to 14.5 years in Ireland. Average work experience varies, from 13.2 years in South Korea to 21.0 years in Denmark.

Table 4 repeats the decomposition approach for linear regressions in which the observable distributions of literacy, numeracy, and problem-solving skills are examined alongside those associated with educational attainment measured by years of schooling, employment experience and its square, and of the categorical dummy variables for age. Given the previous descriptive results that skills and education levels are not perfectly correlated (and often characterized by low correlations), both types of regressors are included, along with the other demographic and human capital variables noted. Some countries are excluded due to missing education data. In the presence of these added control variables, the observable quantities component now refers to the effects of the levels of all demographic and work-related characteristics that are included in the regressions underlying the decomposition and the observable returns component is based on the rates of returns of each of these observable factors.

In 11 out of 12 country pair cases in Panel A for the standard deviation of log earnings (Czech Republic being the exception), unobservable factors are found to be of greater importance than are observable quantities (e.g., skill, other schooling, etc.) and returns to these factors (e.g., wages as functions of observable skill, etc.). Unobservables only account for 23 % of the total difference between the Czech Republic and the U.K. in the standard deviation of earnings. This is compared to an average unobservables contribution of approximately 89 % across the countries studied relative the U.K. This later number is roughly similar to findings in previous

literature using decomposition approaches to study economic inequality.

A similar pattern is evident for nine out of 12 country pairs in Panel B for differences in the 50-10 log wage differential, and for eight out of 12 country pairs in Panel C for differences in the 90-50 log wage differential. Sensitivity analysis for subpopulations and differences in variable definitions are included in the longer working paper version (Pena, 2015).

Discussion and Conclusions

The recent release of cross-country PIAAC data, with the availability of three unique measures (for literacy, numeracy, and digital problem-solving abilities respectively) allowed for analysis of the effects of broadly-defined 21st century skills in the current international economy on inequality both within and across countries. Substantial inequality is documented across countries and skill measures, thus reinforcing previous findings that skill by itself is only a partial explanation for vast differences in observed patterns of wage and earnings inequality across countries. In other words, I find that cognitive skill as measured by the three PIAAC measures has only low correlations with income inequality. Instead, differences in returns to skill (i.e. wages) and differences in unobserved factors (presumably institutions and other country-level factors) have higher correlations overall with earnings inequality. It is important to note that this analysis is based on the spread of the earnings distribution as opposed to the levels. In other words, my results are applicable to differences in income as opposed to levels of income.

Summary statistics suggest that both skills and wages differ substantially within and across countries. Skills tend to be more variable in the lower parts of the skill distributions. Wages, on the other hand, tend to be more variable in the upper parts of the wage distribution. In other words, there are large differences among those with "low" skills and also

large differences among those with "high" wages. Econometric modeling was used to examine the importance of differences in levels of skills and other determinants of wages, in rates of return to these levels of skills, and in unobservable (unmodeled) features for understanding the sources of economic inequality across countries.

Major results are consistent with previous studies of cognitive skills and inequality. This analysis illustrates that unobservable factors matter more so than demand and supply factors such as skill levels and wages. Unobservable factors may include things like labor and product market institutions that vary across countries. The addition of new problem-solving skill measures does not substantially reduce the importance of unobservable factors when results are compared to previous literature. This, by itself, is an important result since it suggests that missing human capital variables in previous datasets, such as IALS, are not in fact primary drivers of the large unobservable factor component noted in previous literature. In all, this research confirms that skills are only a small part of the story of cross-country differences in economic inequality. One caveat, also noted in Hanushek et al. (2015), is that unmeasured non-cognitive skill may still be an important omitted variable. Type of job also may matter since returns to skill and other observable characteristics plausibly vary across job categories especially in cases where employer-specific human capital is of importance.

While the results of the analysis reveal substantial differences in the extent and determining factors of inequality within and across countries, it is beyond the scope of this paper to determine which institutional factors are causally related to wage inequality across nations. Hanushek et al. (2015), however, identify several indicators available from the OECD (union density, employment protection legislation, statutory minimum wages, product-market regulation, and public-sector worker share)

that in their case are related to returns to skill. It is reasonable that these same factors also may be related to wage inequality. Furthermore, Blau and Kahn (2005) hypothesize that their similar results may be related to differences in collective bargaining arrangements across countries. Therefore, labor market regulations may be particularly important in explaining income inequality. Additional research is warranted to pinpoint these details.

A major implication of this analysis is that while individuals who participate in human capital improvement programs may themselves experience labor market rewards associated with skill, skill by itself is not found to be a major determinant of wage *inequality* outcomes within and across countries. It is important to stress that these findings are not in opposition to each other. Instead, average returns to skill overall may be shifting while the distribution of returns to skill around this average stays relatively constant. This means that individuals may be doing better (in comparison to say being in poverty by an absolute definition) but these same individuals may continue to hold the same relative position in the overall wage distribution.

Since skill measures, even those as comprehensive as those offered by PIAAC, by themselves are not found to be a substantial component of observed differentials in earnings inequality across countries, there may be limits to the use of education and training opportunities in reducing inequality. The same can be said in terms of investments targeting the improvement of returns to skills. This is not to say, however, that education and training opportunities are unimportant for the determination of inequality. Instead, educational opportunity differences within and across countries may have real effects on the overall shape of the wage distribution (alongside non-cognitive skill and other unobservable factors at the individual and country levels) and may not be perfectly reflected in observable skill and education

levels. This indicates that while cognitive skills are limited in terms of translating into wage inequality, institutions in general, as opposed to supply and demand factors alone, may be major contributors to the wage structure and distribution within and across economies.

There are major limitations in the current public-use PIAAC data. Complete analysis is not possible for several countries due to data limitations in terms of problem-solving skills, in terms of wages, and in terms of basic demographics such as years of education. Since specific variable availability differs across countries, several countries were dropped for certain parts of the analysis. As a result, final results are not perfectly comparable with previous studies which focused on different sets of countries but are applicable to some countries with similar characteristics in the most recent time period. New waves of data may fill some of these gaps and allow for further cross-country comparisons. ❖

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Table 1—*Distribution of Individual Average Test Scores, by Country*

	Literacy				Numeracy				Problem Solving			
			Percentile Differentials				Percentile Differentials				Percentile Differentials	
Country	mean	sd	50-10	90-50	mean	sd	50-10	90-50	mean	sd	50-10	90-50
Austria	269.45	43.96	59.6	50.51	275.04	49.29	65.3	55.94	283.98	38.01	52.17	45.91
Canada	273.34	50.43	69.39	56.21	265.24	55.6	75.81	62.69	282.29	45.23	63.08	52.96
Czech Republic	274.01	40.79	55.28	47.06	275.73	43.72	60.04	50.9	282.99	44.53	60.96	53.42
Denmark	270.79	47.72	66.38	49.88	278.28	51.23	68.63	57.47	283.08	42.39	59.55	48.99
Estonia	275.88	44.4	60.85	50.99	273.12	45.54	60.46	53.46	277.62	42.67	58.2	51.57
Finland	287.55	50.67	68.32	55.16	282.23	52.21	68.44	59.2	289.37	42.41	59.82	49.36
France	262.14	49.02	69.91	54.03	254.19	56.17	79.41	62.39	.	.	.	.
Germany	269.81	47.4	67.16	54.4	271.73	53.07	74	59.09	282.58	43.7	59.95	52.38
Ireland	266.54	47.19	63.57	52.14	255.59	53.66	70.05	59.28	276.8	40.16	54.56	48.45
Italy	250.48	44.69	60.05	53.69	247.13	49.99	66.39	59.87	.	.	.	.
Japan	296.24	39.71	55.72	44.06	288.17	43.98	59.17	50.89	294.03	44.46	62.65	50.06
Korea	272.56	41.69	57.5	46.31	263.39	45.64	63.29	51.3	282.97	37.64	51.92	44.86
Netherlands	284.01	48.39	69.73	51.89	280.35	51.07	71.14	53.97	286.4	41.71	57.99	48.76
Norway	278.43	47.02	65.33	49.97	278.3	54.21	73.87	57.9	286.49	40.25	56.91	45.42
Poland	266.9	47.98	65.81	55.11	259.77	50.72	68.66	59.2	274.92	48.35	65.15	57.69
Slovak Republic	273.85	40.07	56.49	42.88	275.81	47.6	66.12	51.04	281.08	36.9	49.3	44.38
Spain	251.79	49.03	68.23	55.29	245.82	51.32	72.53	57.08	.	.	.	.
Sweden	279.23	50.56	69.38	52.86	279.05	54.87	74.1	58.74	287.77	43.96	62.87	49.95
United States	269.81	49.19	68.99	57.14	252.84	57.03	78.18	66.66	277.44	43.5	58.67	52.47
Sub-national entities												
Flanders (Belgium)	275.48	47.08	67.96	51.11	280.39	50.59	70.71	57.13	280.76	43.84	61.99	51.13
England/N. Ireland (UK)	272.46	48.97	66.41	57.04	261.73	54.88	73.33	64.38	280.33	42.05	57.13	51.44
OECD Average	272.42	46.47	64.38	51.8	268.76	51.07	69.5	57.56	.	.	.	.
Partners												
Cyprus	268.84	40.27	56.39	46.33	264.63	46.84	62.67	53.51	.	.	.	.
Russian Federation	275.23	42.88	60.25	49.75	269.93	41.98	55.65	49.06	276.25	48.98	66.12	58.15

Source: PIAAC and author's calculations.

Table 2—*Decomposition Results, Base Category: U.K., Skills Only as Regressors*

	Total Difference	Observable Quantities	Observable Returns	Unobservables
Panel A: Standard Deviation of Log Wage				
Czech Republic	-0.0564	-0.0060	-0.0133	-0.0372
Denmark	-0.0870	-0.0117	-0.0111	-0.0642
Estonia	0.0668	-0.0076	-0.0018	0.0761
Finland	-0.1460	-0.0068	-0.0162	-0.1229
Ireland	0.0929	-0.0034	-0.0022	0.0985
Japan	0.0864	-0.0114	0.0198	0.0780
Korea	0.1668	-0.0172	0.0036	0.1804
Netherlands	0.1013	-0.0077	-0.0137	0.1227
Norway	-0.0896	-0.0090	-0.0091	-0.0715
Poland	0.0631	-0.0074	0.0064	0.0641
Slovak Republic	0.2134	-0.0137	-0.0084	0.2356
Sub-national entities				
Flanders (Belgium)	-0.1303	-0.0041	-0.0174	-0.1088
Partners				
Russian Federation	0.3129	-0.0164	-0.0114	0.3407
Panel B: 50-10 Log Wage Differential				
Czech Republic	-0.0549	0.0630	-0.0338	-0.0841
Denmark	-0.0366	0.0261	-0.0233	-0.0394
Estonia	0.1640	0.0560	0.0039	0.1042
Finland	-0.1392	-0.0282	0.0071	-0.1181
Ireland	0.0189	-0.0051	-0.0208	0.0449
Japan	0.0348	0.0007	0.0166	0.0175
Korea	0.2336	0.0444	-0.0088	0.1980
Netherlands	0.0553	-0.0045	-0.0134	0.0732
Norway	-0.1217	-0.0233	0.0087	-0.1071
Poland	0.0959	0.0134	0.0033	0.0792
Slovak Republic	0.0024	0.0278	-0.0270	0.0016
Sub-national entities				
Flanders (Belgium)	-0.1317	0.0354	-0.0527	-0.1144
Partners				
Russian Federation	0.2404	0.0014	-0.0047	0.2437

Table 2—*Decomposition Results, Base Category: U.K., Skills Only as Regressors (continued)*

	Total Difference	Observable Quantities	Observable Returns	Unobservables
Panel C: 90-50 Log Wage Differential				
Czech Republic	-0.1861	-0.0649	-0.0309	-0.0903
Denmark	-0.2821	-0.0495	-0.0408	-0.1918
Estonia	0.0964	-0.0252	-0.0063	0.1280
Finland	-0.1658	0.0119	-0.0510	-0.1268
Ireland	0.0181	-0.0079	-0.0073	0.0333
Japan	0.1158	-0.0343	0.0483	0.1018
Korea	0.2475	-0.0611	0.0230	0.2857
Netherlands	-0.1304	-0.0326	-0.0139	-0.0840
Norway	-0.2366	-0.0170	-0.0276	-0.1920
Poland	0.0477	-0.0251	0.0150	0.0578
Slovak Republic	0.0046	-0.0434	-0.0118	0.0599
Sub-national entities				
Flanders (Belgium)	-0.2082	-0.0218	-0.0223	-0.1640
Partners				
Russian Federation	-0.0492	0.0154	-0.1181	0.0534

Source: PIAAC and author's calculations.

Table 3—*Summary Statistics of Major Demographic and Work-Related Characteristics*

	ages 24 and less=1		ages 25-34=1		ages 35-44=1		ages 45-54=1		55 plus=1		education (years)		experience (years)	
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Austria	0.16	0.37	0.19	0.39	0.22	0.42	0.24	0.43	0.19	0.39	.	.	20.01	12.6
Canada	0.17	0.38	0.2	0.4	0.2	0.4	0.23	0.42	0.21	0.4	13.21	2.72	19.29	12.7
Czech Republic	0.16	0.37	0.22	0.41	0.22	0.41	0.18	0.39	0.22	0.41	12.95	2.66	19.99	12.92
Denmark	0.17	0.38	0.18	0.38	0.22	0.41	0.22	0.41	0.22	0.41	12.47	2.72	20.96	13.65
Estonia	0.18	0.38	0.21	0.41	0.21	0.4	0.2	0.4	0.2	0.4	12.11	2.69	18.96	12.99
Finland	0.17	0.38	0.19	0.39	0.18	0.39	0.21	0.41	0.25	0.43	.	.	19.04	13.64
France	0.17	0.38	0.19	0.39	0.21	0.41	0.21	0.41	0.22	0.41	11.18	3.58	19.45	13.18
Germany	0.16	0.36	0.18	0.38	0.22	0.41	0.25	0.43	0.2	0.4	.	.	19.21	13.02
Ireland	0.17	0.38	0.24	0.43	0.23	0.42	0.19	0.39	0.16	0.37	14.48	3.22	17.04	11.97
Italy	0.14	0.35	0.19	0.39	0.24	0.43	0.22	0.41	0.2	0.4	10.51	3.85	18.14	12.34
Japan	0.14	0.35	0.19	0.39	0.24	0.42	0.19	0.39	0.24	0.43	12.94	2.41	18.81	12.68
Korea	0.16	0.37	0.2	0.4	0.24	0.43	0.23	0.42	0.17	0.37	12.6	3.18	13.18	10.75
Netherlands	0.17	0.37	0.18	0.39	0.21	0.41	0.23	0.42	0.21	0.41	13.12	2.79	18.74	12.39
Norway	0.18	0.39	0.2	0.4	0.22	0.41	0.21	0.41	0.2	0.4	13.94	2.61	18.68	12.77
Poland	0.18	0.38	0.23	0.42	0.19	0.39	0.2	0.4	0.21	0.41	12.48	3.06	17	12.45
Slovak Republic	0.18	0.38	0.23	0.42	0.2	0.4	0.2	0.4	0.2	0.4	12.94	2.8	19.12	12.52
Spain	0.12	0.32	0.21	0.41	0.25	0.43	0.22	0.42	0.2	0.4	11.3	3.55	17.4	12.15
Sweden	0.19	0.39	0.19	0.39	0.2	0.4	0.2	0.4	0.22	0.41	12.01	2.54	19.31	13.84
United States	0.19	0.39	0.2	0.4	0.2	0.4	0.22	0.41	0.19	0.39	13.27	3.07	19.4	13.19
Sub-national entities														
Flanders (Belgium)	0.15	0.36	0.18	0.38	0.2	0.4	0.23	0.42	0.23	0.42	12.34	2.93	20.78	12.5
England/N. Ireland (UK)	0.18	0.38	0.21	0.4	0.21	0.41	0.21	0.41	0.19	0.39	13	2.25	19.6	13
OECD Average	0.17	0.37	0.2	0.4	0.21	0.41	0.21	0.41	0.21	0.4	.	.	18.77	12.73
Partners														
Cyprus	0.19	0.39	0.24	0.43	0.2	0.4	0.19	0.4	0.17	0.38	12.26	3.11	17.49	12.31
Russian Federation	0.17	0.38	0.23	0.42	0.19	0.39	0.21	0.41	0.19	0.39	13.35	3.32	18.37	12.35

Source: PIAAC and author's calculations. Note: Since age indicators are dummy variables, means are fractions of the sample.

Table 4—*Decomposition Results, Base Category: U.K., All Major Regressors*

	Total Difference	Observable Quantities	Observable Returns	Unobservables
Panel A: Standard Deviation of Log Wage				
Czech Republic	-0.0599	0.0064	-0.0523	-0.0140
Denmark	-0.0900	0.0157	-0.0297	-0.0759
Estonia	0.0626	0.0028	-0.0434	0.1032
Ireland	0.0899	0.0101	0.0063	0.0735
Japan	0.0838	0.0076	0.0100	0.0662
Korea	0.1637	-0.0076	0.0232	0.1481
Netherlands	0.0979	0.0055	0.0196	0.0729
Norway	-0.0926	0.0071	-0.0417	-0.0579
Poland	0.0591	0.0199	-0.0109	0.0502
Slovak Republic	0.2104	-0.0041	-0.0363	0.2508
Sub-national entities				
Flanders (Belgium)	-0.1331	-0.0054	-0.0261	-0.1015
Partners				
Russian Federation	0.3061	0.0229	-0.0960	0.3793
Panel B: 50-10 Log Wage Differential				
Czech Republic	-0.0652	0.0730	-0.1038	-0.0343
Denmark	-0.0469	0.0603	-0.0584	-0.0488
Estonia	0.1537	0.0628	-0.0365	0.1274
Ireland	0.0086	0.0299	-0.0342	0.0129
Japan	0.0245	0.0532	-0.0652	0.0365
Korea	0.2232	0.0773	0.0262	0.1198
Netherlands	0.0440	0.0117	0.0587	-0.0264
Norway	-0.1320	-0.0035	-0.0720	-0.0565
Poland	0.0917	0.0853	-0.0506	0.0569
Slovak Republic	-0.0079	0.0783	-0.0959	0.0098
Sub-national entities				
Flanders (Belgium)	-0.1420	0.0042	-0.0617	-0.0845
Partners				
Russian Federation	0.2301	0.0533	-0.1114	0.2882

Table 4—*Decomposition Results, Base Category: U.K., All Major Regressors (continued)*

	Total Difference	Observable Quantities	Observable Returns	Unobservables
Panel C: 90-50 Log Wage Differential				
Czech Republic	-0.1772	-0.0413	-0.0701	-0.0657
Denmark	-0.2815	-0.0739	-0.0565	-0.1512
Estonia	0.0970	-0.0119	-0.0806	0.1894
Ireland	0.0186	0.0098	0.0487	-0.0399
Japan	0.1163	-0.0125	0.0984	0.0304
Korea	0.2481	-0.0517	0.0686	0.2312
Netherlands	-0.1299	-0.0472	-0.0006	-0.0822
Norway	-0.2361	-0.0319	-0.0511	-0.1530
Poland	0.0450	-0.0211	0.0256	0.0406
Slovak Republic	0.0052	-0.0587	-0.0537	0.1176
Sub-national entities				
Flanders (Belgium)	-0.2054	-0.0215	-0.0448	-0.1391
Partners				
Russian Federation	-0.0487	0.0340	-0.2112	0.1285

Source: PIAAC and author's calculations.

Figure 1—*50-10 and 90-50 Log Wage Differentials*
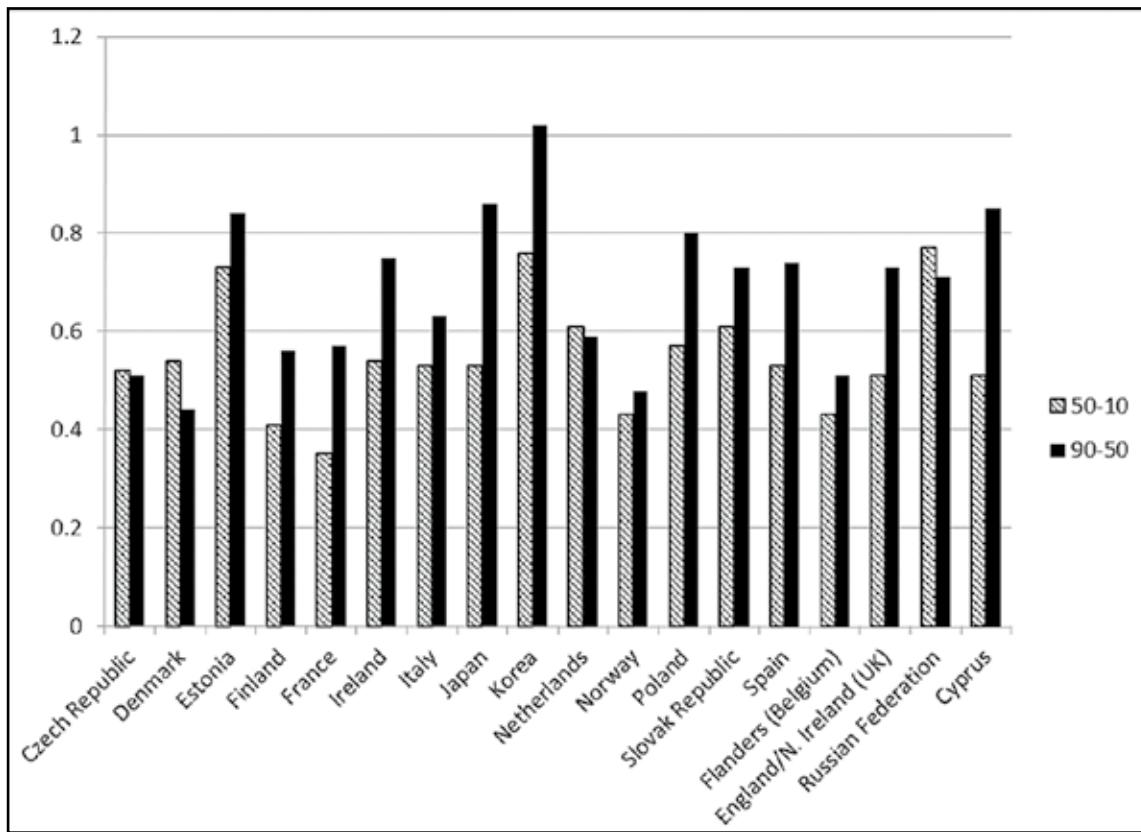
Source: PIAAC and author's calculations.

Identifying Effective Methods of Instruction for Adult Emergent Readers through Community-Based Research

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Abstract

We present a community-based research project aimed at identifying effective methods and materials for teaching English literacy skills to adult English as a second language emergent readers. We conducted a quasi-experimental study whereby we evaluated the efficacy of two approaches, one based on current practices at the English Skills Learning Center (ESLC), and the other involving a number of innovative methods and materials. In addition, we collected written reflections from the instructors in the study and conducted interviews with the students. The qualitative and quantitative data together suggest that while both approaches led to student gains, the one based on current practices led to greater student gains.

Here we report the progression and findings of a collaborative project between a second language acquisition researcher (the second author) and the English Skills Learning Center (ESLC; represented by the first author). The ESLC is a nonprofit community organization serving adult English as a second language (ESL) learners in the Salt Lake City, UT, area. This work was conducted in the community-based research (CBR) tradition. CBR is a "collaborative approach to research that equitably involves…community members, organizational representatives, and researchers in all aspects of the research process" (Israel, Schulz, Parker & Becker, 1998, p. 177). The specific idea for this research emerged over a period of regular meetings between the second author and the leadership of the ESLC to discuss the successes and challenges facing the ESLC, focusing in particular on student goals and outcomes. The ESLC provides English as

a second language instruction to immigrant and refugee members of our community, nearly one-third of whom have had no schooling in their native countries and typically are not literate in their native or any other language. These learners, who we will refer to as adult ESL emergent readers (or AESLERs)[1], face the task of acquiring basic literacy skills and a new language simultaneously.

The ability to read and write in English is key to full participation in the United States, where literacy is a "fundamental component of our culture, in which it plays a decisive role not only in the functional aspects of our lives, but also from a political, social, and personal standpoint" (Huntley, 1992, p. 3). Furthermore, literacy plays an important role in learning a second language—the ability to acquire spoken English proficiency is hindered by AESLERs' lack of literacy, as they "cannot easily do many of the typical activities of language learners: use bilingual dictionaries, take notes to review later, write translated words in the margins of texts, and refer to language and grammar reference books" (Vinogradov, 2012, p. 31). In part for these reasons, AESLERs often remain isolated, unable to express themselves without the assistance of a translator. These limitations restrict their ability to work to support their families and to perform tasks that many take for granted: obtaining a driver's license, shopping, understanding leases and contracts, navigating public transportation, and helping their children succeed in school.[2]

Despite the urgent need to address these language and literacy challenges facing AESLERs, this population of learners remains underrepresented in the scientific and educational literature on adult second language acquisition (Tarone, Bigelow, & Hansen, 2009), and there is a lack of methods and materials designed specifically to support their acquisition of English (Huntley, 1992). The overarching goal of the project presented here is to contribute both to the research addressing AESLERs and to the set of pedagogical materials available for educators working with these learners. In the next section, we review a small number of relevant studies that have been conducted, and present the specific goals driving the present work.

Literature Review

The challenges facing AESLERs are widely acknowledged (Bigelow & Vinogradov, 2011; Young-Scholten & Strom, 2006). A relatively small number of scholars have suggested methods and materials for improving literacy and ESL instruction for these learners (Florez & Terrill, 2003; Vinogradov, 2008; Vinogradov, 2010; Vinogradov & Bigelow 2010). This section focuses on studies that have documented instructional practices for AESLERs and/or investigated the efficacy of these practices.

Studies of Adult ESL Emergent Reader Teacher Training and Classroom Practice

A number of studies document current practice in adult ESL emergent reader instruction and investigate ways of improving teacher preparation. In attempt to characterize the methods of instruction used by teachers of AESLERs, Crevecoeur (2010) conducted a survey and focus group study of teachers' instructional practices. While Crevecoeur specifically probed four research-based instructional practices (i.e., the language experience approach, use of the native language, active learning, and environmental print), the study also allowed teachers to describe additional instructional practices. Seventeen instructors throughout Florida responded to a survey asking them to identify their teaching practices. In addition, five teachers participated in a focus group discussion. The survey and focus group revealed that a large majority of teachers employ the language experience approach (82%), use environmental print

in the classroom (82%), and use the native language of the students to explain concepts (88%), while fewer use discussions (31%), manipulatives (31%), and field trips (19%). The study also revealed teachers' use of a number of other teaching practices, including phonics, total physical response, oral repetition, and auditory discrimination of letters tasks. Crevecoeur (2010) concludes by stating that "training that specifically meets the needs of teachers of per-literate learners is highly recommended" (p. 31).

Vinogradov (2012) noted the dearth of professional development opportunities for teachers of AESLERs and conducted a pilot study in a study circle designed to address their professional development needs. Over the course of eight weeks, a study circle comprised of 11 teachers of AESLERs met three times for three hours at a time. Prior to each meeting, the teachers read relevant research articles and completed assignments, and spent the meetings discussing what they learned from the readings and assignments, in addition to strategies for improving their teaching practice. Vinogradov (2012) evaluated the impact of the study circles on participants by means of written reflections, questionnaires, observations of the sessions, and group interviews. It was found that interaction among the teachers in the study circles had three main effects: (1) the teachers developed "loyalty and a sense of commitment to the group"; (2) the teachers were able to "share resources, ideas, teaching tips, and other professional wisdom"; and (3) the teachers found that the study circle helped to "break their sense of isolation in their teaching" (Vinogradov, 2012, pp. 41-42).

Studies of Efficacy of Instruction for AESLERs

Few studies have explicitly investigated the efficacy of particular teaching methods in helping AESLERs meet their language learning goals. Notable examples include those by Condelli and Spruck Wrigley (2006), Condelli et al. (2010), and Huang and Newbern (2012). However, the students involved in these studies appear to have been at higher levels of literacy than the students in focus in the present study, who all had Best Literacy test scores of 0. For example, the Condelli et al. (2010) students scored at Grade 2 or higher on two subtests of the Woodcock Johnson for Reading Skills (WJR), while the learners studied by Condelli and Wrigley (2006) demonstrated a mean level of just above Grade 1 (averaged across four subtests of the WJR). The lowest-level students in the Huang and Newbern (2012) study were at the Low Beginning ESL level on CASAS, defined in part as "recognizes and writes letters and numbers and reads and understands common sight words. Can write own name and address." (Skill Level Descriptors for ESL, found at casas.org).

Despite their focus on learners at more advanced levels than those in the present study, these earlier studies provide some helpful insights into the effectiveness of various instructional practices for low-literacy ESL learners. Condelli and Spruck Wrigley (2006) report the results of an investigation of the relationship between a number of instructional (and other) variables and student learning gains. In a study involving 495 students from 13 programs spread across seven states, they found that "bringing in the outside," or making connections with the outside world through the use of "field trips, speakers, and real-life materials" (Condelli & Spruck Wrigley, 2006, p. 113), was positively correlated with development in basic reading skills. Both Condelli et al. (2010) and Huang and Newbern (2012) performed quasi-experimental studies comparing instructional methods. Condelli et al. (2010) did not find a significant difference in learning outcomes between groups of learners who were taught using standard instruction or instruction guided by the *Sam and Pat* textbook (Hartel, Lowry, & Hendon, 2006), which differs from standard instruction in terms of (1) the

sequence in which English phonemes are taught, (2) the words chosen for phonics and vocabulary study, (3) the simplification of grammar structures presented, and (4) the added bridging of systematic reading instruction to ESL instruction (Condelli et al., 2012, p. x). Huang and Newbern (2012), on the other hand, did find a significant effect of explicit metacognitive strategy instruction on reading gains.

We have thus found a very small number of studies that have explicitly and systematically investigated a causal relationship between instructional practice and literacy development by AESLERs, and these studies have tended to focus on learners at higher levels of English literacy than those in focus in the present study. Because we are specifically interested in the very earliest of emerging readers, as will be seen below, the instructional strategies considered here involve the low-level skills of letter identification, mapping between letters and phonemes, and reading one-, two-, and three-letter words.

Project Goals

As stated above, the overarching goal of the present project is to contribute to the research on and instructional strategies for AESLERs. Our specific goals are as follows:
1. To identify existing (and new) approaches to teaching AESLERs;
2. To conduct a systematic study whereby the efficacy of these approaches can be assessed; and
3. To affirm the role AESLERs play in making curricular decisions.
In addressing these goals, we first reviewed AESLER teaching practices, both those already in use at the ESLC and additional possibilities found in the literature, focusing primarily on practices having to do with helping learners develop low-level print decoding skills. In doing so, we identified a number of dimensions on which approaches to teaching ESL emergent readers may differ from one another. These

include the order in which letters are introduced, the method of introducing phonemes/letters, the use of word families, the use of nonsense words to demonstrate possible letter sequences (e.g., 'daf'), how many letters are introduced at a time, how many letters are introduced before reading words, the length of words students are exposed to, the use of a marking system to help students sound out words, whether the focus is on pronunciation versus reading comprehension, and the use of explicit spelling rules.

Given our second goal of conducting a systematic study whereby the efficacy of instructional choices along these dimensions can be assessed, we created two instructional approaches, attempting to distinguish the two approaches to the extent practical. The result of this process, described in detail below is a pair of approaches, neither of which necessarily represents any particular established instructional approach (though Approach 1 shares many characteristics with that of the ESLC leading up to the project), which provide an opportunity to investigate the efficacy of various instructional choices for teaching AESLERs.

We conducted a quasi-experimental study involving four ESL classes taught by two teachers. We employed a pre-test/post-test design using a specially-designed test of early literacy, and also collected extensive qualitative data. Crucially, given our commitment to affirming the voice of the learners themselves, in addition to learner test scores and various sources of input from the teachers concerning the efficacy of the two teaching approaches, we interviewed the learners in order to gain a better understanding of their experiences as learners in general and in the study in particular.

Study Methods

The question of what teaching characteristics are most effective was addressed via a quasi-experimental study. The advantage of the quasi-experimental study

design is that it takes advantage of existing program structures offered by the ESLC. In particular, we selected AESLER populations at locations in the Salt Lake City area and, with the help of a Community-Based Research Grant from the University of Utah, we were able to offer classes to meet the community's needs while also addressing the goals of the study. These classes, of which four were selected for inclusion in the study, were randomly assigned to the two instructional approach conditions, described below.

Instructional Approaches

Here we use the term "approach" to refer to a set of instructional methods and materials. Approach 1 is the standard form of ESL literacy instruction used by ESLC teachers and volunteer tutors prior to the project period, and is characterized by a focus on reading real words in context. Approach 1 was developed over time by ESLC teachers and staff, and was primarily influenced by the organization's experience with AESLERs, given the lack of a body of research to inform curriculum design and the lack of published materials and methods designed for this population of learners. The ESLC learned of Approach 2 via a promotional workshop offered by a for-profit organization that has asked not to be identified in this manuscript. A number of studies indicated that the method could be helpful with both child and adult emerging readers, and the ESLC and this company decided to partner to explore the efficacy of their potentially promising literacy instruction method for AESLERs. Approach 2 is characterized by a focus on the pronunciation of individual phonemes, emphasizing spelling rules via a marking system. Because Approach 2 was originally developed for native English-speaking children and adults, the research team made a number of adjustments in order to make the materials more appropriate for AESLERs, e.g., replacing less common vocabulary in the materials with words likely to be familiar to the learners. The significant differences between the two approaches are detailed in Table 1.

Students and Classes

Four classes of AESLERs from a variety of native language backgrounds (i.e., Somali Bantu, Kirundi, Nepali, French, Karen, Burmese, Kunama, Arabic, and Swahili) participated. The classes were organized by the ESLC to serve populations around Salt Lake City. Two of the classes were exposed to Approach 1 and the other two classes were exposed to Approach 2. Two teachers were selected and trained by the research team to use the two approaches. Each teacher implemented Approach 1 in one of their classes and Approach 2 in another of their classes, creating a counterbalanced design. The enrollment goal for each class was ten; actual numbers of students varied by class—information about student populations, enrollment, retention, and total number of student contact hours is provided in Table 2.

Teachers

We selected two teachers and trained them via a twelve-hour workshop covering adult learning theory and lesson planning, plus an additional four-hour training in the two targeted approaches. Teacher A had certificates in teaching English as a foreign language and in tutoring; no formal language learning experience, and had taught ESL for one year. Teacher B had a bachelor's degree in Applied Linguistics and TESOL, spoke Japanese as a second language, and had taught ESL for 1.5 years. Neither had any previous AESLER teaching experience.

Procedures

Over a 30-week period, during which each class met for three hours/week, the teachers implemented the approaches. Students took a pre-test at the beginning of the study period and a post-test at the end of the study period.

Informed consent was collected orally in the students' native languages with the help of translators and the research was approved by the University of Utah Institutional Review Board.

Pre-Test. At the beginning of the 30-week class session, the research team assessed the literacy level of each of the twenty-nine students using a custom assessment tool that was developed for the present research. While there are well-known early literacy assessments available (e.g., the Best Literacy test), the research team knows of no widely-available assessments that are sensitive to the very earliest emerging literacy skills. The team thus designed an assessment tool to probe a number of literacy subskills in a step-wise fashion: (1) letter shape recognition, (2) matching lowercase and uppercase letters, (3) letter identification, (4) writing letters, (5) writing corresponding uppercase and lowercase letters, (6) phoneme identification, (7) reading short-vowel words, (8) writing short-vowel words, (9) reading long-vowel words, (10) reading blends and digraphs, and (11) writing long-vowel words, blends and digraphs. The assessment tool was administered one-on-one as the examiner showed the student a page with letters, numbers, or words written on it and asks the student questions following a test script. Each of the 11 literacy skills comprises a level on the test: Each level has five or ten questions, based on the complexity of the literacy skill being tested. The student passes a level if they answer 60% of questions correctly. The test ends once the student fails three levels or answers every question on the test. If the student fails one level but passed the next, their final score indicates the last level passed.

Ensuring Consistent Differentiation of the Approaches. We took a number of steps to ensure consistency in the differentiation of the two approaches. First, the teachers and the first author met weekly to address questions regarding the approaches. Second, the first author visited each class

monthly to ensure that teachers were adhering to the research guidelines, with the researcher indicating required corrections to the teacher. Finally, midway through the research project, the teachers completed a questionnaire, which provided an opportunity for them to reflect on how well they believed they were differentiating their teaching in the Approach 1 and 2 classes.

Post-Test. The post-test, identical to the pre-test, was conducted after the 30th week of instruction (72 hours of class time).

Student Interviews. The first author and the teachers interviewed the students during the week following the post-test. The teachers interviewed each others' students. Interviews were conducted in English. Because professional interpreters were not available, we selected willing individuals with the highest level of English proficiency possible to serve as interpreters. All interviews were audio-recorded.

Teacher Reflection. The teachers wrote in a shared electronic journal every Friday. These reflections included remarks about student progress the teachers' observations regarding the effectiveness of each approach. In addition, at the conclusion of the project both teachers wrote a final reflection document regarding the two approaches. They commented on the efficacy and challenges of each of the approaches and they suggested adaptations to the approaches for future curriculum development. And finally, the first author and the teachers had three one-hour meetings to discuss curriculum development. Each meeting was audio-recorded.

Results
Quantitative Analysis of Post-test Scores

Table 3 presents students' background information, pre-test and post-test scores, and number of hours of instruction. As indicated in Table 2, there was some student attrition in the

classes; from this point on, test data from only those students who completed the post-test is considered. In the end, there were 11 Approach 1 students and nine Approach 2 students.

First we asked whether, as a group, the twenty learners who completed the study demonstrated overall improvement over the course of the study period. A paired samples t-test was conducted with time of test (pre-, post-) as the independent variable and test score as the dependent variable. We found a significant difference in pre- versus post-test scores $(t(19)=-.923, p=.009)$, with post-test scores higher (mean=5.5) than pre-test scores (mean=4.4).

We next determined whether the students in the two Approach conditions differed from one another in their pre-test scores. An independent samples t-test was conducted with Approach (two levels: 1, 2) as the independent variable and pre-test score as the dependent variable. The two groups were significantly different in their pre-test performance $(t(18)=3.068, p=.007)$, with Approach 1 students having substantially higher pre-test scores (mean=5.64) than did Approach 2 students (mean=2.89). An additional variable of interest is the number of hours of instruction that students in the two groups received during the study period. While number of hours of *available* instruction was the same for all students, most students missed some class meetings. An independent samples t-test case conducted with Approach (two levels: 1, 2) as the independent variable and hours of instruction as the dependent variable revealed no significant difference $(t(18)=-.381, p=.708)$ between the hours of instruction of Approach 1 (mean=53.05) and Approach 2 (mean=55.06) students. In order to control as carefully as possible for the effects of pre-existing ability (pre-test score) and exposure to instruction (hours of instruction), in subsequent analyses we used pre-test scores and hours of instruction as covariates.

To investigate the effectiveness of the two approaches, we next conducted an Analysis of Covariance (ANCOVA) with Approach and Teacher (Teacher A, Teacher B) as independent variables, post-test score as the dependent variable, and pre-test score and hours of instruction as covariates. Adjusting for pre-test score and hours of instruction, there was a significant main effect of Approach $(F(1,14)=5.583, p=.033; \eta^2_{partial}=.285)$, with students in Approach 1 classes (mean score=6.36) outperforming students in Approach 2 classes (mean score=4.44). There was a significant main effect of Teacher $(F(1,14)=17.372, p=.001; \eta^2_{partial}=.554)$, with scores for Teacher A's students (mean=5.71) significantly higher than those of Teacher B's students (5.38). There was also a significant interaction of Approach and Teacher $(F(1,14)=11.290, p=.005; \eta^2_{partial}=.446)$. Following up on this interaction, we split the data by teacher and performed a one-way ANCOVA with Approach as the independent variable and post-test score as the dependent variable. There was no significant effect of Approach for either the students of Teacher A $(F(1,3)=4.918, p=.113; \eta^2_{partial}=.621)$ or Teacher B $(F(1,9)=.023, p=.883; \eta^2_{partial}=.003)$. However, when we split the data by Approach and repeated the ANCOVA with Teacher as the independent variable, we found a significant effect of Teacher for Approach 2 $(F(1,5)=94.435, p<.005; \eta^2_{partial}=.950)$, with Teacher A's students (mean = 6.0) outperforming Teacher B's students (mean = 3.67), but no significant effect of Teacher for Approach 1 $(F(1,7)=.097, p=.765; \eta^2_{partial}=.014$; Teacher A's students = 5.5; Teacher B's students=6.86). Figure 1 illustrates the interaction of Teacher and Approach.

In summary, the quantitative results suggest the following:

- Overall, test scores improved over the course of the study period.

- Overall, students in Approach 1 classes outperformed those in Approach 2 classes.
- The effect of Approach was moderated by Teacher—that is, Teacher A's students outperformed Teacher B's students in Approach 2, but there was no Teacher difference for Approach 1.

Qualitative Analyses

In conducting the qualitative analyses, the authors took the following steps. Each author studied and prepared summaries of the raw qualitative data (teacher journal entries and reflections, minutes of teacher meetings, class observations, transcripts of student interviews, and teacher questionnaire responses). The authors then met to compare summaries, looking for areas where the summaries captured similar sentiments on the parts of the teachers and/or learners. In this way, we followed a bottom-up approach to the data, allowing themes to emerge from convergence in the two authors' summaries. Here we discuss the qualitative findings, organized by the seven instructional strategy dimensions identified above.

Uppercase and Lowercase Letters. It is often observed that AESLERs find it easier to recognize and write uppercase than lowercase letters, and this tendency is reflected in many textbooks designed for ESL literacy. For example, Saslow (2003) and Gati (1992), texts used for content in the Approach 1 curriculum, introduce lowercase letters only after students can read entire sentences written in uppercase letters. In the present study, Approach 1 students only learned uppercase letters because they did not reach the point in the manuals where lowercase letters were introduced. In contrast, Approach 2 students were taught uppercase and lowercase letters at the same time, using the terms "big" and "small." Teacher A said, "I find …teaching the upper case rather…frustrating for the students, as lower case forms are much more common." At the end of the study, A1 students demonstrated their knowledge of lowercase letters, despite having had no exposure to them in class. Thus the necessity of waiting to introduce lowercase letters until students had mastered the uppercase letters was not supported by our study.

Real Words and Nonsense Words. AESLERs often have a highly-developed ability to memorize new information; however, this can be problematic when students use a strategy of memorizing entire sight words to the exclusion of developing decoding skills. Approach 2 anticipates this challenge by using nonsense words to teach and to evaluate students' ability to manipulate phonemes. In Approach 2, nonsense words (e.g., /bæf/) are marked with an asterisk to distinguish them from real words. The teachers noted that Approach 2 students expressed confusion about nonsense words. The teachers felt that student motivation was low when learning them.

Approach 1, on the other hand, emphasizes comprehension when reading, using only real words that can be associated with pictures. In the interviews, students spoke strongly in favor of Approach 1 on this point. For example, A1/9 said, "[I] can understand the meaning of the particular words which signifies the picture, which is the right pictures." A1/5 agrees: "If you show the pen, and you say 'pen' and you spell it P-E-N, and repeat four or five times, then make [us] to write on the paper. So [we] are able to say, 'Oh, this P-E-N, pen.'" The teachers also favored the use of real words, for example, Teacher A said, "The use of pictures…is absolutely vital. They want to relate to the word, not just know how to read or write it on paper. As soon as I hold up a new picture for a new…word, their brains immediately click, and they begin chattering away in their native tongues about that particular object." In summary, both teachers and students expressed a preference for the use of

real words. Nonetheless, the teachers also recognized the value of nonsense words in evaluating students' ability to manipulate phonemes, and suggested that nonsense words be used as occasional review activities as opposed to a core part of the curriculum.

Number of Phonemes Introduced Before Reading Words. AESLERs often succeed at learning individual phonemes, but struggle with the task of blending phonemes to form words. Our students were no exception, as student A2/5 said, "[I][3] can read individual letters, but [I] can't pronounce the combination."

Approach 2 responds to this challenge by teaching students, for example, the letter B, then the short vowel A (/æ/), then immediately blending them to form /bæ/ This consonant-vowel blend is called a "slide," an integral part of the Approach 2 curriculum. Students are given extensive exposure to the concept of blending early on with the use of slides. In contrast, in Approach 1, students learn all of the consonants and the short vowel A (æ) and then learn to read three-letter words using combinations of consonants and A.

Sequence of Teaching Phonemes. Approach 2 students were introduced to the vowel E after learning eight consonants and reading seven words with A. Approach 1 students were introduced to the vowel E after learning all 21 consonants and reading 23 words with A. The teachers observed that Approach 1 students who were given much more time to work with the consonants and A were more successful at distinguishing between A and E. Teacher B noted that students in her Approach 2 class "are really struggling with the short E sound…I think they might be just guessing when there are two vowels being reviewed at one time."

Both approaches use letter groups to teach students the alphabet in small, manageable chunks. The teachers felt that letter groups helped the students learn the alphabet at an appropriate pace. However,

students were exposed to the alphabet outside of class and were frustrated that they did not know all of the letters and that they were not learning them in order. When asked if she felt that her English skills had improved over the previous six months, Student A2/5 said, "[I feel that I have] improved a little, but [I don't] even know the complete alphabet up to Z."

Approach 1 students were taught several blends and digraphs and read four- and five-letter words while Approach 2 students only read two- and three-letter words. The teachers felt that it was too early to be introducing advanced concepts such as blends and digraphs. The students also expressed confusion with reading longer words. Student A1/11 said, "Sometimes you pronounce is, /ʃ/, and sometimes /s/…[I know] you said it was 'sled', but sometimes [I look] at it, and [I think] it says, 'shed.'" Student A1/5 said, "Four or five letter when they combine I have a hard time to pronounce or get the meaning."

Method of Teaching Phonemes. Approach 1 uses picture cards to associate each letter with a word that starts with the letter's phoneme (often known as 'word sort'). Once students learn several phonemes, they are blended to form words in onset-rime word families. Each word in a word family has an associated picture. Approach 2 does not use pictures, rather the teachers orally associate the letters with words with the onset phoneme. Occasionally the word is accompanied by a physical action such as tapping one's leg and saying, "/l/, leg."

The teachers and students preferred Approach 1 over Approach 2 for learning phonemes. Teacher A said that the method of "associating the pictures alongside the words is… indispensable." Student A1/10 said, "It was very easy with the sounds and the letters…the pictures symbolize what is the first letter of that pictures, so [I] can…relate the words and the pictures."

Word Families. Approach 1 students spoke in favor of the use of onset-rime word families. Student

A1/3 said, "P, pan, M-A-N, man. Yes, [I feel] easy while reading. The word is ending with the same letters, so [I feel] easy to learn that." Student A1/10 said, "The last letter is the same, so this kind tricks or techniques by the teacher…[I like] that technique." The teachers both attributed a large part of Approach 1 students' rapid progress to the use of onset-rime word families. Students learned to read several words very quickly when they were introduced within an onset-rime word family. It took much longer for students in the Approach 2 classes to learn to read words with differing onsets and codas.

Marking System. Approach 2 employs a complex marking system to teach emergent readers how to decode words. Three of the marks in this system were used in the research project: (1) an arrow is drawn under slides to reinforce reading from left to right; (2) an 'x' under vowels is intended to encourage students to focus on accurate pronunciation of the vowels; and (3) an asterisk before a nonsense word indicates that the word does not have meaning. The teachers found it challenging to explain the use of the marking system to students with limited oral skills. Students had never encountered the marking system before and were therefore resistant to using it for the first several weeks of the project. When given the assignment to put x's under vowels on a sheet of sight words, the students put the x's underneath the middle of the words instead of the vowels, unaware of the vowels' significance. In the student interviews, only one out of nine Approach 2 students was able to explain the purpose of the marking system (A2/3). When Student A2/1 was asked why there was an 'x' under the word "bag," she replied, "That means bad… bags hold a lot of bad things…they will kill someone." Teacher B concluded, "I'm afraid that the marking system [was] only a new source of English-related stress for them."

When one counts the number of phonemes and words actually learned over the project's duration,

Approach 1 students' progress was substantially greater than that of Approach 2 students. Approach 1 students learned 23 phonemes and could read 37 words by the end of the project. Approach 2 students learned 10 phonemes and could read 16 real words by the end of the project. The researchers and teachers hypothesize that this discrepancy was due to Approach 2's lack of visual support or use of onset-rime word families, focus on non-meaningful text (nonsense words and slides), and early introduction of a second vowel.

Discussion

Together, the quantitative and qualitative data suggest that Approach 1 is superior to Approach 2 with respect to student test scores in addition to student and teacher perceptions. However, this finding should be interpreted with caution for a number of reasons. First, this study involved a very small number of participants. Ideally, such studies should involve much higher numbers of students, and the small sample presented here is problematic with respect to the generalizability of our findings. A related problem is student attrition—we do not know why individual students stopped attending class, and cannot be certain whether or not the instructional approach played some role in that decision. Students enrolled in ESL classes like those offered by the ESLC experience a number of life circumstances that interfere with their ability to regularly attend classes, and research on this population of learners must necessarily grapple with the challenge of very small numbers of students who persist in attending classes for the duration of a study period. In fact, this challenge may contribute to the relative dearth of research on AESLERs. Nonetheless, these learners deserve recognition by the scholarly community, and it is the authors' hope that, despite the limitations of the present study, this work will contribute to the empirical foundation underlying ever-improving

educational opportunities for these learners.

A second note of caution concerning the general finding that Approach 1 was superior to Approach 2 is that the effect of Approach on post-test scores was moderated by Teacher, as indicated by the significant interaction of Approach and Teacher. This suggests that the benefit to student learning associated with Approach 1 was not experienced equally by each teacher's students. While the study was not designed to probe teacher differences, it is not unexpected that the two teachers might differ in their implementation of the prescribed approaches despite the efforts to maintain consistency described above.

Finally, we consider our findings in light of some of Knowles' assumptions about andragogy, in particular that (1) adults seek the immediate applicability of what they learn; (2) internal motivation is important; and (3) adults desire to know why they need to learn something (summarized in Merriam, Caffarella & Baumgartner, 2012). Students' strong preference for the use of real words (as opposed to nonsense words) speaks to their desire to be able to understand and use the material they are learning. In addition, the teachers expressed sensitivity to the impact of the nonsense words on students' motivation, preferring to use to more motivating real words in class. The students also expressed opinions about what they should be learning (e.g., wanting to learn the entire alphabet in order), consistent with the high level of engagement and investment that is typical of adult learners.

Conclusion

We have presented the progression and findings of a Community-Based Research on the efficacy of two approaches to ESL literacy instruction for AESLERs. Our commitment to the ideals of CBR has been manifested in the collaborative nature of all aspects of the study, from its conception to the dissemination of our findings, and most importantly, in highlighting the voices of our students throughout the process. The combined results of the quantitative and qualitative data reinforce many aspects of the current practices at the ESLC with respect to instruction in AESLER classes, and provide a foundation for further development of the AESLER curriculum. ❖

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[1] See Burt, Peyton & Schaetze (2008) for a discussion of terminology used for this population of learners.

[2] It is worth noting that adult ESL emergent readers often show remarkable skill in tackling such challenges as supporting their children's education (see Bigelow's (2007) story of a Somali mother who does so creatively and effectively).

[3] Our non-professional interpreters frequently spoke in the third person; we have converted third-person pronouns to first-person pronouns and indicated these changes with brackets.

Table 1—*Instructional Strategies Employed in the Two Studied Instructional Approaches, by Instructional Dimension*

| Instructional Dimension	Approach 1	Approach 2
Uppercase and Lowercase Letters	Uppercase before lowercase	Uppercase and lowercase simultaneously
Real/Nonsense Words	Only real words	Nonsense and real words
Number of Phonemes Introduced Before Reading Words	Learn 22 phonemes before reading words	Begin reading words immediately after learning the first two phonemes
Sequence of Teaching Phonemes	Vowels introduced after all consonants Use of blends and digraphs	Vowels introduced after four consonants No blends or digraphs
Method of Teaching Phonemes	Phoneme-picture association	Letter cards only
Word Families	Word families e.g. bad, dad	Words with combinations of letters in a letter group e.g. bad, dab
Marking System	No marking system	Marking system e.g. *daf, ja →

Table 2—*The Four Study Classes*

Approach & Teacher	Location	Enrollment	Contact Hours*
Approach 1 Teacher A (A1/TA)	Community Center	Initial: 6 Final: 4	139.75
Approach 1 Teacher B (A1/TB)	Community Center	Initial: 10 Final: 7	358.75
Approach 2 Teacher A (A2/TA)	Apartment complex leasing office	Initial: 7 Final: 6	317.5
Approach 2 Teacher B (A2/TB)	Community Center	Initial: 6 Final: 3	178

* *Total number of individual student contact hours*

Table 3—*Students' Background Information, Pre-test and Post-test Scores, and Number of Hours of Instruction*

ID	Approach	Teacher	M/F	Age	Native Lang.	Formal Education (years)	Pre-Test	Post-Test	Instruction (hrs.)
A1-1	1	A	F	35	Burmese*	2	3	6	48
A1-2	1	A	F	42	Burmese*	6	5	6	34.75
A1-3	1	A	F	46	Burmese*	0	3	3	57
A1-4	1	A	F	-	Arabic	-	7	7	40
A1-5	1	B	F	52	Nepali	0	5	5	48.25
A1-6	1	B	M	54	Nepali	0	7	7	66
A1-7	1	B	F	59	Nepali	0	5	5	60.75
A1-8	1	B	M	60	Nepali	0	7	10	60
A1-9	1	B	F	65	Nepali	3	5	5	66
A1-10	1	B	M	79	Nepali	0	5	5	57.75
A1-11	1	B	M	-	Nepali	-	10	11	45
A2-1	2	A	F	67	Nepali	0	3	7	60
A2-2	2	A	F	69	Nepali	0	0	5	54.5
A2-3	2	A	M	76	Nepali	0	2	6	63.5
A2-4	2	B	F	53	Somali*	0	3	3	26
A2-5	2	B	F	55	Somali*	0	4	5	74.5
A2-6	2	B	M	66	Kunama	0	3	3	57.5
A2-7	2	B	F	69	Somali*	0	1	1	49.5
A2-8	2	B	F	73	Kunama	0	7	7	51.25
A2-9	2	B	F	74	Kirundi	0	3	3	58.75

* Some students identified their languages as "Burmese" or "Somali" and did not provide more specific language information. "-" indicates that we were unable to collect this information from the student.

Figure 1—*Box Plot of Post-test Scores, by Approach and Teacher*
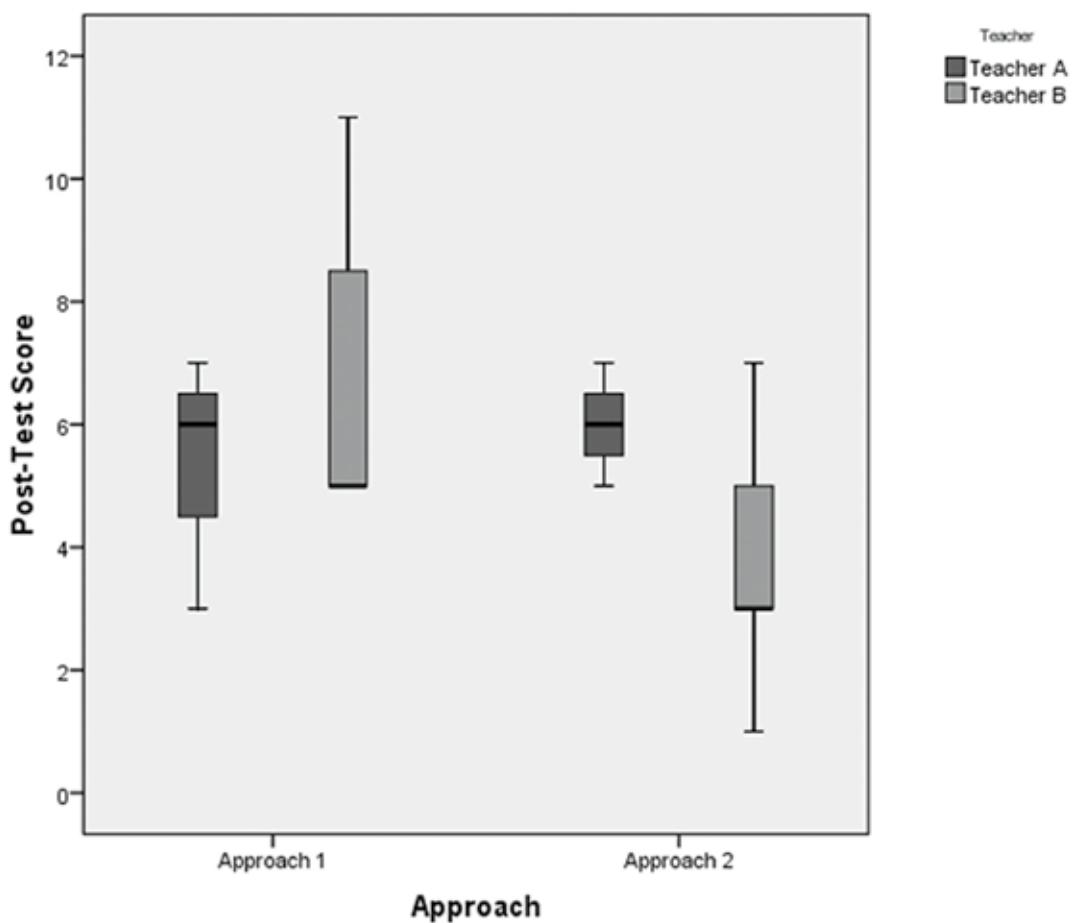
WIOA: Implications for Low-Scoring Adult Learners

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A substantial proportion of participants in public adult education programs struggle with "basic" academic print literacy skills. According to the 2014-2015 National Reporting System (NRS) data, 48.7% of the national adult basic education/adult secondary education (ABE/ASE) population tested as reading at or below the "Low Intermediate Basic" level (Office of Career, Technical and Adult Education National Reporting System (OCTAE NRS), n.d.-a). In some places, the proportion was much higher: for example, in the same year in Texas, 68% of ABE/ASE participants were at or below this level (OCTAE NRS, n.d.-b). A low score on a standardized ABE/ASE intake assessment is not an indication of "low intellect" or "low ability"; it is, however, frequently an indication of substantial difficulty with many aspects of academic reading and writing. In this article, I will explore the potential negative impact of contemporary federal policy on these low-scoring adult readers and the programs that serve them.

The 2014 Workforce Innovation and Opportunity Act (WIOA), which regulates ABE/ASE program operation, emphasizes workforce preparation and postsecondary education as the "core purpose" of federally-funded ABE/ASE programs (United States

Department of Education (U.S. DoE), 2014). This policy has a number of ramifications for low-scoring adult readers. First, a classroom focus on workforce preparation and postsecondary education potentially constrains opportunities for reading and writing development. Second, WIOA performance measures may discourage programs from enrolling low-scoring adult readers by setting outcomes that are largely unattainable by those who have significant reading difficulty. Third, these shortcomings of service fall disproportionately on African American adult learners, who are overrepresented among participants who test at or below the Low Intermediate Basic level.

Constraints in the Classroom

A policy focus on workforce preparation and postsecondary education potentially constrains educational opportunities in the classroom, and thus limits the potential progress of adults who may need dedicated support to develop their literacy skills. First, program attention to workforce preparation may limit the amount of class time spent on reading and writing in favor of skills like resume writing, interviewing, and exhibiting professional demeanor (Hayes, 1999). Less class time dedicated to reading and writing likely means that participants, who

may need many hours of instruction to meet their educational goals (Comings, 2007), would find their reading progress decelerated. Second, WIOA calls for a return to workplace-based ABE/ASE programs and greater curricular alignment with the needs of employers (Bird, Foster, & Ganzglass, 2014). However, the needs of employers might contrast with, or even be in opposition to, the goals of students. Numerous studies of workforce development in workplace settings or job training programs have found that what was described by managers as literacy education focused more on behavior modification that benefitted employers, rather than literacy or the educational growth of participants (Folinsbee, 2009; Gowen, 1992; Grubb & Kalman, 1994; Hull,1997). Third, a workforce preparation frame may limit the type of texts to which readers are exposed (Gowen, 1992), yet reading development is most effective when learners engage with a broad range of materials that reflect their interests and purposes for attending class (Purcell-Gates, 1995; Cuban, 2001). The program model most promoted in the contemporary ABE/ASE policy context is the Integrated Education and Training (IET) model, in which participants are taught specific job skills, receive contextualized and integrated literacy support, and earn a postsecondary credential. Although IET programs are generally closed to low-scoring adult learners, these programs are illustrative of the type of workforce-oriented literacy education WIOA supports.

WIOA's emphasis on postsecondary education also potentially constrains the classroom opportunities available to low-scoring adult readers. This emphasis may heighten pressure on programs to focus instructional energy on the gate-keeping tests that learners must pass in order to demonstrate "progress" and become eligible for postsecondary programs. With a greater focus on testing often comes a concomitant lack of attention to complex or authentic literacy tasks or attention to literacy skills for the multiple purposes that may be relevant to participants' lives (Bingman, Ebert, & Bell, 2000). For adults who may have substantial reading difficulty, a focus on testing to the exclusion of other experiences with reading and writing is likely to have a negative limiting effect on their literacy development.

Fewer Programs for Low-Scoring Adult Readers

WIOA has six core performance measures used to evaluate programs: four related to employment, one related to postsecondary credentials, and one related to measurable skills outcomes. These performance measures may discourage programs from enrolling adults who test as reading at the Low Intermediate Basic level and below because the goals WIOA sets are difficult for low-scoring adult readers to achieve. WIOA's expectation that all adult learners, regardless of entering reading level, life circumstances, or potential learning difficulties, will produce rapid employment outcomes ignores the shortage of stable, well-paying jobs with benefits for people across the spectrum of print literacy skills and abilities (Hull, 1997). The Office of Career, Technical, and Adult Education (OCTAE) reported that 5,000,000 American jobs regularly go unfilled, and proposed that America's roughly 9 million unemployed adults and 24 million "front-line" workers (read: underpaid, low-skilled) would be able to compete for the "better" ones, if they had the right training (Uvin, 2015). However, even if all 5,000,000 unfilled jobs were "good" jobs and it were possible to successfully prepare 5,000,000 people with the skills needed for those jobs, about 28 million people would be left without a job that provides a living wage. Adults who begin with further to go

and who, due to the policy emphasis on education for employment, may have increasingly less access to reading instruction in their classrooms will invariably come up short in this competition, and the programs that serve them will be penalized accordingly.

The core measures related to obtaining postsecondary credentials and measurable skills outcomes have a similar problem: adults who have significant difficulty with reading have difficulty achieving the goals assessed by these measures. Yet, WIOA evaluates programs on the basis of "percentage of participants who obtain a postsecondary credential or diploma *during participation or within one year after exit*" (U.S. DoE, 2014, p.3, emphasis added), a wildly unrealistic expectation for participants who are reading at a very basic level. The reality is that many of these learners will not go on to gain a GED, and even fewer will complete a postsecondary credential. Dropout rates from adult literacy programs are extremely high (Porter, Cuban, Comings, & Chase, 2005), and the barriers to completion are many and complex (Comings, 2007; Schafft & Prins, 2009). And although the Center for Law and Social Policy suggests that the core performance measure related to measurable skills improvement "is an important step forward in encouraging the workforce system to better serve low-skilled individuals" (Bird, Foster, & Ganzglass, 2014, p.15), demonstrating measureable skills outcomes has long been a federal requirement of the National Reporting System, and thus far, has done little to improve service to low-scoring adult readers. Rather, this requirement penalizes programs when participants do not demonstrate measurable outcomes, a common occurrence for low-scoring readers, who frequently leave programs before they have completed the many hours of literacy instruction needed to demonstrate gains (Porter et al., 2005).

If the outcomes by which the government assesses an adult education program are only achievable by participants who start with more advanced reading skills, it seems likely that publicly-funded programs will choose/be forced to engage in "creaming" and only enroll those learners most likely to quickly produce measurable outcomes. Given that programs' funding and very existence often depend on their learners' ability to demonstrate outcomes, these accountability measures may force programs that presently offer skilled teachers to low-scoring adults to withdraw those resources, leaving those learners to be served exclusively by volunteers with limited training or expertise in literacy instruction, or left without instructional support altogether.

Furthermore, WIOA-promoted Integrated Education and Training programs are generally inaccessible to adult learners who test as reading at or below the Low Intermediate Basic level, which corresponds to a 5th grade equivalent (GE). These programs are targeted to learners who test at an 8th GE or above (Bragg et. al, 2007), and even the so-called "bridge" or "pre-bridge" programs that target adults with lower tested reading levels usually only accept students who test at a 6th GE or above (Strawn, 2011). Even if low-scoring adult readers were accepted into these programs, the chances that they would be able to produce outcomes that meet WIOA performance measures are slim.

Disproportionate Impact on African American Learners

African American adult learners bear the brunt of ABE policies that concentrate on workforce preparation and postsecondary credentials, because African Americans are heavily overrepresented among low-scoring adult readers (OCTAE NRS, n.d.-a). Table I shows that a large majority (62%) of African Americans entering publicly-funded adult

literacy programs in 2014-2015 tested as reading at or below the Low Intermediate Basic level, a higher percentage than any other racial group. Furthermore, African Americans made up the largest proportion of all participants who tested as reading at or below the Low Intermediate Basic level: 38% of these learners were African American.[1]

Given the negative policy implications for low-scoring adult readers articulated above, these demographic data mean that African American adult basic education participants are disproportionately disadvantaged by contemporary federal ABE/ASE policy, regardless of whether that is the policy intention. Though little research has been conducted on the differing effects of federal adult education legislation across racial groups, Quadagno (1994) demonstrated that an early federal adult literacy/anti-poverty program, the 1962 Manpower Demonstration and Training Act, ultimately failed to provide equal education or work opportunities for African American participants, and Goldrick-Rab and Shaw (2005) argued that the "work first" policy focus in both WIA and the 1996 welfare reform act had a detrimental effect on African Americans' and Latinos' access to federally-funded job training programs and, ultimately, to higher education.

The present policy has the potential to continue this pattern of differential outcomes. WIOA is a "colorblind" or "race-neutral" policy; that is, although its purpose is to provide opportunities to previously marginalized adults, it seeks to apply solutions without consideration for race or the existence of past or present racial discrimination. Many education scholars argue that colorblind policies, at best, are ineffective in improving equality of opportunity and outcomes and, at worst, serve to perpetuate racial inequality, because policies are enacted in a society shaped by historical and contemporary racial prejudice and discrimination (Gullen, 2001; Urrieta, 2006; Wells, 2014). Most ABE/ASE participants were previously enrolled in the U.S. K-12 education system, which is widely acknowledged as complicit in the production of deeply unequal educational outcomes for low-income students of color (Darling-Hammond, 2010; Oakes, 2005; Skiba et al., 2011). Whether the disproportional representation of African Americans among low-scoring adult readers is an accurate reflection of previous race-based educational inequality or can be attributed to other factors, such as bias in assessment tests, is an important but as yet unanswered question; equally important is the present reality that African American ABE/ASE participants are disproportionately affected by federal policies that limit access to and quality of educational opportunities for low-scoring learners. Therefore, having policies that effectively address the learning needs of adults at all levels of instruction is an important part of efforts to provide adult basic education services that are not only high quality and effective, but also racially just.

Conclusion

Policy that frames all instruction as part of a pathway to postsecondary education or a career may present ethical and pedagogical challenges to adult literacy programs wishing to provide instruction that

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[1] African American and Hispanic/Latino students were substantially over-represented in the overall ABE/ASE population when compared with the 2010 U.S. census data for the general population. (OCTAE NRS, n.d.- a; U.S. Census Bureau, 2011). African-American participants made up 30% of the overall ABE/ASE population, but 13% of the national population. Hispanic/Latino participants made up 27% of the ABE/ASE population, but 16% of the national population. That African-American and Hispanic/Latino students were so highly over-represented means that White students were substantially under-represented in the ABE/ASE population—a question worthy of further investigation.

is responsive to a variety of student goals (Hayes, 1999; Belzer, 2003) and presents particular issues of concern for programs offering classes to low-scoring adult readers, who make up about half of all ABE/ASE participants across the country. Current federal policy shaping ABE/ASE educational opportunities may actually be detrimental to this group of learners, many of whom enter literacy programs seeking reading and writing help. Although WIOA requires states to "consider how well providers will serve learners at the *lowest* skill levels prior to awarding local grants" (Bird, Foster, & Ganzglass, 2014, p.9), other requirements of WIOA compete with this directive and make it very difficult for programs to provide quality service to learners at all skill levels. The rhetorical idealism of WIOA is belied by the barriers it creates to responding to the literacy needs of a substantial proportion of the ABE/ASE population that many of these learners may need years of instruction before completing—or may fail to ever complete—a postsecondary credential or career pathway should not undermine their right to publicly-funded, high-quality adult basic education programs that help them meet their educational goals. ❖

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Table 1—*ABE/ASE participants, 2014-2015*

Racial group	% of racial group scoring ≤ Low Intermediate Basic	Racial group as % of all ≤ Low Intermediate Basic
African American	62%	38%
Native American	52%	2%
Asian	47%	3%
Hispanic/Latino	45%	25%
White	40%	29%

Data source: OCTAE NRS (n.d.- a)

Is WIOA Good for Adult Learners?
A Response to Amy Pickard's Forum Essay

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I am grateful to have an opportunity to reflect on the essay that Amy Pickard wrote on the federal Workforce Innovation and Opportunity Act (WIOA) of 2014. I confess my thoughts are mixed, admittedly contradictory and without decisive conclusions. I recognize that it is complicated to educate adults who struggled to learn in their K-12 education, who immigrated to the United States and need to learn the English language, and who have other circumstances that prompt them to seek assistance to improve their literacy, as well as their life and work opportunities. I feel comfortable that I've done my best to respond to Pickard's wise commentary, but my best still leaves important concerns unanswered. To move forward, this conversation needs to continue to grow to include educators and learners who deserve the very best education the nation has to offer.

Pickard's essay offers a provocative analysis of the federal Workforce Innovation and Opportunity Act (WIOA) that is important for any educator to read, especially educators who work with adult learners in postsecondary education. Her article focuses on the implications of new federal policy on adult learners in three important areas: 1) an increased emphasis of adult education policy on workforce preparation and postsecondary education to the possible detriment of classroom literacy instruction; 2) a heightened focus on performance measures pertaining to employment for adult learners enrolled in ABE/ASE programs, particularly ABE; and 3) persistent inequities in access and outcomes for students of color, especially African Americans, who seek the opportunity to move into and through ABE/ASE programs. I address each of these issues but in a slightly different order than Pickard by beginning with inequities in ABE/ASE programs for students of color, then by analyzing the workforce focus of adult education, and last, by addressing employment-focused performance metrics reflective of workforce development versus literacy instruction. I conclude with a brief discussion of opportunities and threats associated with WIOA's emphasis on career pathways for adult learners.

Before I address Pickard's three points, it is important that I share her concern for the inappropriate labeling of adult learners. Use of the label of "low-skilled adult" by public policy, including WIOA, as well as the literature, needs to stop. This label reflects a deficit mentality that, at best, depersonalizes students and, at worst, demeans them. Having used the term "low-skilled" myself in some of my own early research and writing on career pathways, I am pleased to say I have changed my ways. Rather than using deficit-oriented terms,

I recognize that it is important to use terms that are descriptive of students' experiences and needs rather than their inadequacies. Hopefully others will follow suit. Without recognizing this problem, it is easy to assume that learners are incapable of achieving success. It is easy and permissible to attribute failure to the students rather than the potentially poor policy that produced the results. This is an important point because, later in her article, Pickard notes the federal adult education and literacy policy is "colorblind" or "race- neutral," but this assertion cuts policy makers too much slack. When we combine the deficit language with the disappointing results achieved by students of color (see Table 1 in Pickard's essay), serious equity questions need to be raised about WIOA.

Moving to Pickard's first major point, I share her concern for the inequitable representation of African Americans and other students of color among low-scoring adult readers who enroll in ABE/ASE programs. I too worry about future implementation of WIOA, but I worry not only because the new incarnation of WIOA may further disenfranchise students of color but also because the adult education and literacy instruction that was part of WIOA had already exhibited inequities in student representation and outcomes. I therefore caution against believing past approaches offer better or worse solutions than future possibilities, but rather I urge readers to be contemplative about any and all change to federal policy. I wholeheartedly agree that improved literacy instruction is needed for adult learners that focuses on their literacy gaps, but I also believe that this instruction should be aligned with reforms that make K-12 education more equitable, that increase funding for both adult education and postsecondary education, and yes, that improve opportunities for adult learners to enter and progress through college to employment. It is important to recognize that, whenever any educational system perpetuates inequities between different racial/ethnic, income, language, and other individually and culturally diverse student groups, that system needs to improve, and it is important to be open to options that may prove effective in producing benefits for all.

Second, Pickard rightly laments the focus on workforce preparation for low-scoring adult readers at the expense of literacy instruction that is needed to live a full and productive life. She suggests that a trade-off will inevitably be made by adult educators who will be forced to choose between using classroom time to enhance students' literacy and to train them for employment. Ultimately, given the performance metrics required of WIOA, this trade-off will favor workforce training. I understand Pickard's argument supporting the importance of literacy instruction, and I agree that meeting students' literacy needs is of paramount importance, but I do not agree that education for employment is an impossible goal to achieve as well. I believe that many adult learners who seek assistance from adult education and literacy instruction recognize the need to improve their literacy, but many also seek better jobs. Adult education and literacy instruction combined with workforce training, as envisioned by the WIOA legislation, seems worth pursuing to optimize the potential benefits for adult learners but these pursuits need to be given careful thought. Like Pickard, I worry about prioritizing workforce training and narrowing the focus of adult education and literacy instruction in ways that do not allow adult learners to acquire the foundational literacy competencies that they need to function productively in society. I accept that this dual approach to adult education demands new models, but I am not convinced that combining adult education and literacy instruction

with education for employment is a futile idea.

With respect to Pickard's worry about WIOA having the effect of narrowing of the curriculum, whether the focus is on adult literacy or employment, I have spent many hours observing adult education classrooms that suggest to me that the curriculum taught in many adult literacy classrooms is already narrow. "Teaching to the test" is already commonplace in adult literacy classrooms and by extension, creaming is also a real concern. Whenever students' test results are a major determinant of program performance and funding, it is inevitable that student enrollment and curriculum decisions will be linked to improve results at the expense of learners who need literacy instruction more. Indeed, I agree with Pickard that creaming is a problem not only because it excludes individual students who could benefit from adult literacy instruction but because it perpetuates a culture of prejudice that can have a detrimental effect on the educational experience for all adult learners. Considering the complexity of this issue, I advise readers to pay close attention to Pickard's essay that warns that a narrowing of curriculum under WIOA may accelerate creaming that is likely to further exacerbate differential outcomes. Metrics that avoid this dilemma are addressed below.

Third, the workforce-oriented performance metrics that dictate successful performance in adult education and literacy instruction deserve scrutiny, as noted by Pickard. Does this mean ABE/ASE instruction can never be integrated with workforce preparation? I think not, but it does mean that measures that dictate the success of adult education and literacy should take into account the needs of many adult learners to meet literacy needs foundational to workforce-oriented preparation for employment. Supplanting workforce training for literacy instruction may limit learners' literacy learning and also diminish their chances of succeeding in preparing for and obtaining

family living-wage employment. However, at a time when all P-20 education is arguably more focused on education for employment—what is sometimes called the "new vocationalism" (Bragg, 2001, p. 1)—it seems unrealistic to expect that adult education and literacy instruction will be exempted from the heightened connections between education and employment that is occurring on all levels of the educational system. I honestly do not believe the latter (education for employment) has to overshadow the former (adult literacy instruction), but I understand that learning for literacy and learning for employment are not an easy match for many adult learners, particularly those who are identified as low-scoring adult readers. Helping adults to prepare for improved literacy while also preparing them for employment requires carefully constructed curriculum and instruction to ensure that students gain the literacy levels that they need to obtain family living-wage jobs.

Finally, because I argue that the integration of adult literacy instruction and workforce preparation is tricky but possible, I feel the need to share some thoughts about the relevance of career pathways to adult education and literacy. Consistent with a whole host of federal policy directives, including the WIOA legislation of 2014, career pathways have emerged as a primary vehicle for youth and adult education. According to a recently signed 13-federal agency letter,

> Career pathways can offer an efficient and customer-centered approach to training and education by connecting the necessary adult basic education [ABE], occupational training, postsecondary education, career and academic advising, and supportive services for students to prepare for, obtain, and progress in a career (dated April 28, 2016).

On the surface this goal is admirable, yet as the saying goes, "the devil is in the detail." If, as Pickard

implies, the focus on career pathways undermines ABE/ASE instruction in favor of workforce training, then low-score adult readers will not benefit from adult literacy instruction to the full extent that they should. However, if career pathways help to integrate curriculum and instruction that meets adult learners' literacy needs and prepares them for not just entry-level jobs but employment that progresses through a series of linked education- and employment-related experiences, then career pathways do offer a promising, potentially liberating option for adult learners. I want to be clear here, I completely agree with Pickard that "ABE/ASE focused on helping low-testing adult learners to obtain a postsecondary credential or career pathway should not undermine their right to publicly-funded, high-quality programs that help them meet their educational goals," but I also do not believe that these goals are mutually exclusive. I worry that adult learners are not well served if their adult literacy instruction leaves them without the skills and knowledge that they need to attain family living-wage employment. To me,

preparing adult learners for employment in the short- and long-term is a necessary goal that need not be pitted against adult literacy but combined to ensure that adults benefit. If this means fighting to ensure WIOA performance metrics do not drive ABE programs out of business, so be it. The fight is worth fighting for adult learners who deserve an opportunity to participate and benefit. ❖

Debra D. Bragg is the founding director of the Office of Community College Research and Leadership (OCCRL) at the University of Illinois at Urbana-Champaign and currently serves on the director of Community College Research Initiatives at the University of Washington. Dr. Bragg's research on the transition of youth and adults to college and employment has been funded by the U.S. Department of Education, U.S. Department of Labor, state governments, and private foundations. Dr. Bragg holds a PhD in comprehensive vocational education from The Ohio State University with specialization in public policy analysis and evaluation.

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"What I Feel in My Heart": Literacy Practices of and for the Self Among Adults with Limited or No Schooling

By Perry, K. H., & Homan, A.

Background and Theoretical Framework

The purpose of this study was to understand the literacy practices of individuals in Africa and the Americas who had between one and seven years of schooling. The questions investigated included: "In what literacy practices do adults with limited or no schooling engage for personal fulfillment? and (2) What do these practices reveal about the nature of literacy for individuals who are often characterized as illiterate?" (abstract, p. 422). Viewing literacy as a social practice, the authors performed a cross-case analysis of 13 purposively selected case studies that included information from 98 individuals from the Americas and Africa. These 13 case studies were part of a larger 24 case study called the Cultural Practices of Literacy Study (CPLS), where the authors collected case data on how literacy is practiced in different cultural contexts.

Engaging in literacy for personal purposes includes literacy activities "related to personal expression, self-understanding and/or identity." (p. 424). Reading or writing for personal purposes is "often overlooked in favor of examining literacy practices related to work or family obligations" (p. 425). This study is important because "understanding what real people do with texts. . . is essential" to understanding literacy (p. 426).

The theoretical framework, literacy as a social practice, is a sociocultural approach to literacy that suggests that literacy occurs

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"within social and cultural contexts and within power relationships" (p. 426). Literacy is not something that one *possesses*, but it is rather something one *does* within the context of social relationships between people and within communities rather than solely within the person (Barton & Hamilton, 2000 as cited in Perry & Homan, 2015). For example, writing a journal entry is an individual event but that practice can be connected to a larger goal such as leaving one's legacy.

The social practice theoretical framework has been used by researchers who examine communities that are considered to be low literate. "Functional literacy" has been used to describe these communities (p. 425). In the United States, this term has been "conflate[d]... with basic literacy skills" (p.425). In truth, a functionally literate individual can effectively read, write and perform mathematical calculations well enough to function in his or her community (UNESCO, 2005 as cited in Perry & Homan, 2015). However, functionally literate individuals are still viewed as low literate and often seen as unworthy (St. Clair & Sandlin, 2004 as cited in Perry & Homan).

Methodology

The authors used two methods of cross-case analysis to analyze the 13 cases. In the analysis of a case, researchers closely examine the particular case for patterns whereas using the variable case method, the authors look for themes between cases (Miles & Huberman, 1994, as cited in Perry & Homan, 2015). Participants in 13 of the 24 cases in the Cultural Practice of Literacy Study (CPLS) database met the study criteria. They were 18 years of age or older and they had less than an 8th grade education or equivalent. The researchers recognized that individuals could develop ample literacy skills using these criteria so they looked more closely at participants' statements about their educational experiences to ultimately determine inclusion in the sample. For example, those who had six years of education but who struggled with reading and writing or had gaps in their education were retained in the sample while others who had six years of education but who did well with reading or writing were not retained because the researchers did not consider this person to be low literate. There were two types of respondents. "Focal participants" participated in interviews and could have also been observed by researchers. Non-focal participants were not interviewed. Instead, focal participants either described non-focal participants' literacy practices or researchers observed non-focal participants' literacy practices at community events. Case study participant locations include five cases from Oaxaca,

In what literacy practices do adults with limited or no schooling engage for personal fulfillment?

A functionally literate individual can effectively read, write and perform mathematical calculations well enough to function in his or her community.

Mexico. Other case locations included two cases from Vancouver, Canada, Sudanese families and Spanish migrant farmer worker families in Michigan, and single cases from Bolivia, Puerto Rico, and Uganda, Africa.

Findings

In the initial data analysis, the researchers looked for literacy activities that participants did in the "social activity" realm (p. 434). They found domains such as entertainment and spirituality. Purposes for engaging in literacy included: "(a) literacy-related purposes (e.g. "to help children read"), (b) spirituality (e.g. to thank God"), (c) entertainment (e.g. "to imagine cooking different dishes"), (d) personal/artist expression (e.g. "to reflect on life and personal relationships"), and (e) community participation (e.g. "to organize a social event") (p. 435). To understand and analyze the context of each participant's literacy practices, the researchers constructed a narrative for each participant that consisted of the person's background including formal schooling, literacy practices, and the respondent's beliefs about her/his literacy abilities. Then the authors looked across cases to find themes.

After looking within each transcript for themes, the researchers looked across cases for themes. The authors listed the major theme and provided the literacy portrait of one individual followed by quotes from other cases to provide examples that particular type of literacy practice in several participants' lives. The major theme was that participants used literacy practices to *cope with life* and the challenging situations they faced. The case of Raul, imprisoned in Oaxaca, Mexico, was discussed. At the time of the interview, Raul was training to become a tailor. He described his childhood home as one where reading occurred. Raul wrote poems inside the soccer balls he sewed as part of his job in prison. His writing helped him escape from the realities of prison. Others imprisoned participants wrote poems and songs and read fiction and non-fiction books as a means of escape.

In addition to using literacy as a diversion, participants used it to face their problems. Individuals read the Bible to find answers to their problems. Others journaled to work through issues such as problems with family members. Several respondents did not see this personal writing as "real writing" (p. 440).

Last, participants engaged in literacy practices for enjoyment or relaxation. Catalina thought she was a poor reader but she enjoyed reading. She sought help from a friend to improve her literacy skills so she could more effectively help her children with their homework. Catalina also watched movies in English and read the Spanish subtitles and she read comics while preparing meals.

The major theme was that participants used literacy practices to cope with life and the challenging situations they faced.

A second theme discussed how particular circumstances curtailed participants' literacy practices.

A cross-case analysis revealed that respondents valued oral traditions. Reliance on oral traditions in individuals with poorer literacy skills has been documented (Purcell-Gates, 1995 as cited in Perry & Homan, 2015). However, there are other reasons for oral traditions such as "storytelling, passing along family history, or engaging in religious experiences" (p. 445). Reliance on oral language is also common in communities of people who are oppressed. Particular communities might have a long tradition of telling oral histories.

A second theme discussed how particular circumstances curtailed participants' literacy practices. Working long hours and caring for children prevented respondents from having time for activities such as reading. The cost of reading and writing materials was prohibitive for some but others thought that writing letters was cheaper than calling friends and relatives.

Participants' perceptions of their literacy abilities affected their goals. Many equated lack of formal schooling with their poor literacy. Others differentiated between school literacy practices and what they did on their own. Still others had positive experiences with literacy in school. Several were motivated to learn to read to understand the Bible in "Christian contexts, such as Mexico, Nicaragua, and parts of Sudan" (pp. 448) but literacy for religious purposes was not common among Canadian First Nations people.

Conclusion

While there is much to commend about this research study, including its global scope, there are limitations. First, the authors included participants who had between one and seven years of primary schooling. It would have been helpful to know the literacy skills individuals possessed. Testing individuals and assigning them levels of literacy proficiency as described in the *OECD Outlook: First Survey of Adult Skills* (2013). For example, those who are assessed below level one can locate basic information in a text and "Only basic vocabulary knowledge is required, and the reader is not required to understand the structure of sentences or paragraphs or make use of other text features" (p. 64). Testing and labeling those below a particular level as "low literate" may have provided a more consistent method for documentation of literacy skills. Instead the researchers relied on the number of years of primary schooling and participants' self-reported confidence concerning their literacy skills. Second, while the inclusion of data from non-focal participants increased the number of respondents in the study, secondhand reporting of literacy practices and researcher observations seem less desirable than conducting personal interviews with participants. Third, the authors refer to "literacy practices of and for the Self" (p. 422) and also having learners engage in

Many equated lack of formal schooling with their poor literacy. Others differentiated between school literacy practices and what they did on their own.

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literacy practices "related to … self-understanding and/or identity" (p. 424). Self and identity are not necessarily synonymous and clearer definitions of each term would aid in understanding.

Identity theory defines individuals as having many identities or roles that comprise a stable Self (Serpe & Stryker, 1987). The salience of a person's identity depends on how many contexts in which that identity is acted out. For example, a person with a very salient identity as a teacher may teach in many social groups and contexts and may refer to herself as a teacher often. Investigations into how to increase the salience of the literacy identity of the low literate is in order.

This study's findings have implications for literacy education. Accountability standards for literacy are based on preparing individuals for college and for careers with little emphasis on learners' personal goals. Some literacy programs do not consult the learners about their own objectives. These goals should be considered when planning programs. Personal literacy practices such as journaling, free writing, or having book clubs can "encourage development of personal literacy practices" and help individuals "make sense of their lives" (p. 451). In addition, it is important to acknowledge the many literacy activities in which low-literate students engage on a daily basis. They need to know literacy is not necessarily equated with the number of years one has attended school but that literacy activities and learning occur in informal settings.

Personal literacy practices such as journaling, free writing, or having book clubs can encourage development of personal literacy practices.

It is important to acknowledge the many literacy activities in which low-literate students engage on a daily basis.

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Reading for Pleasure and Reading Circles for Adult Emergent Readers: Insights in Adult Learning

By Sam Duncan

2014; National Institute for Adult Continuing Education, Leicester, England
76 pages, paperback, $19.95

Reviewed by

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Sam Duncan's *Reading for Pleasure and Reading Circles for Adult Emergent Readers* is both comprehensive and accessible. Duncan covers several topics relating to starting and running reading groups. This information will certainly be useful for her intended primary audience of reading circle facilitators and adult literacy teachers. Since this text was clearly written with various literacy levels in mind, adult learners interested in the material will also find this a readable guide.

Accessibility is a prominent feature throughout the book. The large font and generous use of subheadings make each chapter "reader friendly." The vocabulary and sentence structure are generally simple. Special terms such as *emergent readers, reading for pleasure,* and *negotiated syllabus* are defined and discussed. Italics are used for emphasis within blocks of text, so that the reader knows to pay attention to important information. A glance at the index demonstrates the effectiveness of Duncan's chapter titles and subheadings. The chapter titles are concise and descriptive, and the subheadings serve as good summaries of the corresponding sections. For example, in the chapter "Background Theory," there is a section titled "Reading for Pleasure" with the following lower-level subheadings: "What is reading for pleasure?" "What do we read for pleasure?" and "How do we read for pleasure?"

These organizational strategies make this book a useful guide for both types of reading circles that Duncan discusses: those run by an outside facilitator and those run by the members themselves.

The content of the book encompasses three main topics: basic terminology and research, practical knowledge for reading circle facilitation, and case studies of reading circle members. First, Duncan defines and discusses reading for pleasure, reading circles, and why people might want to engage in both practices. This material serves to familiarize readers with the language and direction of the book. A winning feature in the first two chapters are boxes titled "inspirations," which contain snippets of how some individuals throughout history learned to read and first-person statements about why people read. These boxes explicitly connect the content of this book to everyday life and ensure that less proficient readers do not feel alienated.

A winning feature in the first two chapters is boxes titled "inspirations," which contain snippets of how some individuals throughout history learned to read.

Second, Duncan provides useful information for individuals looking to facilitate reading circles. Topics covered include organizing the first group meeting, models of reading circles, facilitators' roles, readers' goals, selecting texts, maintaining reader interest, and measuring the impact of the reading circle. This comprehensive discussion also covers research, especially in the fourth chapter "Teaching and Learning." Here, Duncan summarizes findings about reading circles from qualitative research and highlights the potential learning outcomes of participating in such groups. Researchers and practitioners who desire to learn more about the effectiveness of reading circles will find this chapter particularly insightful.

Duncan summarizes findings about reading circles from qualitative research and highlights the potential learning outcomes of participating in such groups.

Third, Duncan presents two case studies of individuals who have participated in reading circles. After taking her children to reading events at her local library, Anna joined a reading circle because she did not finish school and wanted to improve her reading. She discovered that she loves immersing herself in the plot and characters of a novel. She believes that the reading circles have increased her confidence in reading and discussing. Tom mainly works manual jobs that do not involve reading, so he joined a reading circle recommended by a librarian to get more reading practice. He found that he enjoys historical books and biographies. He especially likes the discussion aspect of reading circles, which allows him to consider other people's ideas. Clearly, Anna and Tom differ in their backgrounds, preferences, and motivations, which reiterates the diversity of readers' goals that Duncan discusses elsewhere in the book. These case studies provide real-world examples of people who have joined and benefitted from reading circles, which will be encouraging to adult learners considering reading circles.

Reading circles do not have to be limited to communities with well-established adult literacy support. Duncan presents a variety of resources to start and support reading circles, including children's schools, faith communities, and other local groups, which may be more accessible than libraries and adult education centers in some areas of the world. This guide's relevance for various parts of the world is a major strength.

Duncan ensures that there is something for everyone in this book. By highlighting the diversity of reading circles, she reassures readers that such reading groups can accommodate their particular needs and interests. Her in-depth and accessible guidance on starting and running reading circles will be useful to prospective facilitators at various reading levels. Her review of the learning outcomes of reading circles will especially appeal to researchers and practitioners. Finally, her case studies will demonstrate to readers of all backgrounds how reading circles have positively impacted the literacy skills and self-efficacy of real individuals.

Duncan presents a variety of resources to start and support reading circles, including children's schools, faith communities, and other local groups.

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Unfit to Be a Slave: A Guide to Adult Education for Liberation

By David Greene

2015; Sense Publishers, Boston, MA
149 pages, paperback $32/hardcover $99

Reviewed by

Erik Jacobson

*Montclair State
University*

Unfit to Be A Slave was written to "serve as an active guide in supporting adult education for liberation" (Greene, 2015, pg. 2) Drawing on more than 40 years of experience in education and community organizing, David Greene makes a sustained argument for the ways in which literacy, and education more broadly, can help the working class counter the oppressive nature of education in a capitalist society. As part of this, Greene focuses a lot of his attention on popular education—grassroots and community-based initiatives in which teaching and learning are explicitly connected to efforts to address systemic injustice. Greene suggest that this kind of work is grounded in "a great love of people" (pg. 15) and throughout the book there is ample evidence of how much he cares for the individuals with whom he has worked and the communities in which he was a part. Although at times the book addresses complicated and potentially divisive topics, Greene's tone is always personal and humanistic.

In acting as a guide, Greene makes sure to point out that current efforts at liberatory pedagogy are built upon a long history of such activism. He discusses projects from multiple time periods and from many areas of the globe. The title of the book itself comes from the autobiography of Frederick Douglas, who spoke directly about the power literacy had for breaking the bonds of slavery. Throughout the book

Greene draws heavily on the work of Freire and Horton, especially their calls to develop more systematic analyses of the ways that socioeconomic conditions affect the provision of adult education. In particular, Greene highlights how the global system of capitalism that creates exploitative conditions is ignored while learners are often blamed for their own lack of opportunities. In keeping with the popular education approach, Greene suggests this situation should itself become part of the curriculum. He also presents a number of other topics (e.g., racism, environmental justice, etc.) that are good candidates for creating the type of discussions that connect students' work in the classroom to their lives outside of it. Each chapter ends with discussion questions that invite the reader (or readers) to extend the analysis and articulate their own positions.

A key point that Greene returns to throughout the course of the book is how much is lost when society as a whole is not prepared to learn from the wisdom and insight of adult learners. As such, he makes it clear that students' voices need to be at the center of popular education activities. The book itself follows this principle, as it is full of quotes from a variety of students. Learners' voices are often used in calls for more funding, but here Greene presents learners' critiques of the educational system and larger structures. Their words are not simply window dressing to make the project look participatory; their analyses help support the larger arguments Greene is making. In particular, the perspectives of the late learner leader Calvin Miles inform the discussion. Greene uses Miles' words to call adult educators to task when he feels they are working as gatekeepers, rather than in solidarity with students and the working class. Indeed, many of the learners call for a different system of adult education, one that moves beyond training for the workforce and towards opportunities to fully realize their potential.

As noted above, Greene's tone is an important aspect of the book. He illustrates points with events from his own experience and is thus able to provide concrete examples of the theoretical topics he covers. Another strength of the book is the way Greene unapologetically uses the vocabulary of radical critique. He indicts capitalism, exploitative social welfare regimes, and those benefitting from the poverty of others without resorting to euphemism. On the other hand, one weakness of the book is in its structure. Many of the chapters contain a large number of subsections, each with their own title. Some of these are as short as a few sentences, some as long as a few pages, and there are no formatting conventions used to set-off passages that seem to be designed to be subsections. This approach, combined with sections in

Greene highlights how the global system of capitalism that creates exploitative conditions is ignored while learners are often blamed for their own lack of opportunities.

He makes it clear that students' voices need to be at the center of popular education activities.

The narrative details victories, small and large, and what can be learned even when an initiative does not meet its main goal.

which the author skips around a bit when presenting particular topics, makes it harder at times to understand the structure of the discussion. The author also repeats himself in a number of places, at which point the personal tone and structure feel a little distracting.

In the end, however, even if the writing does not always flow smoothly, sympathetic readers will still feel themselves to be fellow travelers. In that way, although anybody interested in exploring the connection between socioeconomic and sociopolitical policy and education will find something of value here, the most receptive audience is bound to be people who already share some of the author's viewpoints. The book contains suggestions for classroom practice, for supporting the development of learner leadership and for building new kinds of spaces for liberatory education. The narrative details victories, small and large, and what can be learned even when an initiative does not meet its main goal. The book is both a passionate call to realize the full potential of adult education and the personal testimony of somebody who has been working on that project for most of his life. He urges readers not be afraid of being radical and his story illustrates what can be gained when we live out our commitments to their fullest.

Erik Jacobson, Associate Professor at Montclair State University, worked in Japan (Nara prefecture) as an assistant English teacher in a public high school. This was part of the Japan Exchange and Teaching Program, sponsored by the Japanese government. After he began working in adult basic education (ABE) in the United States, he returned to Japan to conduct research. He has continued to examine ABE in Japan and has also led professional development workshops in different parts of the country. He is also interested in technology, and is the author of *Adult Basic Education in the Age of New Literacies*.

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Free Online Courses for Adult Basic Skills Learners

T here are many free courses now for online learners. In this Web Scan column I include some that may be suitable for adult basic skills (including English language learning) programs. Many adult basic skills programs now offer blended (integration of face-to-face and online) learning. Some of these courses could be the online component.

1. Peer2Peer University

Peer2Peer University **https://www.p2pu.org/en/** helps libraries to organize blended learning study groups called Learning Circles for community adults. Peer2Peer University offers a free facilitator guide for organizing these.

2. Blended Learning for the Adult Education Classroom

I have written a free online guide for adult basic skills educators that shows how to organize blended learning, provides many examples of what adult basic skills educators are doing with blended learning, and offers a long appendix of mostly free resources. See **http://www. passged.com/educators/blended-learning.php.** Perhaps some of these free online courses could help, too.

Reviewed by

David J. Rosen

*Newsome Associates*

3. Alison
https://alison.com/

Free online courses including diploma courses; digital literacy and IT skills, personal development and soft skills, languages, school curriculum, safety and compliance, health literacy; and financial and economic literacy.

4. FutureLearn
https://www.futurelearn.com/

Free online Open University courses offered by leading universities and cultural institutions from around the world. Categories of courses include business and management, creative arts and media, health and psychology, history, languages and cultures, law, literature, nature and environment, politics, STEM(science, math, and technology), sport and leisure, and teaching. Courses are delivered a step at a time, and are accessible on mobile devices and desktops.
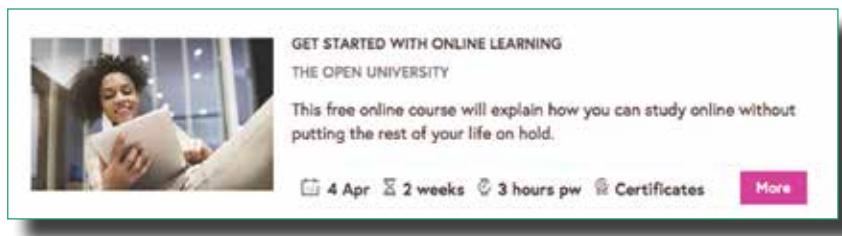
5. GCF Learn Free
http://www.gcflearnfree.org/

Free online courses and other free learning resources. Currently available classes, as of early 2016 include Microsoft Word, Excel, Excel Formulas, PowerPoint, and Access. Other learning resource categories include technology, reading, math, everyday life, work and career, and mobile apps, among others.

6. Khan Academy

https://www.khanacademy.org/

Free online classes in math, science, computer programming, history, art, economics, and more.

7. Digitallearn.org

http://digitallearn.org/learn

Free, short, online, video-based instruction in English and Spanish on this Public Library Association and Institute of Museum and Library Services-sponsored website include a variety of technology and computer usage, work readiness, and social media lessons.

8. USA Learns

http://www.usalearns.org/

This free video and print-based English language learning course can be used by independent learners on their own or by teachers who can enroll classes of students. It can be used on a desktop or laptop computer and has been recently (late 2015) optimized for smartphones and other portable digital devices.

David J. Rosen is an education consultant in the areas of adult education, distance education and technology.

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- The program of study is flexible. Students have the option to specialize in one of 4 areas or do course work across any combination of these.

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