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Expanding Emergent Literacy Practices: Busy Intersections of Context and Practice

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Abstract

This paper examines how adult education classrooms serving LESLLA students engage learners in literacy practices, support the growth of their reading proficiency, and prepare them to utilize and continue developing their emerging literacy practices outside of program contexts. In addition to a review of previous research, two new studies are presented that inform these issues. One study looks critically at LESLLA student data from standardized reading tests used for evaluating and improving programs. The second study examines the long-term growth of literacy proficiency and literacy practices and elaborates a model of how the two interact and support each other across the life span. Taken together, these findings suggest a new paradigm for evaluating program impact and designing continuous program improvement processes. Implications for program design and policy to better meet the needs of LESLLA learners are discussed.

Introduction

The highly contextualized nature of literacy practices has profound implications for adult literacy education. Literacy has been socialized in Western societies within the context of powerful institutions, particularly schools and organized religions (Goody & Watt, 1963; Olson, 1977). Individuals typically acquired basic literacy skills as participants in these institutions, with access to reading and writing gated by these powerful

institutions. It is thus not surprising that early efforts to teach literacy to adults were based on a conception of inculcating in the adult learners not only the technical skills required to read and write, but also the system of values and practices associated with the institutional sponsor of literacy. Over time, the number and types of these sponsors has increased in Western societies, including the United States (Brandt, 2001).

Ethnographic research in the sociohistorical development of literacy in a variety of ethnic communities found that cultural features of both sending and receiving communities—particularly their histories with writing systems—exert powerful influences on the resettlement and integration of adult migrants, including LESLLA migrants and their emerging literacy practices (Reder, 1987). Systematic comparisons of emerging literacy practices in different sociohistorical contexts of contact between indigenous cultures and their host societies found organization of literacy practices in functional domains of life such as commercial activities, religious activities, governance activities, and school activities. Each domain had characteristic literacy practices (often in distinct languages or scripts) with multiple roles for participants and means for socializing individuals into those literate roles. Emergent literacy practices were organized and socialized differently in the various domains of activity, with social meanings of literacy derived from the domain itself. The domain of schooling is but one of the life contexts in which literacy practices occur, one carrying very different social meanings than, say, literacy practices in the church domain, the commercial fishing industry or village governance. Adult education programs in the studied communities were often socially constructed as extensions of other domains, including schools, and would not be familiar to individuals unless they had prior experience with, say, the school domain.

Adult basic skills programs attempt to facilitate adult literacy development by engaging adults in basic skills programs or other social practices that involve the use of writing. This involves *recruiting* adults to participate in those basic skills programs or other social practices and *retaining* them sufficiently long to develop the needed new skills and knowledge. Such efforts often entail large differences between the

settings, the materials, and the literacy practices of the program and those of the learner. These contextual differences may create logistical or cultural barriers to participation for many learners. These contextual differences sometimes engender conflicts between the goals, needs, and assumptions of program providers and those of the learners they seek to serve (Brandt, 2001; Purcell-Gates et al., 2000; Reder, 2007; Reder & Green, 1985; Street, 1985).

Adult LESLLA learners are particularly impacted by these contextual differences. Qualitative observations of adult LESLLA learners in language classrooms show difficulties they encounter in comprehending and engaging with the schoollike contexts of programs and classrooms and interacting in the language of instruction (Hellermann, 2006). Having not previously engaged deeply with literacy in an educational domain, adult LESLLA students encounter special challenges when navigating second-language and literacy classrooms because of their lack of experience with the literacy practices, social meanings, and participation structures that characterize so many of these educational settings (Hellermann & Harris, in press; Ramírez-Esparza, Harris, Hellermann, Richard, Kuhl, & Reder, 2012). For example, in a video-based observational study of second-language classrooms, Ramírez-Esparza et al. (2012) concluded that low-education second-language learners more often assume a novice role in interactions, more often let their partners who have more education initiate pair activities, and less often ask for help from others, demonstrating their difficulties with the interactional practices of formal classroom settings.

Although these second-language classrooms are intersections of many linguistic, cultural, and institutional systems in which all students must engage, the intersection framework is particularly compelling for understanding the educational process of LESLLA students. LESLLA students must not only acquire the target language and literacy abilities of the program, but they must also do so in an unfamiliar classroom and institutional context imbued with implicit assumptions about the relationship between literacy and educational experiences. Most programs rely on the written word, whether in the target language or in

translation, for getting information to students. Instructors frequently use print directly in teaching language—board work, textbooks, handouts, and so forth. LESLLA learners need to develop three intersecting sets of skills simultaneously: learning the target language, processing print itself, and reading in the target language they are acquiring (Kruidenier, MacArthur, & Wrigley, 2010).

Researchers and practitioners have developed effective pedagogical practices for “bringing the outside in” to classrooms to better support LESLLA learners (e.g., Wallerstein, 1983; Weinstein, 1999; Wrigley & Guth, 1992).

Although some practitioners have acquired considerable experience and expertise working with LESLLA students in such contexts, they frequently report that their ability to implement effective instruction for LESLLA students in their classrooms is constrained by limited systemic resources and conflicting programmatic priorities. Even though researchers and practitioners have learned much about working with LESLLA students in the classroom, these program-level constraints hamper needed pedagogical innovation, dissemination, and professional development.

This paper reviews, expands on, and connects two lines of research that bear on these difficulties faced by LESLLA learners and the programs serving them. The first line of research examines the “parking lot” paradigm of adult education and its logic model for evaluating the impact of instructional programs on adult LESLLA students’ literacy. New research findings are presented that point to some serious empirical problems with the “parking lot” paradigm, prompting consideration of an alternative, the “busy intersection” paradigm. The second line of research is about practice engagement theory (PET). After reviewing previous research bearing on PET, new findings are introduced that extend its reach into lifelong literacy development. These two conceptions—the “busy intersection” paradigm and practice engagement theory—when considered together, offer a new way to think about literacy development in adult LESLLA learners and point to some important implications for programs and policies that will better support them.

The Parking Lot: A Paradigm of Program Impact

In many countries, adult literacy programs have historically acquired important characteristics of local primary/secondary school systems in which attendance is compulsory. The similarity of these noncompulsory adult education programs to compulsory K–12 programs has been described as the parking lot conception of education, in which programs try to recruit and retain students in order to keep the seats in classrooms full, analogous to filling the spaces in parking lots with cars (Leander, 2009). There are also growing financial and accountability pressures within adult education programs that are formulated in terms of student flows into classroom programs, hours of attendance in programs, and various types of exits from programs. These concepts and terminology are indeed reminiscent of the business of operating a fee-based parking lot. This paradigm is often believed to make adult literacy education programs easier to fund, evaluate, and manage, which also makes them accountable to and scalable within larger systems.

A central but generally untested assumption of this paradigm is that more instructional hours lead to larger learning gains. Federal and state agencies in the United States, for example, often report cross-tabulations of adult student test scores to show that greater learning gains are associated with increased hours of program attendance. Such results are used to demonstrate the effectiveness of instruction: the more instruction students receive, the larger are their learning gains (California Department of Education, 2004; CASAS, 2003; Connecticut State Department of Education, 2009). This relationship is seen as important for demonstrating program effectiveness in the absence of a control group, since literacy proficiency may grow over time in adults who do not participate in programs as well as in adults who do participate (Reder, 2009, 2012). Although this relationship is consistent with a picture of instructional effectiveness, other mechanisms could underlie the positive relationship between hours of attendance and learning gains. For example, students who sense that they are learning

more might be more likely to persist with the program (attendance typically being noncompulsory in adult education classes).

Problems in the Parking Lot: To illustrate how the challenges faced by adult LESLLA students develop within adult education programs, let's examine some comprehensive administrative data from adult education programs offered within the state of Oregon in the United States. These data were collected by numerous programs as part of their reporting and accountability process for the federal funds received for providing adult education. Students' demographics and standardized CASAS (Comprehensive Student Assessment Systems) English reading, listening, and math test scores were collected by programs as students entered and progressed through adult education classes.¹ The CASAS reading tests are the same as those used in the previously cited reports by California and Connecticut that both show positive associations between instructional hours and reading gains. These data reflect all student activity in all federally funded adult education programs in each state over a three-year period, July 1, 2001, to June 30, 2004. Unique statewide student identifiers allow linkage of records across programs so that students in the data set who move from one program to another in different locations in the state can be followed. Student characteristics in the data set include age, gender, race/ethnicity, native language, years of schooling, and highest degree attained (in any country).

Demographic characteristics about native language and years of schooling were used to identify LESLLA students within this large set of student records. Of the 87,150 unique adult education students in this data set, 7,653 had a native language other than English and three or fewer years

¹ CASAS tests are constructed from an item bank of more than 5,000 test items. Each test item has an established difficulty level based on extensive field testing and analysis. Item Response Theory (IRT) is used to establish the item's difficulty level on a common scale ranging from 150 to 260. The functional context of CASAS test items includes applied reading, math, and listening in a variety of simulated real-life situations. CASAS tests including the reading tests used in this analysis are one of the few tests approved for use in the National Reporting System (NRS), which is used by federal and state governments in the United States.

of schooling, operationally identified here as LESLLA students. Sixty-four percent of these LESLLA students were female, and 36% were male. At the start of the three-year study, their average age was 33 years. The most common first languages among these LESLLA students were (in descending order) Spanish, Vietnamese, Chinese, Russian, Lao, Korean, Cambodian, Tagalog, Farsi, and Hmong. Looking at their English reading proficiency test scores, we see a wide range of proficiencies among the adult education students with LESLLA backgrounds. The largest group, comprising 28% of the LESLLA students, scores in the lowest CASAS range (level A, “Beginning Literacy/Pre-Literacy,” according to CASAS documentation). But the remaining 72% of the LESLLA students have English reading proficiencies scattered broadly among the higher CASAS levels, B, C, D, and even E. The details of this wide distribution are less important here than the conclusion that many adults with LESLLA backgrounds *do* progress over time and gradually acquire proficiency in reading English.

We cannot assume that the LESLLA students testing at higher English reading proficiency levels necessarily acquired their proficiency within the adult education system. The analytical database does not contain information about how long they have been in the country or how much adult education they may have taken prior to July 2001. But we can get a good idea of how their proficiency develops while they are participating in the adult education system by looking more closely at changes in their reading test scores within the data set.

Among these LESLLA students, 1,023 had two or more reading test scores. Of these, 1,008 also had complete demographic and attendance data records. Students with fewer than two reading test scores in the data set either had been given a listening test rather than a reading test (depending on the program’s assessment policy) or, if given an initial reading test, had not stayed in the program long enough to be assessed a second time.²

² To meet program reporting requirements, students were generally given reading tests upon program entry and then retested periodically after so many hours of instruction. So, the longer students stay in a program, the more times

Overall, the LESLLA students' lack of progress on the reading tests is stunning: the mean reading gain is about two CASAS scale points, with widely distributed differences in individual reading gains. To provide an understanding of some of the variables associated with LESLLA students' (lack of) progress in reading, ordinary least squares linear regression analyses were conducted on their demographic, attendance, and reading test data. The dependent variable is the student's gain in reading test scores between the initial assessment and the final assessment. Independent variables are the initial reading test score, the number of total hours of attendance between the first and last reading test, age (at the time of the first reading test), and gender. Table 1 shows the results of three regression analyses, each summarized in a column of the table.

	Standard Model	Corrected Model	2-Test Model
Initial Reading Proficiency	-0.098****	-0.089****	-0.181****
Hours of Attendance	0.005****	-0.002	-0.001
#Tests Taken	---	2.021****	---
Age	-0.033**	-0.040***	-0.059*
Gender	-0.254	-0.513	-0.722
Constant	23.589****	19.707****	44.427****
N	1008	1008	333
Adj. R ²	.078	.144	.131

**** p < .001 *** p < .01 ** p < .05 * p < .10

Table 1. Regression Models of LESLLA Students' Gains in Reading Proficiency

The labels for the independent variables, the N and the adjusted R² (proportion of variance explained) for each model, are shown in the first column. Estimated coefficients of the independent variables in the "Standard Model" are shown in the second column (except for number

they tend to be tested. Equivalent alternative forms of the reading test were available for use in these assessments, which were, in general, appropriately administered, so a given test form was not administered twice to a given student within a six-month period, per the test developer's recommendation. A small number of students who received a given form twice within a six-month period were omitted from this analysis.

of tests taken, which is not in the Standard Model). This model accounts for only 8% of the variance of the gain in reading test scores based on initial reading test scores, hours of attendance between the initial and final tests, age, and gender. Initial reading proficiency, hours of attendance, and age are statistically significant predictors of proficiency growth (younger students gain more proficiency over time, with other variables held constant). Gender does not predict proficiency growth.

An important feature of the Standard Model is its significant positive coefficient for attendance hours. One interpretation of this coefficient is that it reflects the positive impact of instruction on learning gains: the more hours students attend, the more they learn. As important as this interpretation seems for program evaluation purposes, there are other possible interpretations that should be considered.

In general, program assessment policy is that students be reassessed after so many hours of instruction or attendance, often to make sure that the institution does not lose the assessed student head count for accountability and funding purposes (which requires periodic progress tests). This results, of course, in a positive relationship between the number of hours and the number of times a student has been tested. Since all test score results are maintained in the student database, we can control for the number of times a student has taken the reading proficiency tests. In the “Corrected Model,” the number of tests (two or more) is added as an independent variable in the regression model. In the “2-Test Model,” only students having exactly two reading tests are included in the regression model.

The Corrected Model shown in the third column of Table 1 adds the number of tests taken as an independent variable to the Standard Model. With the number of reading tests entered into the model, the number of attendance hours is no longer statistically significant, whereas the number of tests taken is a statistically significant and positive predictor of learning gains. Since we excluded any students from our analysis who took the same form of the reading proficiency test within a six-month period (based on technical specifications of the test maker), the effect of number of tests should not be interpreted as a test item repetition artifact but as a more general measure of familiarity/skill with testing procedures. The

major difference between the Standard and Corrected Models, of course, is that hours of attendance is no longer a significant predictor of reading gain once the number of tests taken is statistically controlled.

The same result is found in the 2-Test Model, shown in the fourth column of Table 1. Instead of controlling for the number of tests by entering this number into the model, as is done in the Corrected Model, only students with exactly two reading proficiency tests are included in the analytical data set used in the 2-Test Model. This restriction eliminates two-thirds of the LESLLA students from the data set, leaving 333 students. As in the Corrected Model, the number of attendance hours is not a statistically significant predictor of LESLLA students' reading gains in the 2-Test Model.

Interestingly, other recent classroom research studies also find no significant relationship between hours of instruction and changes in a variety of literacy measures. Condelli, Wrigley, and Yoon (2009) reported weak and inconsistent effects of attendance hours on reading outcomes in adult ESL students. Miller, Esposito, and McCardle (2011) compiled results on a set of large random control trials (with adult education students randomly assigned to instructional conditions), none of which found statistically significant relationships between instructional hours and pretest/ posttest changes in a wide variety of reading measures.

Do the small overall reading gains in the present study, coupled with the lack of relationship between instructional hours and reading gains, imply that these programs are ineffective for LESLLA students? Not necessarily. The lack of association between hours of attendance and learning gains found in these data is consistent with numerous recent experimental classroom studies of adult reading instruction that have found no significant effects of hours of classroom attendance on a broad range of outcome measures (Condelli et al., 2009; Miller et al., 2011). Although a lack of program effectiveness is one possible interpretation, there are a number of other possibilities to consider. It is possible that students are learning and progressing in these programs but that the standardized assessments are not well aligned with what is being taught and learned in the classes. It is also possible that the relatively short intervals between

tests are too short to capture the impact of instruction—what is essentially a slow, long-lasting learning trajectory that is stimulated by program participation, one that does not materialize on the timescale of the test–retest cycles used by programs for accountability purposes. Proficiency development that has occurred outside of classroom-based programs may have resulted in many students’ (with LESLLA backgrounds) acquiring the relatively high levels of English reading proficiency evident in the distribution of their test scores when they later enter programs.

Can these results regarding the impact of classroom instruction be seen by looking only at the lowest-level LESLLA students as opposed to the broader population of LESLLA students, many of whom had already developed higher levels of reading proficiencies? To consider this, the three regression models described above were applied to the subpopulation of LESLLA learners whose initial reading scores placed them in what CASAS defines as Level A—“Beginning Literacy/Pre-Beginning”—which includes those with initial reading scores of 200 or below. Table 2 summarizes the results for this lowest level of LESLLA students. This subpopulation consists of 378 students compared to the larger group of 1,008 students considered above, about one-third of the broader LESLLA student population.

	Standard Model	Corrected Model	2-Test Model
Initial Reading Proficiency	-0.131***	-0.157****	-0.287****
Hours of Attendance	0.010****	-0.002	-0.001
#Tests Taken	---	3.015****	---
Age	-0.077**	-0.071**	-0.059*
Gender	-0.093	-0.315	-0.722
Constant	30.052****	31.362****	44.427****
N	378	378	119
Adj. R ²	.075	.169	.102

**** p < .001 *** p < .01 ** p < .05 * p < .10

Table 2. Regression Models of Lowest-Level LESLLA Students’ Gains in Reading Proficiency

Comparison of Tables 1 and 2 reveals that all statistically significant model coefficients estimated for the larger LESLLA student population

are also statistically significant in the corresponding models for the low-level LESLLA student subpopulation (and vice versa). For LESLLA students at all literacy levels, hours of attendance is a statistically significant predictor of reading gains *only* within the Standard Model; hours of attendance is *not* significant in either the Corrected or 2-Test Model. This is the case of looking only at the lowest literacy level of LESLLA students (Table 2) or at the broader group of LESLLA students at all literacy levels (Table 1). Hours of attendance does not predict reading gains when test-taking experience is controlled as it is in the Corrected Model and the 2-Test Model.

These results pose a serious problem for the parking lot paradigm. With programs strongly incentivized to maximize seat time by keeping classes full, by students' attending regularly, and by measuring learning outcomes as test score gains, there should be demonstrable positive relationships between hours of attendance and reading gains. Such a relationship is seen in programs' own accountability data only when instructional hours is confounded with test-taking experience. When test-taking experience is controlled, we do not find this positive relationship. There is another way to conceptualize how programs impact LESLLA students' literacy development. To understand this, we need an alternative paradigm of the classroom.

An Alternative Paradigm: The Busy Intersection

The parking lot paradigm has found great traction in adult education in the United States (and perhaps in other countries as well), in part because the typically short duration of adult students' participation in programs tends to privilege correspondingly short-term conceptions of learning and program impact on learning. An alternative to be considered is the "busy intersection" paradigm. The busy intersection paradigm emphasizes how the adult education classroom/program fits into the life histories and learning trajectories that students bring with them to adult education and the formative or even transformative classroom

experiences that shape the direction, motivations, skills, and tools they take with them to support continued learning and development outside of the program. Some of the distinctive differences between the parking lot and busy intersection paradigms are summarized in Table 3.

“Parking Lot”	“Busy Intersection”
Bring people to literacy	Bring literacy to people
Fill seats & retain students	Adults come to programs along different life pathways
Programs provide <i>services</i> to students	Programs are <i>resources</i> used by active learners
The longer students stay, the more they learn	How long students stay is not as important as the directions and tools they exit with
Learning pathways are within program	Program is part of learning pathways through life histories
Key program outcome is short-term <i>proficiency gains</i>	Key program outcome is increased engagement in <i>literacy practices</i>

Table 3. Two Paradigms of Adult Literacy Programs

For LESLLA students in particular, their intersections are personal histories and migrations that are deeply embedded in sociohistorically constructed intersections of cultures, nations, and languages. Ethnographic research on the development of literacy in a range of ethnic communities indicates that literacy development is socially organized into domains of literacy practices, such as domains of religion, commerce, government, and education, all of which coexist and intersect as historically situated literacies. The social meanings and participation structures of specific literacy practices are influenced by both domain-specific values and role-based distinctions within collaborative literacy practices. These social meanings and participation structures shape the opportunities that individuals have for becoming literate in various contexts (Reder, 1987; Reder & Green, 1983).

Many classroom-based programs initially attract and retain LESLLA learners because of the social environment constructed and shared by the students and teachers (Baynham, 2006; Santos & Shandor, 2012). In many respects, classrooms and programs can function as “communities of practice.” Socialization into such communities is integral to the learning

processes taking place among participants (Wenger, 1998). Many low-educated adult students may bring “legitimate peripheral participation” (Lave & Wenger, 1991) into these classroom communities, giving rise to expansive social interactions that engage them in new literacy practices and mediate their cognitive development and transformational learning (Kegan, Broderick, Drago-Severson, Helsing, Popp, & Portnow, 2001; Mezirow, 2000). The distinctive styles of adult LESLLA students when interacting, learning, and navigating in these classroom environments have been examined through a range of qualitative methods, including observational, video, interview, and conversation analysis (e.g., Beder, Tomkins, Medina, Riccioni, & Deng, 2006; Hellermann, 2006; Hellermann & Harris, in press; Ramirez-Esparza et al., 2013; Santos & Shandor, 2012; Whiteside, 2009).

A central pedagogical goal in the busy intersection paradigm is to engage and support the participation of adults in new literacy practices. In this paradigm, instruction engages students in literacy practices, those characteristic of the education domain as well as ones taken from other domains such as home, community, and work. The impact of instruction on literacy proficiency is directly on engagement in literacy practices. This impact would not generally be captured by short-term changes in assessed proficiency but might well be reflected in short-term changes of engagement in literacy practices. Several studies of adult education students are consistent with this view. In my own previous research (Reder, 2009b, 2010), the most direct and immediate impact of classroom instruction on adult literacy was not on proficiency but on engagement in literacy practices. Purcell-Gates and colleagues (Purcell-Gates, Jacobson, & Degener, 2004; Purcell-Gates, Degener, Jacobson, & Soler, 2000) found that adult students in programs that focus instruction around authentic literacy practices report greater changes in their literacy practices than do students in programs not centered around such practices. Sheehan-Holt and Smith (2000) analyzed the U.S. National Adult Literacy Survey (NALS) data, looking at cross-sectional differences between recent program participants and nonparticipants. With statistical controls for many background characteristics, they found no significant proficiency

differences between participants and nonparticipants, but they did find significant differences in their reading practices.

The busy intersection paradigm and practice engagement theory together can help us make sense of these findings and alternative interpretations. The busy intersection paradigm emphasizes the trajectory that students are on as they enter adult education and the formative or even transformative classroom experiences that shape the direction, motivations, skills, and tools that students take with them to support their continued learning and development outside of the program. The central pedagogical goal is to engage and support students' participation in a growing repertoire of literacy practices. In this framework, the full impact of instruction on proficiency typically may not be realized until well after a student's participation in the program, even if program impact on engagement in literacy practices is more direct and immediate. The next section describes a process through which such gradual impact could take place over a long period of time.

Practice Engagement Theory

Practice engagement theory (Reder, 2009b, 1994; Sheehan-Holt & Smith, 2000; Smith, 2009) provides a mechanism through which a slow-developing, cumulative impact of instruction on LESLLA students' proficiency occurs. Practice engagement theory (PET) posits that literacy proficiency develops across the life span as individuals engage in literacy practices. Higher levels of engagement in literacy practices lead to greater growth of literacy proficiency. Reciprocally, higher levels of literacy proficiency lead to increased engagement in literacy practices.

To better understand some of the dynamics of PET in literacy development, we will look at the interplay between literacy proficiency and engagement in literacy practices over an eight-year period in which both were repeatedly measured. A statistical model of PET is fitted to data from the Longitudinal Study of Adult Learning (LSAL). LSAL was a long-term panel study that collected repeated measures of individuals'

literacy proficiencies and engagement in literacy practices at six time points over an eight-year interval between 1998 and 2007. The overall design and methodology of LSAL are described in detail elsewhere (Reder, 2009a), so only the essential details are summarized here.

The study population for LSAL was defined as adults who, at the start of the study in 1998, lived in the Portland (Oregon) metropolitan area; were ages 18–44; had neither completed high school nor were enrolled in high school or college; and were proficient but not necessarily native speakers of English. The LSAL population is a major segment of the target population of ABS (adult basic skills) programs operated by community colleges and other organizations in Oregon and across the country. Although most of the adults being followed were not from LESLLA backgrounds, the effects of migration/linguistic status and education within this analysis will be considered to inform the application of the findings to LESLLA learners.

The sample was drawn through random-digit dialing, with an oversampling of current participants in ABS programs to ensure adequate numbers of both program participants and nonparticipants in the sampled “panel” of 934 adults, who then were followed from 1998 to 2007.³ At study onset, the LSAL population had an average age of 28 and was evenly divided among males and females, with one-third from minority groups and one-tenth from immigrant populations. Nearly one in three reported having a learning disability.

Some of these defining characteristics of LSAL’s population changed over time. Everyone’s age increased, of course, while some adults received high school equivalency certificates and college degrees, experienced changes in their employment and family situations, or moved away from the Portland area. LSAL followed its panel members regardless of these and other changes, with about 90% of the original panel retained in the study until data collection ended in 2007.⁴

³ Sampling weights calculated for each panel member were used to make estimates for the defined target population from the sampled panel data.

⁴ Analysis of missing interviews indicates that they were *missing at random* (MAR) with respect to the variables examined.

Literacy proficiency was assessed in each wave using alternate forms of the Document Literacy Scale of the Test of Applied Literacy Skills (TALS) developed by the Educational Testing Service. TALS assesses the ability of adults to extract and process written information in a variety of everyday document formats, such as forms, maps, tables, text displays, labels, and so forth. TALS instruments are similar to those used in many major national and international surveys of adult literacy, including the recently conducted Program for the International Assessment of Adult Competencies (PIAAC).⁵ TALS measures proficiency on a 0–500 scale, with scores often reported in terms of five proficiency levels.

Measures of engagement in everyday reading, writing, and math activities were constructed from interview questions about how often respondents performed each of a set of specific reading, writing, numeracy, and computer activities in various everyday contexts (home, community, work). Two questions were asked about each practice. Respondents were first asked if they ever engaged in a practice—for example, “Do you ever read the news section of the newspaper?” (“yes” or “no”). If they answered yes, then they were asked about the frequency (e.g., “How often do you read the news section of the newspaper?”), on a five-point scale ranging from 1 (“rarely”) to 5 (“every day”). Answers to the two questions for each practice were combined so that the possible range of scores for each practice was from 0 (“never”) to 5 (“every day”). Analyses identified two longitudinally stable scales, engagement in literacy practices and numeracy practices.

The development of literacy proficiency and engagement in literacy practices in LSAL have previously been analyzed as separate linear growth processes (Reder, 2009a). These growth models were not dynamic (i.e., the

⁵ The TALS document literacy scale is directly comparable to the document literacy scale used in the 1992 National Adult Literacy Survey, the 2003 National Assessment of Adult Literacy, the 1994–1998 International Adult Literacy Survey, the 2003–2008 Adult Literacy and Lifeskills Survey, the 1991 Oregon Literacy Survey, and numerous other surveys. The document and prose literacy scales used in these surveys were merged into a single literacy scale in the 2011 PIAAC Survey of Adult Skills.

current values of a dependent variable for individuals do not depend directly on earlier values), nor were the two dependent variables interdependent as specified in practice engagement theory. We want proficiency at later time points to depend on preceding levels of proficiency and engagement in literacy practices and, simultaneously, levels of practice engagement at given time points to depend on preceding levels of proficiency and practice engagement. These relationships are illustrated in Figure 1.

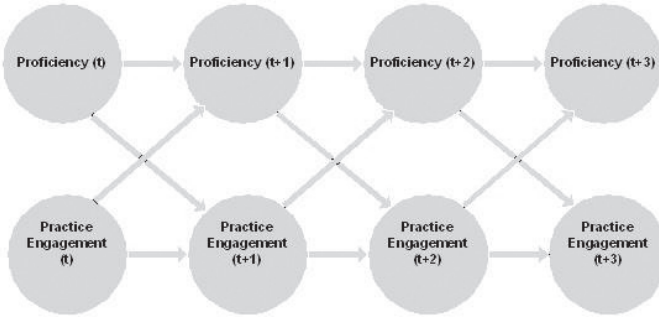


Figure 1. Structural relationships over time between literacy proficiency and engagement in literacy practices as specified by practice engagement theory

These relationships can be represented by the following system of simultaneous panel equations:

$$(1) \quad l_{t+1} = \alpha_0 l_t + \beta_0 p_t + \chi_0 + \varepsilon_{0,t+1}$$

$$(2) \quad p_{t+1} = \alpha_1 l_t + \beta_1 p_t + \chi_1 + \varepsilon_{1,t+1}$$

where l_t = literacy proficiency at time t

p_t = literacy proficiency at time t

χ_0, χ_1 = vectors of individual characteristics (gender, age, etc.)

$\varepsilon_{0,t}, \varepsilon_{1,t}$ = disturbances at time t

These simultaneous linear panel equations are fit to the LSAL data with parameters estimated by three-stage least squares. Table 4 summarizes the results of this estimation. Estimated coefficients for the (1) proficiency and (2) practices equations are shown in the two rightmost

columns of the table. Both of the lagged effects of proficiency on prior proficiency and practices on prior practices are positive, substantial, and highly significant. Cross-lagged effects between the proficiency and practices variables are also positive and highly significant. These results confirm the basic reciprocal cross-lagged structure of practice engagement theory. These equations predict 50% of the variance in the longitudinal proficiency data over Waves 1–6 and 22% of the variance in the longitudinal literacy practices data.

	Proficiency Equation	Practices Equation
Proficiency at Previous Time	0.664****	0.002****
Practices at Previous Time	0.924**	0.430****
Age	-0.460****	-0.002
U.S. Born (0/1)	9.298****	0.039
Years of Education (0-12)	1.977****	0.026
Constant	77.797****	0.633
N	3722	3722
R ²	0.50	0.21

**** p < .001 *** p < .01 ** p < .05 * p < .10

Table 4. Three-Stage Least Squares Estimation of Simultaneous Proficiency and Practices Equations for the LSAL Data, Waves 1–6

Some individual characteristics have significant effects as covariates within this PET modeling framework. Age, years of education, and birthplace/linguistic status significantly affect the dynamic process through which proficiency changes over time, but these indicators do not have significant effects on the process through which engagement in literacy practices changes over time. Age has strong negative effects on changes in proficiency such that older adults gain less proficiency over time. This dynamic age-dependent effect is consistent with other research on the effects of age on proficiency. Both growth-curve models of proficiency change (Reder, 2009a) and synthetic cohort comparisons of

proficiency in selected age groups from repeated cross-sectional surveys of adults (Organisation for Economic Cooperation and Development, 2013; Willms & Murray, 2007) show corresponding effects of age. Age does not, however, have statistically significant effects on changes over time in engagement in literacy practices, a result also found in growth-curve models of literacy practices (Reder, 2009a).

Although LSALs defined study population included few adults with LESLLA backgrounds, some findings in this PET analysis suggest important ways that PET may be usefully applied to LESLLA learners. The variables “years of education” and “U.S. born” (reflecting second-language status) exhibit interesting patterns of effects within this PET model. Years of education and native-born status each have significant positive effects on the amount of proficiency growth from one time point to the next (with other variables controlled), but neither has a significant effect on changes in literacy practices. With everything else held constant, adults with fewer years of schooling gain less proficiency from one time point to the next. Foreign-born adults (equivalent here to second-language learners) also acquire literacy proficiency more slowly than native-born adults. There is not a significant difference between the two groups’ changes in literacy practices.

Discussion

A major finding reported in this paper is the lack of relationship for adult LESLLA students between hours of attendance in adult education programs and gains in reading proficiencies. This holds for LESLLA students at a wide range of initial reading proficiencies, including those at the very lowest literacy levels. Although program evaluations and reports using these tests regularly report positive associations between instructional hours and test score gains, our analysis indicates that those relationships confound instructional hours with test-taking experience.⁶ The regression analyses presented in the paper show that the assessments

⁶ See Allemano (2013) for a discussion of other issues in assessing reading abilities in LESLLA adults.

confound the target literacy skills with test-taking skills in LESLLA students. The lack of a significant relationship between instructional hours and reading gains once test-taking experience is controlled is not consistent with the “parking lot”-based logic model that connects instructional hours with proficiency gains.

Given the nature of program impact on literacy in the busy intersection paradigm, the effects of participation on proficiency typically will not be fully realized until well after a student’s participation in the program. Although there may well be measurable effects of participation on engagement in literacy practices, the changes of engagement lead to changes in literacy proficiency on a slower and more gradual time line. Practice engagement theory describes one process through which short-term changes in literacy practices lead to longer-term changes in literacy proficiency.

Previous research on PET demonstrated that adults at higher levels of engagement in literacy practices at one point in time gained more proficiency over a five- to six-year period than adults who had been at lower levels of engagement (Reder, 2009b). The present results replicate this earlier proficiency-affects-practices finding and also demonstrate a reciprocal practices-affect-proficiency effect and show the two effects fitting together in an ongoing, braided structure of interaction. The braid can sustain literacy development across the life span. Importantly for LESLLA adults, although schooling and immigration/linguistic status both affect the proficiency strand of this structure, they do not have significant effects on the literacy practices strand.

There are, of course, some important limitations to the research findings presented in this paper that should be kept in mind as we think about their implications. The data examined here have been measures of reading and literacy proficiencies and literacy practices. These are quite relevant to the conference focus on emergent literacy practices. There is good reason to suppose that other measures of reading and literacy skills would show similar results, given the lack of association between instructional hours and assessed changes for a wide range of measures used in other research reviewed in the paper. But this literacy development does not occur independently of other language-involved

skills that LESLLA students are acquiring. Further research is needed to clarify the extent to which the findings presented and theories developed here apply more broadly to the emergence of listening and speaking skills, for example. Further research will also help clarify the extent to which some of the conclusions drawn about the busy intersection paradigm may apply more generally to other adult ESOL (English for speakers of other languages) and adult education students.

The PET analyses of the LSAL data indicate that literacy proficiency and literacy practices are differentially sensitive to adults' educational and second-language backgrounds. In the PET model of LSAL data, short-term growth of literacy practices, unlike short-term growth of literacy proficiency, is not affected by either low education or second-language status. Although LSAL included both low-education adults and second-language learners, it did not include many adults who had *both* characteristics together (i.e., LESLLA learners). Thus, additional research is needed to generalize PET specifically to LESLLA learners. Nevertheless, the LSAL findings do suggest that a programmatic focus on engagement in literacy practices may not disadvantage LESLLA learners in the way that a focus on literacy proficiency does.

Implications

The results in the paper have a number of implications for developing programs and policies that will better support LESLLA learners and also practitioners who support their emergent literacy development.

Program design. Literacy support for adult LESLLA learners, whether based in ESL classrooms or other settings, may be more effective if focused on building engagement in everyday literacy practices rather than focused directly on proficiency development. Contextualizing instruction to written materials and tasks that students encounter in home, community, and workplace settings will help build engagement in those emergent literacy practices. Providing support and motivation for students to engage in those literacy practices in the classroom will facilitate their engagement

outside of the classroom. Adults from LESLLA backgrounds will not likely encounter the same disadvantage with instruction focused on building engagement in literacy practices as with instruction focused directly on the more abstract skills involved in literacy proficiency development. According to practice engagement theory (and the results of this paper), LESLLA students' heightened engagement in practices will lead, over time, to increased proficiency levels. Key instructional design decisions have to do with selecting culturally authentic and personally meaningful literacy practices for the classroom. Given appropriate demonstrations and prompts, students can often bring such materials and practices into the classroom from their everyday activities.

These authentic literacy practices will then have positive social meanings for learner engagement in contexts outside of the classroom. Building engagement in the classroom can be designed to facilitate extraclassroom support processes that gradually expand the learner's engagement in these emerging literacy practices. Particularly helpful in this regard are collaborative literacy practices on which a small number of participants work together, pooling their skills and expertise to accomplish a task that a LESLLA learner might not be able to accomplish alone. LESLLA learners often work with family and community members, sharing skills and expertise to accomplish challenging literacy tasks such as filling out forms or reading labels and instructions. By engaging in such collaboration in the classroom, the LESLLA learner develops increased capacity to work with friends, family members, and community members, who then become part of the LESLLA learner's emerging literacy practice.

Policy. Although scholars and practitioners have developed a repertoire of promising pedagogical practices for accomplishing some of the needed programmatic developments, there has not been a supportive programmatic and policy environment in which it has been possible to conduct needed systematic experimentation, research, and evaluation.

A vital goal of policy development for adult literacy education needs to be the creation of a programmatic space that encourages innovations, experimentation, systematic evaluation and dissemination,

and professional development about programmatic and pedagogical practices that work well with LESLLA and other adult learners.

The emphasis of funders and agencies on short-term proficiency gains provides too little opportunity for programs to demonstrate their impact and experiment with ways to improve. To assess literacy practice engagement for measuring learner progress and program effectiveness, better ways and tools for measuring engagement in literacy practices (both observational and self-report) need to be systematically developed. The research tools used to date offer a starting point for this needed development. The definition of *program* for funding and accountability purposes should be broadened to include a variety of ways of facilitating engagement in literacy practices (tutors, technology, counselors, resource centers, professional development for librarians working with LESLLA learners, and so forth). This needs to be coupled with a shift to long-term (five to six years') accountability and return-on-investment frameworks.

It is time to rethink the traditional logic model that links classroom hours to learning outcomes for LESLLA learners. To serve LESLLA learners more effectively, the prevailing logic model grounded in the parking lot paradigm needs to be replaced by a logic model grounded in the busy intersection paradigm. What matters is *not* how long students are "parked" in the program, that is, how long they spend waiting in the intersection, but the direction they take when they leave it. In this conception, students come to the program from different directions and depart for different destinations. The adult education program helps them choose the best path as they leave the program and provides them with the resources and support to become persistent lifelong learners and reach their destinations (Lesgold & Welch-Ross, 2012; Miller et al., 2011). In this paradigm, the program's impact on learning is best seen in different ways at different points along the adult's trajectory. According to results presented here, the short-term program impact on adult literacy is best measured in terms of engagement in literacy practices. Over time, these changes in practice will lead to increased proficiency levels and associated social, economic, and educational outcomes. Literacy will indeed emerge and develop as a busy intersection of contexts and practices.

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