

Volume 4 | Issue 3 | 2022

ISSN 2642-3669

ADULT LITERACY EDUCATION:

THE INTERNATIONAL JOURNAL OF
LITERACY, LANGUAGE, AND NUMERACY

Adult Literacy Education:

The International Journal of Literacy, Language, and Numeracy

Adult Literacy Education is published three a year by ProLiteracy in partnership with Rutgers University.

CO-EDITORS:

Alisa Belzer

Rutgers University

Amy D. Rose

Northern Illinois University

Heather A. Brown

A.T. Still University

EDITORIAL ASSISTANT:

Xenia M. Cox

Rutgers University

BOOK REVIEW EDITOR

Daphne Greenberg

Georgia State University

RESOURCE REVIEW EDITOR

Susan Finn Miller

LLIU13 Community Education

TECHNOLOGY SOLUTIONS FOR ADULT BASIC SKILLS CHALLENGES:

David J. Rosen

Newsome Associates

STAFF:

Michele Diecuch

Project Manager

Cathi Miller

Graphic Designer

Manuscripts should be submitted directly to the Journal through the online submission platform which can be found at: <https://proliteracy.org/ALE-Journal>. Full details, and author guidelines can be found online.

Copyright Permission:

Permission request to photocopy or otherwise reproduce material published in this journal should be submitted to ProLiteracy at ALEJournal@ProLiteracy.org.

MISSION STATEMENT

The journal's mission is to publish research on adult basic and secondary education and transitions to college and career programs. It informs practitioners, researchers, policy makers, and funders about best practices in adult literacy, numeracy, and English language education in publicly funded, community and volunteer-based programs in a wide range of contexts. Each issue will consist of research articles focused on a particular theme plus other content of interest to readers (e.g., resource reviews, opinion pieces, and debates and discussions on timely topics of interest to the field).

CONSULTING EDITORS:

Sonya L. Armstrong

Texas State University

Hal Beder

Rutgers University
(Emeritus)

Jim Berger

Georgia College

Sondra Cuban

Western Washington University

Sam Duncan

UCL Institute of Education, Department of Education, Practice and Society

Aydin Yücesan

Durgunoglu
University of Minnesota
Duluth

Susan Finn Miller

LLIU13 Community Education

Elisabeth Gee

Arizona State University

Gabrielle Gerhard

Seattle Central College & Curriculum Research Group

Lynda Ginsburg

Rutgers University
(retired)

Daphne Greenberg

Georgia State University

Anke Grotlüschen

Hamburg University

Allan G. Harbaugh-Schattenkirk

Longwood University

Tom Heaney

Rutgers University

Bob Hughes

Seattle University

Erik Jacobson

Montclair State University

Anna Kaiper-Marquez

Pennsylvania State University

Cathy Kozlowicz

Literacy for all, Inc.

Clarena Larrotta

Texas State University

Sasha V. Lotas

Academy of Hope Adult Public Charter School

Larry G. Martin

University of Wisconsin-Milwaukee

J. Ryan Monroe

US Peace Corps

Ron Mottern

Ashford University

Bill Muth

Virginia Commonwealth University

Richard Orem

Northern Illinois University

Margaret Becker Patterson

Research Allies for Lifelong Learning

Dolores Perin

Teachers College, Columbia University

Amy Pickard

Indiana University
Bloomington

Esther Prins

Pennsylvania State University

John Rachal

The University of Southern Mississippi
(retired)

Stephen Reder

Portland State University

David J. Rosen

Newsome Associates

Elizabeth A. Roumell

Texas A & M University

Leah Katherine Saal

Loyola University MD

John Sabatini

IIS/University of Memphis

Steven W. Schmidt

East Carolina University

Joni Schwartz

CUNY La Guardia Community College

Ellen Scully-Russ

The George Washington University

Ralf St. Clair

University of Victoria

Norman A. Stahl

Northern Illinois University

Karin Sprow Forté

Penn State Harrisburg

Nicole Taylor

Spelman College

Lyn Tett

Huddersfield University

Amy Trawick

CALLA

Jenifer Vanek

World Education

JoAnn Weinberger

Center for Literacy
(retired)

Jeff Zacharakis

Kansas State University

TABLE OF CONTENTS

Research Article

- “It’s a Different World, College, a Different Terminology, a Different Language”: Language Ideologies, Literacies, and College Readiness 4
Meagan A. Hoff and Jessica S. Reynolds

Reports from the Field

- Digital Financial Literacy 20
Wil Golden and Leslie Cordie
- Learning from Each Other: A Partnership Between an Affordable Housing Organization and a Digital Literacy Research Organization 27
Kathy Harris, Naila Judge, and Chris Burger
- Finally, Some Guidance! Using the Triple E Framework to Shape Technology Integration 34
Susan Gaer and Kristi Reyes
- A Journey Through the Digital World: Fostering Digital Problem Solving Among Adult Learners 41
Tyler H. J. Frank

Forum: What’s in a Name?

- Adult Foundational Education: Why a New Name and Definition Is Needed 47
David J. Rosen
- Adult Foundational Education: A Fresh Seed Sown? 51
Ralf St. Clair
- Demystifying a Field: Wonderings on Classifying for Clarity in Adult Education 56
Leah Katherine Saal

Book Review

- Contested Spaces of Teaching and Learning: Practitioner Ethnographies of Adult Education in the United States* 60
Reviewed by Alexis Cherewka

Resource Review

- Instructor Implementation Guide: Digital Literacy Framework for Adult Learners* 63
Reviewed by Nell Eckersley

Research Digest

- Mathematical Word Problems in Adult Education: What the Research Says 66
Lynda Ginsburg

“It’s a Different World”: Language Ideologies, Literacies, and College Readiness

Meagan A. Hoff, Collin College

Jessica S. Reynolds, Texas A&M University-San Antonio

Abstract

For linguistically diverse students, the path to college is often defined by language. Depending on assessments and institutional policies, students may be placed into course sequences in developmental English, adult basic education, and/or English as a Second Language courses. The purpose of this study was to better understand developmental education, adult basic education, and English as a Second Language instructors’ perceptions of how to best prepare linguistically diverse students for the literacy expectations of college courses. Ten instructors from Texas institutions were interviewed. Findings showed an overall lack of shared understandings of academic literacy across the three fields. Furthermore, there were tendencies towards deficit framings among developmental English instructors. Finally, findings showed a high level of animosity, particularly between English as a Second Language and developmental English instructors. Implications of these findings are discussed.

Keywords: academic literacies, linguistically diverse learners, college readiness, developmental education

Over the past decade, public schools have seen a 9.2% growth in students requiring language assistance, with roughly 4.4 million students working their way to college (National Center for Education Statistics [NCES], 2015). Despite composing a large part of the community college student population, linguistically diverse students in the American education system risk being silenced on their way to a college degree (Harklau, 2000).

In policy and practice, language can be conceived as a resource or an obstacle (Young, 2020), and this framing has tangible consequences for students. Language and literacy are at the heart of

learning; however, linguistically diverse students may experience college courses differently from their monolingual peers. Yet, there is a lack of research on linguistically diverse students in community colleges (Almon, 2012), particularly in developmental education courses (de Kleine & Lawton, 2018).

Given the growing population of linguistically diverse students entering postsecondary institutions, the lack of research on what impedes or supports success is concerning. American schools are becoming increasingly diverse, particularly around the languages

that students bring with them to school, and de Kleine and Lawton (2018) predicted that developmental courses will become increasingly diverse. Meanwhile, the teaching force remains predominantly monolingual. This disparity in linguistic experiences shapes ideologies, which in turn inform how educators perceive and address the needs of their students (Assaf & Dooley, 2006; Young, 2020).

Instructors serve as a liaison between school policy, practice, and students. Yet, depending on the field, instructors might have different perceptions about the needs of their linguistically diverse students, despite a shared goal of preparing students for college (Harklau, 2000). Furthermore, instructor-student relationships can impact academic engagement and outcomes (McKenna et al., 2020).

Working towards a common understanding of college readiness across fields could ensure that linguistically diverse students are receiving the support they need to be ready for postsecondary academic literacy expectations regardless of their path to college. We define academic literacies by merging theoretical elements of literacy (Gee, 2011; Street, 2001), language (Gee, 2011; Lippi-Green, 1997), and college readiness (Bartholomae, 1985; Gee, 2011). For this study, academic literacy is viewed as a social process that is shaped by learners' educational and sociocultural contexts. Additionally, academic literacies are important for academic success, but are not always explicitly taught (Bartholomae, 1985; Shanahan & Shanahan, 2008) and vary across different pathways to college. The purpose of this study was to better understand developmental English (DE), adult basic education (ABE), and English as a Second Language (ESL) instructors' perceptions of how to best prepare linguistically diverse students for the literacy expectations of college courses.

Literature Review

For linguistically diverse students, the path to college is often defined by language (Kanno & Varghese, 2010). Depending on assessments and institutional policies, students may be placed into course sequences in DE, ABE, or ESL. In the absence of a shared definition of academic text readiness (Armstrong et al., 2016), it is unclear how such programs align in preparing students for postsecondary academic literacies. This is more concerning given that linguistically diverse students may enter college-level coursework through a diverse set of entry points. For example, some students are placed into developmental courses after taking a series of ESL courses, while others may be placed directly into college-level courses directly from the ESL sequence.

Texas Higher Education

The Texas Higher Education Coordinating Board (THECB) unveiled a plan to increase the number of Texans with college certificates or degrees to 60% of Texans. Currently, only 23% of eighth-grade students in Texas will go on to graduate from college (THECB, 2019). Reaching this goal requires extending college access to groups traditionally considered unprepared for college. Therefore, the THECB's plan is multipronged, bringing together community colleges, adult education programs, and local schools to broaden access to a wider portion of the population. The plan includes adult education and developmental education as entryways into college.

Though overlooked in the strategic plan, there is a third important entryway into college—ESL. Increasing college enrollment for a broader portion of the population necessitates addressing the needs of linguistically diverse students. Currently, 18% of students are registered as English language learners in Texas public schools (NCES,

2019). Linguistically diverse students will often be tracked into some form of ESL. However, that is not universally where linguistically diverse students begin, or should begin college. The diversity of students subsumed with the label “English learner” complicates assessment and placement policies that can be overly reductive, particularly when focused on only one aspect of student learning—English proficiency. The entryway into college may largely depend on the type of assessment used to measure college readiness (Bunch & Kibler, 2015).

College Readiness

There has been an emphasis on the construct of college readiness, especially in the transition from high school to college (e.g., ACT, 2019; Common Core State Standards, 2020; Conley, 2008; Vandal, 2010). There has also been growing interest in literacy with college readiness (e.g., Boden, 2011; Henry & Stahl, 2017; Hungerford-Kresser & Amaro-Jimenez, 2012; Springer et al., 2014) and language (Contreras & Fujimoto, 2019; Lee et al., 2018). And yet, the concept of college-ready literacies remains nebulous.

College readiness is multifaceted, incorporating skills, traits, habits, and knowledge (Arnold et al., 2012). Conley (2008) described college readiness as four “keys”: cognitive strategies, content knowledge, academic behaviors, and contextual skills and knowledge (p. 3). However, scholars argue that readiness is not simply a collection of cognitive skills and knowledge, readiness also includes aspirations, motivation, and self-efficacy (Arendale, 2005; Holschuh & Paulson, 2013). Despite the insistence of scholars that readiness is multifaceted, assessments focus on mastery of content knowledge. In Texas, for example, students may take the Texas Success Initiative Assessment, which measures reading

and writing using a collection of multiple-choice questions and an essay (College for All Texans, n.d.). College-readiness assessments can shape trajectories by determining if students will go into credit-bearing or developmental courses.

Developmental English

In Texas, students are placed into developmental courses based on their Texas Success Initiative Assessment scores (THECB, 2012). When students do not meet the minimum passing score for reading or writing, they are placed in a developmental education course to prepare for postsecondary academic literacies. Developmental education is often equated with remedial education; however, theoretically, these two course structures differ in important ways. Whereas remedial coursework attempts to address student deficiencies with an emphasis on reteaching skills and content, developmental education scholars take a more expansive view of college readiness with an integration of social, cognitive, metacognitive, and affective aspects of learning (Arendale, 2005; Holschuh & Paulson, 2013). It is unclear how these divisions translate into practice within developmental courses and may depend on how the instructor understands college readiness.

Developmental reading and writing were initially offered as separate courses; however, Texas recently mandated an integrated reading and writing model of instruction (THECB, 2012) in an effort to accelerate developmental education course sequences. Given the collapse of developmental reading and writing, we refer to these courses as Developmental English to encompass experts in the areas of both reading and writing who are now teaching both.

English as a Second Language

ESL placement is often determined by a single test

result rather than the use of multiple measures (Shapiro, 2012). The most common exam, Test of English as a Foreign Language (TOEFL), does not necessarily relate to college success (Cho & Bridgeman, 2012). Some institutional policies use citizenship status to determine ESL placement (Kanno & Varghese, 2010). Students can be tracked into ESL or DE by the entrance exam they are asked to take (Bunch & Kibler, 2015).

ESL used to denote a focus on life skills such as banking and shopping but in community colleges, ESL is placed among courses that help students transition into college and careers (Parrish, 2015). Traditionally, ESL courses focused on written language conventions over speaking and talking (Ferris, 2009). Coursework may have a heavier emphasis on building grammar and vocabulary over more holistic writing conventions in freshman composition. This focus on written language conventions may do little to help prepare students for American expectations of classroom participation (de Kleine & Lawton, 2018). In contrast, Niranji and colleagues (2014) found that international students felt better prepared for the cultural expectations of their other courses after taking an ESL course. Parrish (2015) proposed a more rigorous approach to ESL courses for adults that combined academic language, language strategies, and critical thinking to better prepare adult language learners for college and careers.

Adult Basic Education

ABE encompasses workforce preparation, integrated English literacy, and civics education, among other areas (Office of Career, Technical, and Adult Education [OCTAE], 2020). ABE courses focus on basic skills (reading, writing, math, English language proficiency, and problem-solving) needed to find employment

(CareerOneStop, n.d.). Programs include basic skill instruction, high school equivalency exam preparation, and ESL. However, OCTAE also works closely with community colleges to expand access to college degrees.

Although there has recently been increased interest in linguistically diverse students in postsecondary settings, there is a need for more research, particularly in community colleges (Almon, 2012; de Kleine & Lawton, 2018). It is particularly important to examine the courses that purport to prepare students for success in college courses. Therefore, the path that a student is sent on, can vary in important ways. Given the numerous paths into college, it is important to understand how each field perceives the needs of linguistically diverse students and the extent to which these perceptions align.

Theoretical Framework

This study was framed by sociocultural and sociolinguistic perspectives of literacy (Barton & Hamilton, 2000; Gee, 1989; Street, 2001). Literacy is complex, contextual, and dynamic. Literacy is a social process and practices are shaped by values, norms, and power dynamics. This study also draws on disciplinary literacies (Shanahan & Shanahan, 2008) to frame literacy practices within academic contexts. This research assumes that academic literacies are context-specific, important for academic success, but that academic literacies are rarely explicitly taught (Bartholomae, 1985; Shanahan & Shanahan, 2008).

Our research assumes that the fields we examine (ABE, ESL, and DE) aim to increase access to college and therefore should align with academic literacy expectations of college and careers more broadly. Literacy instruction often focuses on mechanics, grammar, correctness and other

“superficial features of language” and these features are essential to access status-giving language communities (Gee, 1989, p. 11). However, the components of literacy are more far-reaching, including behaviors, values, and ways of making meaning within communities of practice.

Language is a necessary component in our framing of literacy. In looking at the instructors of linguistically diverse students, it was important that we look at how they are framing literacy and language. Lippi-Green (1997) described language as “a flexible and constantly flexing social tool” (p.63) further arguing that perceptions of language variations are filtered by language ideologies. Put simply, language ideologies are beliefs and attitudes towards languages and dialects. Standard language ideologies are marked by “bias toward abstracted, idealized, homogenous spoken language” (Lippi-Green, 1997, p. 64). Language ideologies are pervasive in education, upheld by “standard” language ideologies (Lawton & de Kleine, 2020; Lippi-Green, 1997), such that even when instructors develop increased awareness of language variations, they maintain standard/nonstandard dichotomies (Flores & Rosa, 2015). Often when monolingual is the norm, other languages necessarily become an obstacle. Furthermore, language issues are rarely about language, but power dynamics upheld by language ideologies often couch a host of other biases (Flores & Rosa, 2015; Lawton & de Kleine, 2020; Lippi-Green, 1997). Such biases often manifest as distinctions between language framed as right/wrong within academic contexts. As previous research shows (e.g., Hoff & Armstrong, 2021; Kanno & Varghese, 2010; Miller, 2003), instructor beliefs can restrict student access to the knowledge they need to navigate college.

Although there have been calls to define college literacy readiness (e.g., Armstrong et

al., 2016) and to de-center “standard” English (e.g., Canagarajah, 2011; Conference on College Composition and Communication, 1974; Mazak & Carroll, 2017), language remains an obstacle for students in college classrooms (de Kleine & Lawton, 2018; Kanno & Varghese, 2010; Miller, 2003). Thus, we wanted to examine how instructors working with college-bound linguistically diverse students framed postsecondary academic literacy expectations.

Methods

The purpose of this study was to understand how instructors in ESL, ABE, and DE in Texas community colleges perceive the needs of linguistically diverse students on the path to college. We used a qualitative case study (Merriam, 1998) to address two research questions:

1. How are learners transitioning out of adult ESL being prepared for postsecondary academic literacies?
2. Where do these understandings align and diverge between practitioners in ESL, ABE, and DE?

Research Setting and Participants

Focusing on a single state helped to ensure that programs across colleges were informed by similar policies. Texas served as an ideal case because of the linguistic diversity of students. The Texas Workforce Commission (2021) subsumes adult ESL within adult education and literacy programs. Generally, these programs combine components of both ESL and ABE. For this study, adult ESL was broadly defined as pre-college language classes for adult language learners.

To recruit participants, Texas was divided into regions (north, south, east, west, and central). Graduate students were assigned regions and

asked to contact college practitioners who were working with linguistically diverse students in developmental, ESL, and ABE courses. Practitioners self-identified their primary teaching field. Developmental courses (DE) included reading, writing, and integrated courses. ESL included English language courses within community colleges. ABE included workforce-oriented classes and GED-preparation.

A total of 25 people were contacted, of which ten scheduled interviews. This process resulted in a convenience sample of ten practitioners from across three fields (see Table 1); however, we did not achieve parity. The majority of participants ($n=4$) worked at colleges in central Texas. All of the participants were teaching in their respective fields and three (Tamara, Ben, and Melanie) also worked in leadership roles.

TABLE 1: Participants and Regions

Pseudonym	Field	Region	Level of Education	Years of Experience
Phil	DE	Central	M.A.	21
Tamara	DE	North	-	-
Nina	DE	North	M.Ed.	35
Cameron	DE	South	B.A.	13
Ben	DE	West	M.A.	10
Jordan	ESL	Central	-	10
Katie	ESL	Central	M.A.	29
Terry	ESL	East	Ph.D.	20
Mary	ABE	Central	B.A.	20
Melanie	ABE	South	M.A.	-

Note. (-) indicates that the information was unavailable.

Data Collection and Analysis

Each participant was interviewed one time by phone for 30 to 90 minutes. Using a semi-structured interview protocol, each participant was asked eight core questions. The present study focused on four questions that pertained to academic expectations and practices with linguistically diverse students with follow-up questions as needed.

1. Please explain the adult ESL sequence at your institution and how students transition from adult ESL into credit classes.

2. What are the academic expectations for a student who is considered ready to leave adult ESL? (for example, in the areas of reading, writing, listening to lectures, speaking in discussions or presenting).
3. What do you do in (your position) to prepare students to meet these expectations?
4. What challenges do you face in preparing students to transition out of adult ESL?

The research team transcribed interviews using exact reproduction but omitting pauses, emphases, and non-verbal sounds.

For data collection and analysis, we used a sociocultural framing of literacy as a guide for what we included as references to literacy. Sociocultural theories conceptualize literacy as a social practice, including behaviors, values, and ways of making meaning within communities of practice (Gee, 1989). It was also important to include context, perceived social goals, and an understanding of participants as relevant to our framing of academic literacy.

Coding was completed in three rounds using open-coding and magnitude coding (Saldaña, 2016). First, after familiarizing ourselves with the data, we determined a provisional list of codes based on our initial interest and informed by our sociocultural framework (literacy, language, college readiness, and descriptions of students). Literacy included references to reading and writing, but also beliefs, actions, and values (Gee, 2011; Street, 2001). Language included references to language variation, features, deviations, comparisons as well as beliefs about language (Gee, 2011; Lippi-Green, 1997). College readiness included references to disciplinary literacies (Shanahan & Shanahan, 2008), implicit and explicit expectations, and strategies (Bartholomae, 1985; Gee, 2011). Finally, our theoretical framework highlights the contextual nature of literacies and languages; therefore, we coded for references to students and references to their positionings, lives, and identities (Gee, 2011; Lippi-Green, 1997).

Both authors separately coded interviews. Second, authors compared codes, combining similar codes and setting aside codes that were less relevant to the research questions. Throughout the coding process we kept analytic memos, noting any surprises and questions that arose. From these notes, we decided to include an additional category—perceptions of other fields—in our

coding scheme. We then used frequency counts (LeCompte & Schensul, 2013) to describe the prevalence of codes within each interview.

Participants were grouped by field for individual case analyses. Within each field, the authors looked for the occurrences and frequencies of each code, as well as co-occurring codes. We used a code frequency table to examine the distribution of themes and subthemes across participants and then fields (see Table 2). By clustering then comparing the frequency of subthemes, we could better formulate an overall image of the ways in which academic literacies were being described across fields.

Findings

We present findings first by individual fields, describing how they talked about college readiness, academic literacies, language, and their students overall. This study asked (1) How are learners transitioning out of adult ESL are being prepared for postsecondary academic literacies? and (2) Where do these understandings align and diverge between practitioners in ESL, ABE, and DE? To answer the first question, we summarize the perceptions expressed by participants as they related to literacy and college readiness and provide examples of how these perceptions translate into practice. For the second question, we use a cross-case comparison of the codes and frequencies to highlight where these fields converge and diverge in their understandings of academic literacies, languages, and college readiness.

Developmental English

For DE instructors, college readiness centered around language, literacy, confidence, and comfort. They talked about preparing students for future college courses which included needing “skills necessary to succeed” but also exposure

to the 4-year campus: “Allow them to experience campus and sort of have a future or a vision of what the future holds before they get there.” Notably, no code occurred across all five participants (see Table 2). The majority of discussions around college readiness focused on language and literacy. The four most common topics (from greatest to lowest prevalence) were building discrete language skills (11), college knowledge (7), motivation (5), and academic literacies (5). In addition, participants mentioned the importance of persistence (3), preparing for tests (3), reading comprehension (2) and study skills (1).

These perceptions did not exist in a void. Instead, these various perceptions of college readiness, and more specifically, postsecondary academic literacies, were important because they informed classroom practices. For example, Tamara described academic literacies as the ability to “communicate in writing and in reading at least a college-level” and preferred “activities in the

classroom where they’re actually communicating through presentations.” The belief that being able to communicate at a college-level translated into classroom activities that used communication on multiple levels including speaking, reading, and writing.

Perceptions of what a student needed to be college-ready differed between individuals and institutions. Nina was the only participant who mentioned reading comprehension as a challenge for linguistically diverse students, in particular, finding the main idea:

I find, and this is probably a language, absolutely, a language issue, I find that determining when they come in and we are working on the reading, for them to determine the main idea and the supporting details, through, to pull that out of the text, is difficult.

Reading was framed as a language issue that could be remedied by direct instruction about main ideas. These beliefs translated into practice. Nina explained how excerpts from textbooks used across campus were incorporated: “We start out teaching

TABLE 2: Code Frequencies

Code	Frequency			Example
	DE (n=5)	ESL (n=3)	ABE (n=2)	
Academic Literacies	5 (4)	15 (3)	2	“Be able to communicate in writing and in reading at least a college level.”
College Knowledge	7 (4)	8 (3)	5	“They need to know to ask for help and where to find help.”
Motivation	5 (3)	3 (2)	2	“They’re wanting so much to succeed.”
Discrete Language Skills	11 (2)	7 (2)	0	“We work on Latin-Greek roots and prefixes and affixes.”
Study Skills	1 (1)	2 (2)	0	“They have study skills, how to, you know, reading...how to take notes.”
Test Preparation	3 (1)	0	0	“We basically teach to the test.”
Persistence	3 (2)	0	0	“A lot of times we get people who come in for one class and then drop out.”
Reading Comprehension	2 (1)	0	0	“Being able to determine what’s important in a piece of a text.”
Listening Comprehension	0	6 (3)	0	“Do they really understand what they are hearing.”
Vocabulary	0	5 (3)	0	“They have to be able to display proficiency in vocabulary.”
Non-Academic Barriers	0	0	1 (1)	“Barriers like transportation and things like that.”

Note. The number of participants who referred to each code is in parentheses.

them that all authors, particularly textbook authors because their goal is to teach you, will give levels of importance in the textbooks that they write.” Academic literacy, then, is tied to college-specific texts.

English as a Second Language

For ESL instructors, college readiness was a combination of language and literacy skills. Across the three ESL participant interviews, there seemed to be a clear consensus on what students needed from their courses. When participants talked about readiness, the four most common topics were building academic literacies (15), college knowledge (8), listening (6), and vocabulary (5). Alongside building English vocabulary and learning to write grammatically correct sentences, the instructors talked about analyzing information, making connections across course readings, and understanding cultural expectations. To a lesser extent, participants also discussed motivation (3) and study skills (2).

The participants affirmed the porous boundaries of academic literacies, noting that students were learning skills they may have developed in their first language:

They've got to learn again all the conventions of writing, and it takes a lot of practice, but we get a lot of the different types of essays: cause, effect, narrative, argumentative, compare/contrast and all those and it takes many drafts and corrections.

Participants also framed academic literacies as connecting to the broader lives of their students. In one course, a participant explained that “ESL college students put their struggles on stage.” By literally writing and acting out their lived experiences, the instructor was preparing students for college and beyond.

Perceptions of college readiness were often focused on becoming strategic college readers that included both vocabulary and academic literacies,

namely, critical thinking. According to Terry, students needed to learn vocabulary but also to learn past vocabulary: “In English, because they are so intent on definitional meanings. And you have to break out of that mind-frame—And start thinking.” All three participants shared a similar list of language skills that students needed to acquire, particularly around listening, reading, writing, and speaking.

The belief that students needed specific and interconnected study skills—such as taking notes, listening to lectures, reading course materials, and finding connections between sources—was reflected in teaching practices. Terry shared a lesson that integrated many of these skills:

So they literally teach the class English grammar for like about ten-fifteen minutes. So they've got a class presentation due, they've got the PowerPoint up there, they're speaking, they're directing to the class, and they have to come up with a little quiz, to then test their class.

In this lesson, students became teachers and needed to gather information, summarize it, create a presentation, and identify what they wanted the other students to learn. They practiced several skills such as reading, writing, speaking, and listening within a college setting.

When talking about class activities, there was an emphasis on activities that “really make it real. And it makes it, you know, stick.” ESL instructors focused on language-specific features like building vocabulary and writing grammatically correct sentences, but they actually focused on broader academic literacy tasks more so than discrete language skills.

Notably, none of the ESL instructors talked about replacing a student's first language in any way. Other languages were not posed as obstacles for students to develop academic English. There was consistency in the descriptions of college readiness across the three ESL instructors. Instructors' beliefs

and teaching practices shared many common features, including a focus on integrated skills and making connections to life outside of school.

Adult Basic Education

For ABE instructors, college readiness was less about language and literacy and more about helping students adapt to academic culture and overcoming obstacles such as transportation and money. They emphasized the necessity of providing their students with soft skills and an introduction to college as a culture. The most frequent codes included college knowledge (5), academic literacies (2), motivation (2), and non-academic barriers (1).

ABE instructors prioritized informing students on what to expect upon starting college and mentored students through the college application process (college knowledge). Mary prioritized college knowledge and learning the vocabulary of college, like what is a “grade point average”: “It’s a different world, college, a different terminology, a different language.” All participants mentioned helping students feel comfortable in college through either learning about the environment or the college-specific vocabulary.

Only one participant discussed how academic literacies were incorporated into the class. Mary taught reading within disciplinary contexts: “It’s different when you have to read for understanding in the science kind of world versus the more linguistic kind of world.”

For college readiness, they focused on building college knowledge, motivation, and academic literacies, alongside addressing barriers. Both ABE participants addressed college readiness specifically but had different interpretations. Melanie talked about teaching computer skills, math, reading, language skills, and helping

students feel comfortable in a college setting: “The academic perspective, like study skills, but the cultural aspect, like the culture of higher ed. is huge. Helping them know who their resources are.” Mary, in contrast, focused more school-specific skills: “a student who’s ready for college courses should be able to listen to a lecture, get the main idea and important topics, important details.”

Although there were no descriptions of class practices, ABE instructors emphasized the importance of learning about the students in their classes. According to the ABE instructors, the lives and identities of students outside of college were essential. Melanie explained: “It’s not only the student who goes on this journey but the whole family might get involved, husbands and children, and we want to embrace that.” The world seeped into discussions about students and their needs.

College readiness was not the only concern for ABE instructors. Within the current political climate, there was a need to “try to make that fear go away so that they can learn.” This indicates a belief that learning was not happening in a void but that students’ lives outside of the classroom were real and came with them to class.

From these discussions, it is hard to discern how the instructors’ beliefs informed their teaching practices. However, these interviews revealed that beliefs about college readiness, language, and literacy informed the instructors’ relationships with students.

Comparisons Across Fields

The values and assumptions of literacy and college readiness varied between and within each field. ESL was the most consistent in their perceptions about college readiness. DE was the least consistent. DE instructors talked about specific college-based activities and preparing students for

them. In DE and ESL, we saw clear connections between what instructors believed and what they taught. Likewise, in ABE we saw a connection between what instructors believed and how they supported students.

College knowledge was a feature that one participant used to distinguish DE and ESL: “I don’t think the ESL part has that piece of college support and readiness.” The findings did not reveal a lack of college support in ESL and ABE, but rather different perspectives on what was entailed. For example, ESL participants focused on learning cultural norms as readiness indicators: “That’s the culture...they need to know how to be independent learners.”

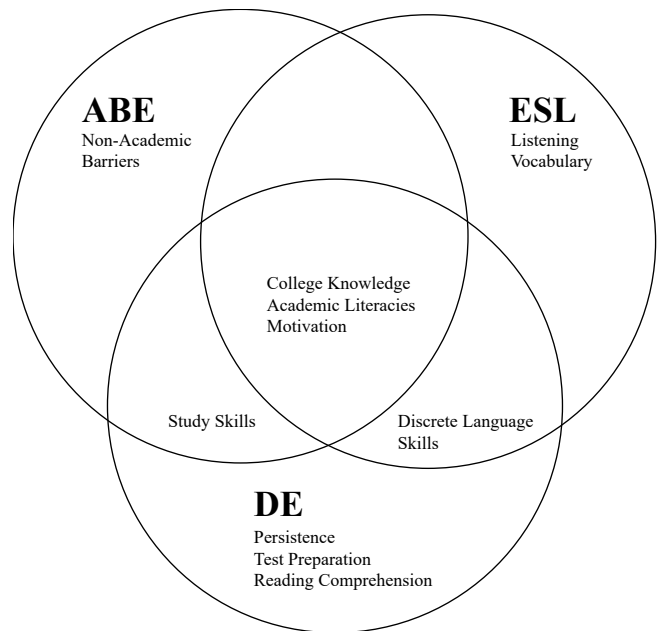
In DE, academic literacies were defined as being “able to speak, read, and write in English. Reasonably well. We don’t expect perfection.” ESL participants offered similar such as being able to “read at a...high enough academic level that they could function in a university course,” as well as writing and listening. However, ABE participants talked more about belonging and mentorship: “that’s our goal, is to mentor our students through this process, so, that’s what we do.”

When discussing barriers, DE participants compared English to native language use: “I mentioned the syntax and then thinking in their native language is a very difficult habit for them to break.” Whereas ESL and ABE participants talked more about adapting to cultural differences: “I’m not sure what their home education was like, but the culture difference was so serious” (ABE).

Compared to DE practitioners, those in ESL and ABE made more connections to the world outside of college. ESL emphasized preparing students for life beyond courses and encouraged students to bring their life into the class. ABE instructors incorporated the experiences of students into

their beliefs about what students needed. They emphasized preparing students for life beyond college courses.

FIGURE 1: Similarities and Differences



Tensions Across Fields

An unexpected finding was the level of tension that we discovered between fields. Some ESL participants questioned the role DE plays in the transition from adult ESL to college, describing it as “a very unfortunate pathway.” A general perception was that students in DE courses were very different from linguistically diverse students, and therefore, had different needs: “Dev. Ed students have a lack of basic study skills and study ethic. And some of them have learning disabilities. And so, I think it’s a very, unfortunate thing that ESL students would go into Dev. Ed classes.” The greatest difference mentioned was that linguistically diverse students need help with language, whereas students in DE need help with study skills and acquiring postsecondary academic literacies.

The ABE participants presented conflicting perceptions of educators in other fields. One participant specifically mentioned the ESL faculty within their organization as essential contributors to their students' transition from Adult ESL to college: "Our ESL faculty are really good, they're really good at helping students transition." Another questioned the quality of the DE field: "The work that ESL teachers do is solid, fairly consistent across the board, hopefully. I couldn't say that for Dev. Ed." The participant noted "the lack of infrastructure" within leadership, explaining "faculty are still doing what they've always done," and that this leads to students "falling through the cracks." This issue was due to a lack of support and resources for instructors, "it's an assistance problem, not a people problem."

Conflicts seemed to arise from a lack of resources. As one ABE participant explained: "There's been moments at the early stages about 'you're taking my students' but...we're not trying to keep them.'" Another participant elaborated,

The diminished number of financial hours that are going to be paid...a lot of our colleagues in the reading and ESL are clamoring to hold on to these students who should be put into the co-req models but instead are allowing them to chew up their financial aid by cannibalizing possible student enrollment.

Such financial tensions create rifts between faculty who otherwise share a goal of supporting students. Findings indicate how limited financial resources may confound student needs with funding needs. Beneath the infighting, there is a clear goal as Melanie articulated, "I just want people to get their needs met, their education met. It's only going to help them down the road, you want to give every student a chance at having a future, that's how I see it."

Discussion

This study explored the perceptions of instructors

about the needs of linguistically diverse students in preparation for college-level courses. Similar to past research (Armstrong et al., 2016), our findings revealed a lack of shared understanding of college readiness. Moreover, the findings show discrepancies both within and across fields. In examining our findings across cases, we saw that DE, ABE, and ESL instructors all had different understandings of the academic literacy needs of linguistically diverse students.

Contrary to past work defining the foundational goals of developmental education, the findings from conversations with practitioners revealed minimal focus on the social, cognitive, metacognitive, or affective components of learning (Arendale, 2005; Holschuh & Paulson, 2013). Instead, practitioners focused on preparing students for tests and textbooks. In our interviews with DE instructors, we found a higher prevalence of deficit perspectives about students compared to interviews with both ABE and ESL instructors. These findings indicate a lingering perception of DE as remedial rather than holistic. Furthermore, there was no point of alignment across participants, suggesting a need for a shared understanding of college readiness in the field of developmental education.

Practitioners in ESL described college preparation as a combination of academic language, language strategies, and critical thinking which was closely aligned with Parrish's (2015) perspective on ESL courses. Moreover, there was a greater consensus on the needs of linguistically diverse students compared to the findings from DE. Participants all discussed the importance of understanding literacy expectations as well as how to navigate the college environment more broadly.

Finally, ABE findings uncovered more emphasis and integration of academic literacies than the

literature suggested. In contrast to definitions of ABE, predominantly workforce preparation and civics education (OCTAE, 2020) or basic skills education (CareerOneStop, n.d.), ABE participants offered expansive perceptions of student needs. ABE participants were, indeed, more likely to focus on skills needed beyond college compared to the other fields. This aligns with ABE's emphasis on workforce readiness. However, participants were also more aware of the non-academic needs of students and the obstacles that students faced outside of academic contexts.

The tension between these fields suggests that there is limited knowledge sharing and collaboration. This is unfortunate given the common goal of supporting students, there would be potential for the sharing of expertise across silos. ABE instructors, for example, presented the most in-depth understanding of integrating life within and outside the classroom. ESL instructors are language experts, whereas DE instructors have expertise in disciplinary literacies. The diverse perspectives uncovered in the study also hint to a need to better align our understandings of academic literacy, both within and across departments. These tensions may be fueled by funding policies. Rather than a focus on student needs, programs must focus on enrollment numbers, placing these support courses at odds with one another.

The findings revealed a concerning lack of shared theoretical framing among DE instructors suggesting that, though the name of the field has changed, the practices within have not. That DE instructors seemed more likely to frame students in deficit terms was alarming considering the purported expansive view of college readiness (Arendale, 2005). Are some DE courses simply a repackaged remedial course?

DE instructors were more likely to talk about

preparing students for entry-level courses, whereas ESL and ABE instructors talked more broadly about preparing students for long-term goals. Across the three fields, ABE instructors used the most student-centered language and talked about navigating more spaces that just college courses. There is a growing awareness that terms such as “linguistically diverse student” oversimplify the language and literacy experiences of this diverse group of students (de Kleine & Lawton, 2018); yet, the complex identities and experiences of students were limited in our interviews.

The process of explicating tacit ideologies is particularly important for monolingual educators. As Gee (2011) argued,

One always has the ethical obligation to explicate (render overt and primary) any theory that is (largely) tacit and non-primary when there is reason to believe that the theory advantages oneself or one's group over other people or other groups.

It is difficult to understand the experience of learning within a new language unless one has already done so. Given that all educators do not experience living outside of their linguistic comfort zone, it is crucial that those working with linguistically diverse students examine their beliefs. This reflective process might highlight the limits of viewing other languages as the obstacle and rather seeing students are more than language learners.

In alignment with past research, we found that instructor perspectives translated into practice (Assaf & Dooley, 2006; Young, 2020). This means that the way the instructors talked about the students and their needs influenced what and how the students were taught in the class. Supporting linguistically diverse students is not merely access to pedagogical resources but requires a critical examination of the ideologies of college instructors.

Implications

Research is needed that looks more in-depth and perceptions of language and college readiness in each field as well. Future studies should expand this scope to other states and regions. While this study was largely descriptive, larger studies will provide a more complete picture of language ideologies in college preparation. Additionally, research is needed on the motivations behind instructional and curricular choices and how this impacts instructors' goals.

The findings of this study show that instructors across fields have good intentions for students. However, since instructors' perceptions of college readiness varies across fields, the curriculum is inconsistent. Future research should examine how these fields can integrate curriculum and instructional practices more consistently. More professional development opportunities for collaboration across fields is needed in Texas.

Throughout this study, participants offered diverse and sometimes divergent perceptions of college readiness needs. As we work collectively towards a more shared understanding of college readiness at the policy level, community colleges can begin to cultivate an institutional understanding of the needs of linguistically diverse students by encouraging interactions between instructors of various fields. ABE, DE, and ESL instructors need opportunities to learn from each other, but they could also benefit from exposure to

literacy expectations in the college-level courses. For example, colleges could survey instructors across fields to uncover the literacy and language expectations of courses. Instructors of ABE, DE, and ESL may also benefit from opportunities to attend college courses (and vice versa).

Conclusion

Our findings highlighted several misalignments in the way academic literacy is framed. In the place of alignment, we uncovered tensions. With a common goal of preparing students to succeed in college, a shared understanding of college readiness is essential. As educators, when we too narrowly define our role, we risk limiting the academic potential of students by failing to see the ways in which we can support their growth. Though, we all perceive the role of language and literacy in different ways, we are all language teachers, content teachers, and mentors into academic literacies.

Supporting linguistically diverse students requires alignment across fields. As educators, we know there is not a one-size-fits-all approach to instruction. However, regardless of a student's path to college, the standards and expectations should be consistent across fields. As the findings revealed, there is expertise across departments. Our strength is in collaboration and not maintaining silos. The first step to breaking those silos is to understand our own assumptions about literacy and language.

References

- ACT (2019). *The condition of college and career readiness, 2019*. <https://www.act.org/content/dam/act/unsecured/documents/National-CCCR-2019.pdf>
- Almon, C. (2012). Retention of English learner students at a community college. In Y. Kanno, & L. Harklau (Eds.), *Linguistic minority students go to college: Preparation, access, and persistence* (pp. 184-200). Routledge.
- Arendale, D. (2005). Terms of endearment: Words that define and guide developmental education. *Journal of College Reading and Learning*, 35(2), 66-82. <https://doi.org/10.1080/10790195.2005.10850174>
- Armstrong, S.L., Stahl, N.A., & Kantner, M.J. (2016). Building better bridges: Understanding academic text readiness at one community college. *Community College Journal of Research and Practice*, 40(11), 885-908. <https://doi.org/10.1080/10668926.2015.1132644>
- Arnold, K.D., Lu, E.C., & Armstrong, K.J. (2012). The case for a comprehensive model of college readiness. *ASHE Higher Education Report: The Ecology of College Readiness*, 38(5), 1-10. <https://doi.org/10.1002/aehe.20005>
- Assaf, L.C., & Dooley, C.M. (2006). "Everything they were giving us created tension": Creating and managing tension in a graduate level multicultural course focused on literacy methods. *Multicultural Education*, 14(2), 42-49.
- Bartholomae, D. (1985). Inventing the university. In M. Rose (Ed.), *When a writer can't write: Studies in writer's block and other composing-process problems* (pp. 11-28). Guilford Press.
- Barton, D., & Hamilton, M. (2000). Situated literacies. In D. Barton, M. Hamilton, & R. Ivanic (Eds.), *Situated literacies: Reading and writing in context* (pp. 7-15). Routledge.
- Boden, K. (2011). Perceived academic preparedness of first-generation Latino college students. *Journal of Hispanic Higher Education*, 10(2), 96-106. <https://doi.org/10.1177/1538192711402211>
- Bunch, G.C., & Kibler, A.K. (2015). Integrating language, literacy, and academic development: Alternatives to traditional English as a second language and remedial English for language minority students in community colleges. *Community College Journal of Research and Practice*, 39(1), 20-33. doi:10.1080/10668926.2012.755483
- Canagarajah, S. (2011). Codemeshing in academic writing: Identifying teachable strategies of translanguaging. *The Modern Language Journal*, 95(3), 401-417. <https://doi.org/10.1111/j.1540-4781.2011.01207.x>
- CareerOneStop. (n.d.). *Adult basic education*. <https://www.careeronestop.org/FindTraining/Types/adult-basic-education.aspx>
- Cho, Y. & Bridgeman, B. (2012). Relationship of TOEFL iBT(R) scores to academic performance: Some evidence from American universities. *Language Testing*, 29(3), 421-442. <https://doi.org/10.1177/0265532211430368>.
- College for All Texans. (n.d.). *Texas Success Initiative Assessment*. <http://www.collegeforalltexas.com/index.cfm?objectid=63176344-FFFA-217B-60C9A0E86629B3CA>
- Common Core State Standards (2020). <http://www.corestandards.org/>
- Conference on College Composition and Communication. (1974). *Students' right to their own language*. National Council of Teachers of English. <http://www.ncte.org/library/NCTEFiles/Groups/CCCC/NewsRTOL.pdf>
- Conley, D.T. (2008). Rethinking college readiness. *New Directions for Higher Education*, (144), 15-25. <https://doi.org/10.1002/he>
- Contreras, F., & Fujimoto, M.O. (2019). College readiness for English language learners (ELLs) in California: Assessing equity for ELLs under the local control funding formula. *Peabody Journal of Education*, 94(2), 209-225. <https://doi.org/10.1080/0161956X.2019.1598121>
- de Kleine, C., & Lawton, R. (2018). Linguistically diverse students. In R. F. Flippo & T. W. Bean (Eds.), *Handbook of college reading and study strategy research* (3rd ed., pp. 215-226). Routledge.
- Ferris, D. (2009). *Teaching college writing to diverse student populations*. University of Michigan Press.
- Flores, N., & Rosa, J. (2015). Undoing appropriateness: Raciolinguistic ideologies and language diversity in education. *Harvard Educational Review* 85 (2), 149-171. <https://doi.org/10.17763/0017-8055.85.2.149>
- Gee, J.P. (1989). Literacy, discourse, and linguistics: Introduction. *Journal of Education*, 171(1), 5-25. <http://www.jstor.org/stable/42743865>
- Gee, J.P. (2011). *Social linguistics and literacies: Ideology in discourses*. Taylor and Francis.
- Harklau, L. (2000). From the "Good Kids" to the "Worst": Representations of English language learners across educational settings. *TESOL Quarterly*, 34(1), 35-67. <https://doi.org/10.2307/3588096>
- Henry, L.A., & Stahl, N.A. (2017). Dismantling the developmental education pipeline: Potent pedagogies and promising practices that address the college readiness gap. *Journal of Adolescent and Adult Literacy*, 60(6), 611-616. <https://doi.org/10.1002/jaal.640>

- Hoff, M. A. & Armstrong, S. L. (2021). The language-literacy ripple effect on college-goingness for a refugee-background student. *Literacy Research and Instruction*. Advance online publication. <https://doi.org/10.1080/19388071.2021.1921890>
- Holschuh, J.P., & Paulson, E.J. (2013). *The terrain of college developmental reading* [White paper]. College Reading and Learning Association. <https://www.crla.net/images/whitepaper/TheTerrainofCollege91913.pdf>
- Hungerford Kresser, H. & Amaro Jimenez, C. (2012) Urban schooled Latina/os, academic literacies, and identities: (Re)conceptualizing college readiness. *Perspectives on Urban Education*, 9(2), 1-14.
- Kanno, Y. & Varghese, M.M. (2010). Immigrant and refugee ESL students' challenges to accessing four-year college education: From language policy to educational policy. *Journal of language, identity & education*, 9(5), 310-328. <https://doi.org/10.1080/15348458.2010.517693>
- Lawton, R. & de Kleine, C. (2020). The need to dismantle "standard" language ideology at the community college: An analysis of writing and literacy instructor attitudes. *Journal of College Reading and Learning*, 50(4), 197-219. <https://doi.org/10.1080/10790195.2020.1836938>
- LeCompte, M.D. & Schensul, J.J. (2013). *Analysis and interpretation of ethnographic data a mixed methods approach* (2nd ed.). Rowman & Littlefield Publishing.
- Lee, J., Kim, N. & Wu, Y. (2019). College readiness and engagement gaps between domestic and international students: Re-envisioning educational diversity and equity for global campus. *Higher Education*, 77, 505-523. <https://doi.org/10.1007/s10734-018-0284-8>
- Lippi-Green, R. (1997). *English with an accent: Language, ideology, and discrimination in the United States*. Routledge.
- Mazak, C., & Carroll, K.S. (2017). *Translanguaging in higher education: Beyond monolingual ideologies*. Multilingual Matters.
- Parnes, M. F., Suárez-Orozco, C., Osei-Twumasi, O., & Schwartz, S. E. (2020). Academic outcomes among diverse community college students: What is the role of instructor relationships?. *Community College Review*, 48(3), 277-302. <https://doi.org/10.1177%2F0091552120909908>
- Merriam, S.B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. Jossey-Bass.
- Miller, J. (2003). Speaking and identity. In *Audible Difference: ESL and Social Identities in Schools* (pp. 1-20). Multilingual Matters.
- National Center for Education Statistics. (2015). *The condition of education 2015* (. <https://nces.ed.gov/fastfacts/display.asp?id=96>
- National Center for Education Statistics. (2019). *The condition of education 2019*. https://nces.ed.gov/programs/coe/indicator_cgf.asp
- Niranji, D.P., Pathirage, A., Morrow, J.A., Walpitige, D.L., & Skolits, G.J. (2014). Helpfulness of ESL courses for international students studying in the United States. *International Education*, 43(2), 25-38.
- Office of Career, Technical, and Adult Education. (2020). *Adult education and literacy*. <https://www2.ed.gov/about/offices/list/ovae/pi/AdultEd/index.html>
- Parrish, B. (2015). Meeting the language needs of today's adult English language learner: Issue brief. American Institutes for Research. https://lincs.ed.gov/sites/default/files/ELL_Increasing_Rigor_508.pdf
- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). SAGE.
- Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. *Harvard Educational Review*, 78(1), 40-60. <https://doi.org/10.1002/anie.200803420>
- Shapiro, S. (2012). Citizens vs. aliens: How institutional policies construct linguistic minority students. In Y. Kanno & L. Harklau (Eds.). *Linguistic minority immigrants go to college: Preparation, access, and persistence*, (pp. 238-254). Routledge.
- Springer, S.E. Wilson, T.J. & Dole, J.A. (2014). Ready or not: Recognizing and preparing college ready students. *Journal of Adolescent and Adult Literacy*, 58(4), 299-307. doi.org/10.1002/jaal.363
- Street, B.V. (2001). The new literacy studies. In E. Cushman, E. R. Kintgen, & B. M. Kroll (Eds.). *Literacy: A critical sourcebook*, (pp. 430-442). Bedford/St. Martin's.
- Texas Higher Education Coordinating Board. (2012). *Statewide developmental education plan: A Report to the Texas Legislature Senate Bill 162, 82nd Texas Legislature*. <http://reportcenter.thecb.state.tx.us/reports/data/crs-de-tsi-statewide-de-plan-sb-162-82r/>
- Texas Higher Education Coordinating Board. (2019). 8th grade cohort tracked through 2019 higher education [Data codebook]. <http://www.txhighereddata.org/index.cfm?objectId=4E600400-D970-11E8-BB650050560100A9>
- Texas Workforce Commission. (2021). *Adult education and literacy*. <https://www.twc.texas.gov/programs/adult-education-literacy-program-overview>
- Vandal, B. (2010). *Getting past go: Rebuilding the remedial education bridge to success*. Education Commission of the States Report. www.gettingpastgo.org/docs/GPGpaper.pdf
- Young, V.A. (2020). Black Lives Matter in academic spaces: Three lessons for critical literacy. *Journal of College Reading and Learning*, 50(1), 5-18. <https://doi.org/10.1080/10790195.2019.1710441>

Digital Financial Literacy

Wil Golden, University of Georgia

Leslie Cordie, Auburn University

Abstract

An individual with digital financial literacy has the knowledge and skills to use digital devices to make better financial decisions. The pervasiveness of financial technology (fintech) in the daily lives of adults in the United States creates digital literacy training and educational opportunities. This report from the field offers a brief literature review, a discussion on digital financial literacy, and the importance of fintech adult education. Our goal is to guide educators and others on how foundational knowledge on digital technologies in relation to financial literacy education can prepare adult learners for the use of fintech. Expanding the use of technology to financial literacy education and practices are as crucial as reading, writing, and numeracy in today's digital economy.

Keywords: fintech, financial literacy, financial well-being

Technology improvements and the growth of technologies in our everyday lives have the potential to improve the overall well-being of society for those with both access and skills (Brey, 2018). For example, the personal computer or smartphone provides us with opportunities and information in the acquisition of goods and services on platforms such as Amazon and other retailers. However, imagine the lives of those lacking the knowledge or ability to properly use the technology or access the information. The use of financial technology (fintech) has elevated digital financial literacy to an important topic for adult educators as a crucial literacy. Fintech incorporates both the technology and delivery of financial services beyond traditional methods (Goldstein et al., 2019). Further, fintech has been pivotal to innovation in the financial services industry dramatically influencing our economic

lives. Fintech allows for a plethora of options to users in terms of online banking, mobile payments, app-based investing platforms, and online shopping for a broad range of goods and services (Goyal & Kumar, 2020).

Educators and practitioners should impart digital proficiencies, and sound financial principles, to address the needs of the 21st-century learner – one who can demonstrate financial skills, not only in the live customer service environment but more importantly, in the online or virtual environment. This move to fintech provides opportunities for adult educators to equip individuals and families with the tools to make better financial decisions and meet their financial obligations. Hence, expanding the use of technology in financial literacy education and practices are as crucial as reading, writing, and numeracy in today's digital economy.

Background

Financial Literacy as a Multi-Dimensional Concept

According to Zait and Berteau (2014), financial literacy incorporates multiple dimensions, where the focus can be on the knowledge itself and/or the ability to gain and use the knowledge. Digital literacy can be defined as using technologies to find, create, evaluate, and communicate information, consequently requiring both cognitive (knowledge) and technical skills to use the technology (Alexander et al., 2016). The Organisation for Economic Co-operation and Development (OECD, 2018) described various aspects of digital financial literacy, including knowledge of digital financial products and services, awareness of digital financial risks, and consumer rights and redress procedures. These definitions illustrate the plurality and significance of the concepts, as they all require knowledge and literacy to use them effectively.

Prevalence of Fintech

Due to the prevalence of fintech and its impact on the financial services industry, opportunities exist to expand financial literacy programs. According to Mention (2019), the fintech global economic investment grew from 2017 to 2018, increasing from nearly \$12 billion to over \$50 billion. Collins and Urban (2019) believed that the expansion of fintech could provide tools to allow individuals to be more responsible for their economic well-being. Perceived financial well-being can be defined as the conditions under which a person can meet their financial obligations and envision a positive financial future (Collins & Urban., 2019).

Worldwide, most adults can access some form of digital device, whether it be a smartphone, tablet or personal computer, even if limited (Vogels, 2021). One survey found that individuals use

mobile apps more than other types of banking services (Panos & Wilson, 2020). Online access allows financial information to be available at an individual's fingertips; however, adults often do not have the digital or financial literacy skills to use the applications effectively (Panos & Wilson, 2020). Further, if individuals do not understand financial principles, they will not be able to benefit from the increased access to financial information (World Bank, 2018). Thus, financial literacy can be enhanced by encouraging and facilitating digital financial education and practice.

Areas of Need

The challenge for developing financial competency using fintech is twofold:

1. generally there is an overall lack of financial literacy among adults (Lusardi, 2019) and
2. fintech requires some technological shrewdness (Senyo & Osabutey, 2020).

Both challenges must be met for individuals and families to access fintech and to make better financial decisions. Within each of these areas, there are separate areas of consideration, including types of banking, internet access, adult learning environments, and technology utilization behaviors.

The Unbanked and Underbanked

The unbanked are consumers that do not use traditional bank methods (Gross et al., 2012). These unbanked consumers frequently use alternative banking services such as payday lending or vehicle title loans. Approximately 11% of U.S. consumers are unbanked and another 11% are underbanked, with these consumers *“more likely than fully banked consumers to have lower incomes and be younger, minority, female, unmarried, unemployed, and unwilling to take financial risks”* (Gross

et al., 2012, p. 4). The researchers estimated that 63% of unbanked and 91% of the underbanked consumers own smartphones (Gross et al., 2012). Therefore, fintech mobile applications could provide access to banking products and services that are significantly cheaper than the short-term, predatory alternatives. Adult educators could join with organizations to improve financial practices for this consumer demographic. For instance, groups such as *Cities for Financial Empowerment Fund* and the *BankOn* national program support moving unbanked and underbanked into safe secure bank accounts in the United States, thereby providing safer financial environments.

Basic Financial Literacy

The United States holds the world's largest economy; however, according to the Standard & Poor's Global Financial Literacy Survey (2014), it ranked 14th in the number of adults who are financially literate (Klapper & Lusardi, 2020). The U.S. adult financial literacy rate is at 57%, only slightly higher than that of Botswana at 52%, a country that is significantly less-developed (Klapper & Lusardi, 2020.). Clearly, although adults in the United States may use digital devices to access financial information, there is still a lack of financial literacy and a potential to use digital information to improve financial decision-making.

Internet Access

Although the lack of internet access (the Digital Divide) has been noted for several decades, inequality in broadband access has come to the forefront during the COVID-19 crisis (World Bank, 2020). In rural America, there are still places where internet capability is limited. Thus, even if the household has access to a smartphone, data costs and limited bandwidth frequently decrease the value of fintech applications (Sahay et al., 2020). However, creative responses, such as school

buses as mobile access points (Wargo et al., 2020), and recent funding to extend internet connectivity to rural areas (Pew, 2020) create opportunities to provide self-directed financial literacy education.

Adult Learning Environments

Self-directed learning is any form of learning in which individuals have primary responsibility for planning, implementing, and evaluating their learning effort (Knowles, 1975), and is the method most often used by adults and, therefore, essential to adult education (Loibl & Hira, 2005). By being able to choose objectives, set schedules, identify preferred strategies, and evaluate training, adults feel more in control of their learning. Research has shown that considerable adult learning occurs outside formal contexts, in places such as the home and workplace (World Bank, 2018). Enabling adult learners to become lifelong, self-directed learners is especially important when formal classroom instruction is not available or practical (Peeters et al., 2014). Loibl and Hira (2005) found that educational materials using four different media types, including the Internet, were used to assess the effect of financial management practice. They found that self-directed, online financial learning was significantly associated with better financial management practices. These results suggest that self-directed learning efforts can meet the challenge of keeping current on changing financial services no matter what the technology available.

New Technology Utilization

Online financial simulations are now common and have proved to be successful in traditional financial literacy education (Kasman et al, 2018). Simulations can dramatically affect learners' confidence with both fintech and finances when used with a mobile budgeting application, instead of the traditional pencil and paper activities (Panos

& Wilson, 2020). Financial simulations can also help adults understand how personal behaviors and decisions affect an individual's sense of financial well-being (O'Neill, 2008).

Despite the availability of such products, development of additional tools targeted at low literacy adults are still needed (Mahendru, 2021). Access to financial services via fintech commands higher financial and digital literacy levels to effectively benefit adults and produce the desired financial results. For example, fintech knowledge is critical to avoiding fraud schemes and other concerns such as discriminatory treatment (Panos & Wilson, 2020). As banks and other fintech firms create digital finance products, there must be parallel educational program development to develop such literacies and create self-directed learners.

Fintech Behaviors

Fintech applications and tools are not without problems. Ease of access may lead to damage by triggering impulsive behaviors. For example, mobile apps can lead to faulty and dangerous decisions by creating emotional states of impulse buying or time-pressured situations (Reyna et al., 2018). Panos and Wilson (2020) provided evidence that mobile users are more likely to engage in impulsive purchasing behavior and tend to choose undesirable financial situations as a result. They noted that mobile loan products are often too accessible and allow fleeting preferences to be acted upon immediately, usually resulting in poor choices. However, fintech tools and applications can also lead to improved financial behaviors. Applications can provide reminders and alerts to individuals to track their spending or record transactions (Panos & Wilson, 2020). These tools have been found to create fintech behaviors that favor financial literacy and better financial management and stability.

Best Practices Going Forward

If adults are not taught the skills needed to navigate the new digital environment and make better financial decisions, larger gaps in financial inclusion will occur between the literate and the illiterate financially (OECD, 2018). The range of financial products available today and decisions concerning these financial products have implications for individual financial well-being. Educational programs need to improve the financial and digital literacy of individuals and families, and ultimately improve their overall financial decision-making. Adult educators can develop more effective curriculum and experiences by understanding the learners' needs, utilizing adult learning strategies, and develop online competencies.

Fintech Needs Analysis

Research and analysis of the individuals and communities who most need financial education is a key area for development related to fintech. First, educators need to determine the learners' demographics, and then analyze the skills and motivations to help understand needs, and lastly, develop the education and training - all in sequential order (Care et al., 2018). Fintech programs should include careful consideration of internet availability and costs in order to develop appropriate objectives and curriculum to meet the learners' needs and applications.

Fintech Curriculum and Training

Fintech and financial literacy education should build on the core critical thinking and problem-solving competencies needed to improve financial well-being. According to Knowles (1980), adult learners should be involved in the learning and development of education and training. Learners should be encouraged to participate by utilizing their own experiences and concerns related to

financial decision-making and technology skills (Lusardi, 2019). Thus, training on the actual digital devices and the fintech applications that the learners' utilize, with the opportunity to reflect on their own experiences, are both the key to fintech experiences. As adult learners have financial experiences in their daily lives, educators can easily incorporate experiences through case studies, reflection, and team-centered scenario discussions (McGrath, 2009).

Implications and Strategies

According to Panos and Wilson (2020), an essential indicator of the ability to make financial decisions is the level of financial literacy in terms of the five core competencies, including earning, saving and investing, spending, borrowing, and protecting. However, with the 21st-century reality, digital skills are critical to utilize fintech in order to achieve better finance well-being. Thus, financial education programs and adult educators need to incorporate digital competencies along with financial principles to ensure quality fintech curriculum. Inclusive fintech literacy training and programs should provide the digital tools and confidence to use fintech efficiently and effectively, thereby improving the learners' financial decision-making (Lusardi, 2019).

Fintech adult education can provide the foundational understanding of the financial world and improve access and capability. Clearly, fintech programs should provide opportunities for self-directed learning opportunities. According to Bannister et al. (2012), self-directed learning, audio-visual streaming, and simulations are becoming increasingly popular educational resources. Financial simulations, where

individuals are allowed to learn by doing, can dramatically affect learners' confidence with both fintech and finances (Panos & Wilson, 2020).

Adult educators can support digital literacy across the spectrum of adult learning and build the skills necessary to understand the digital environment. The variety of technologies can be overwhelming, yet educators can utilize basic teaching strategies no matter the type of device or internet access. Mann (2021) noted the importance of learning in the online environment and developing skills related to accessing digital interfaces, reading online, understanding graphics, and netiquette as important starting points for adult learners with low technology skills.

Conclusion

Improving financial futures of individuals and families lies in digital financial literacy coupled with sound financial decision-making for securing economic well-being. As adult learners seek out more financial answers, well-designed educational options are essential for 21st-century learning on fintech. The COVID-19 pandemic, associated economic downturns, and the increasingly digital world, all highlight the reality that self-directed financial literacy through fintech will become even more critical in our global economy. We, as adult educators, can support and develop sound financial education programs that promote income security and economic well-being for less literate populations. In doing so, fintech may help close economic inequalities between individuals, families, and communities through financial inclusion and access to global information.

References

- Alexander, B., Adams, S., & Cummins, M. (2016). *Digital literacy: An NMC Horizon project strategic brief*. The New Media Consortium. <https://www.learntechlib.org/p/182086/>
- Bannister, R. Eades, K. Hensley, B. Kieffer, C. & Staten, M. The role of professors in improving financial literacy. *Journal of Applied Finance*, 22(1), 186-194.
- Brey, P. (2018). The strategic role of technology in a good society. *Technology in Society*, 52, 39-45. <https://www.sciencedirect.com/journal/technology-in-society/vol/52/suppl/C>
- Care, E., Kim, H., Vista, A., & Anderson, K. (2018). *Education system alignment for 21st century skills: Focus on assessment*. Center for Universal Education at The Brookings Institution. <https://www.brookings.edu/research/education-system-alignment-for-21st-century-skills/>
- Collins, J. M., & Urban, Carly. (2019). Measuring financial well-being over the lifecourse. *The European Journal of Finance*, 26(4-5), 341-359. <https://doi.org/10.1080/1351847X.2019.1682631>
- Goldstein, I., Jiang, W., & Karolyi, G. A. (2019). To fintech and beyond. *The Review of Financial Studies*, 32(5), 1647-1661. <https://doi.org/10.1093/rfs/hhz025>
- Goyal, K., & Kumar, S. (2020). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, 2020, 1-26. <https://doi.org/10.1111/ijcs.12605>
- Gross, M. B., Hogarth, J. M., & Schmeiser, M. D. (2012). Use of financial services by the unbanked and underbanked and the potential for mobile financial services adoption. *Federal Reserve Bulletin*, 98(4), 1-20. <https://doi.org/10.17016/bulletin.2012.98-4>
- Kasman, M., Heuberger, B., & Hammond, R. A. (2018). *A review of large-scale youth financial literacy education policies and programs*. The Brookings Institution. https://www.brookings.edu/wp-content/uploads/2018/10/ES_20181001_Financial-Literacy-Review.pdf
- Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*, 49(3), 589-614. <https://doi.org/10.1111/fima.12283>
- Knowles, M. (1975) *Self-directed learning: A guide for learners and teachers*. Cambridge Books.
- Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Cambridge Adult Education.
- Loibl, C., & Hira, T. K. (2005). Self-directed financial learning and financial satisfaction. *Financial Counseling and Planning*, 16(1), 11-21. <https://files.eric.ed.gov/fulltext/EJ1185313.pdf>
- Lusardi, A. (2019). Financial literacy and the need for financial education: Evidence and implications. *Swiss Journal of Economics and Statistics*, 155(1), 1-8. <https://doi.org/10.1186/s41937-019-0027-5>
- Mahendru, M. (2021). Financial well-being for a sustainable society: A road less travelled. *Qualitative Research in Organizations and Management: An International Journal*, 16(3/4), 572-593. <https://doi.org/10.1108/QROM-03-2020-1910>
- Mann, R. (2021). *How to support digital literacy in adult learners*. Digital Promise. <https://digitalpromise.org/2021/02/08/how-to-support-digital-literacy-in-adult-learners/>
- McGrath, V. (2009). Reviewing the evidence on how adult students learn: An examination of Knowles' model of andragogy. *The Adult Learner: The Irish Journal of Adult and Community Education*, 2009(September), 99-110. <https://files.eric.ed.gov/fulltext/EJ860562.pdf>
- Mention, A. L. (2019). The future of fintech. *Research-Technology Management*, 62(4), 59-63. <https://doi.org/10.1080/08956308.2019.1613123>
- O'Neill, B. (2008). Financial simulations for young adults: Making the "Real World" real. *Journal of Extension*, 46(6), 1-4. https://archives.joe.org/joe/2008december/pdf/JOE_v46_6tot4.pdf
- Organisation for Economic Development. (2018). *G20/OECD INFE policy guidance on digitalisation and financial literacy*. <http://www.oecd.org/finance/G20-OECD-INFE-Policy-Guidance-Digitalisation-Financial-Literacy-2018.pdf>
- Panos, G. A., & Wilson, J. O. (2020). Financial literacy and responsible finance in the fintech era: Capabilities and challenges. *The European Journal of Finance*, 26(4-5), <https://doi.org/10.1080/1351847X.2020.1717569>
- Peeters, J., De Backer, F., Buffel, T., Kindekens, A., Struyven, K., Zhu, C., & Lombaerts, K. (2014). Adult learners' informal learning experiences in formal education setting. *Journal of Adult Development*, 21(3), 181-192. DOI 10.1007/s10804-014-9190-1
- Pew. (2020). *How states are expanding broadband access*. <https://www.pewtrusts.org/en/research-and-analysis/reports/2020/02/how-states-are-expanding-broadband-access>
- Reyna, J., Hanham, J., & Meier, P. (2018). The internet explosion, digital media principles and implications to communicate effectively in the digital space. *E-learning and Digital Media*, 15(1), 36-52. <https://doi.org/10.1177/2042753018754361>

- Sahay, R., von Allmen, U. E., Lahreche, A., Khera, P., Ogawa, S., Bazarbash, M., & Beaton, K. (2020). *The promise of fintech: Financial inclusion in the Post COVID-19 Era* (No. 20/09). International Monetary Fund. <https://ideas.repec.org/p/imf/imfdep/20-09.html>
- Senyo, P. K., & Osabutey, E. L. (2020). Unearthing antecedents to financial inclusion through FinTech innovations. *Technovation*, 98, 102-155. <https://doi.org/10.1016/j.technovation.2020.102155>
- Vogels, E. (2021). *Digital divide persists even as Americans with lower incomes make gains in tech adoption*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes-make-gains-in-tech-adoption/>
- Wargo, E., Carr Chellman, D., Budge, K., & Canfield Davis, K. (2020). On the digital frontier: Stakeholders in rural areas take on educational technology and schooling. *Journal of Research on Technology in Education*, 53(2), 140-158. <https://doi.org/10.1080/15391523.2020.1760753>
- World Bank. (2020). *The COVID-19 crisis response: Supporting tertiary education for continuity, adaptation, and innovation*. Open Knowledge Repository. <http://hdl.handle.net/10986/34571>
- World Bank. (2018). *Lifelong learning*. https://elibrary.worldbank.org/doi/10.1596/978-1-4648-1328-3_ch4
- Zait, A., & Berteau, P. (2014). Financial literacy – conceptual definition and proposed approach for a measurement instrument. *Journal of Accounting and Management*, 4(3), 37-42. <https://EconPapers.repec.org/RePEc:dug:jaccma:y:2014:i:3:p:37-42>

Learning from Each Other: A Partnership Between an Affordable Housing Organization and a Digital Literacy Research Organization

Kathy Harris, Portland State University

Naila Judge, RWS Group

Chris Burger, EAH Housing

Authors' Note: There are several people who have been instrumental in the success of the EAH Digital Literacy program. Kristin Taylor, vice president of resident, researched each site and coordinated all the different resource coordinators and their leads, along with property managers, maintenance workers and volunteers. Jiano Ma, vice president of technology, was integral in the infrastructure portion of the California Public Utilities Commission grant which preceded the digital literacy program, he and his IT department staff created and managed all the site-wide and “in-class” sub networks so that the students could have internet access in class as well as at their units. Bill Goedecke with the California Public Utilities Commission provided guidance and continued support with clarifying the roles and responsibilities to best implement the grant award.

Abstract

EAH Housing, an affordable housing organization, partnered with the Literacy, Language, and Technology Research group at Portland State University for the digital literacies portion of a digital infrastructure and digital literacies program funded by a grant from the California Public Utilities Commission. Working with the Literacy, Language, and Technology Research group, EAH Housing developed a successful digital literacy program building on a variety of research-based factors that support adult learning of digital literacies, including quality self-access learning materials that are relevant to learners' goals and easy access to human helpers as learners move through pivotal moments in the learning path.

Keywords: digital literacy, technology literacy, computer literacy, digital literacy programs, affordable housing

EAH Housing is an affordable housing organization that has 225 communities throughout California and Hawaii. According to Laura Hall, president and chief executive officer,

“At EAH Housing, ‘a roof is just the beginning’ as we commit not only to provide quality affordable housing but also to lay the foundation for the well-being of more than 25,000 residents” (personal

communication, December 23, 2020). Part of what is required for that journey is affordable access to the internet, access to internet-enabled devices, and the skills to use both.

In June of 2017, EAH Housing (EAH) partnered with the Literacy, Language, and Technology Research group (LLTR) at Portland State University for the digital literacies portion of a digital infrastructure and digital literacies program funded by a grant from the California Public Utilities Commission. The LLTR is a social-justice oriented community working together on service and basic, applied, and action research projects in diverse educational, workplace, and community settings. The partnership between EAH and LLTR continued throughout the life of the digital literacy program, offering a shared passion to close the digital divide and provide mutual support through regular meetings. Here we describe what LLTR brought to the partnership, the digital literacy (DL) program that EAH developed, and recommendations to help guide other digital literacy programs.

EAH partnered with LLTR to design a DL program to meet the needs of the EAH communities, resulting in a program that reflects findings from research as well as the experiences of other LLTR partners. What follows describes the DL program that resulted from the collaboration.

The Digital Literacy Program at EAH

With appropriate funding, DL programs can be very beneficial to the residents of affordable housing organizations, which include working families and children, seniors, veterans, and people with special needs. Affordable housing

organizations are in a good position to offer DL programs. In the EAH DL program, with funding from the California Public Utilities Commission, EAH hired DL tutors and a DL coordinator, purchased laptops¹ for the participants of the DL program and became a partner with LLTR.

Most EAH sites already have some good supports in place for a DL program. For example, they generally have a computer lab with 10 desktops and a screen in front of the room for an instructor to use. Many sites also have a community room with a kitchen where residents can use high speed Wi-Fi. While most of the individual residences have Wi-Fi as well, the facility-wide Wi-Fi is quite slow. For residents who want it, resident services coordinator can help connect people to low-cost internet programs designed for low-income families.

The DL program at EAH is implemented as a 5-week cohort model with a menu of options for participation available to residents. A class is offered one or two times per week at times that are customized to the needs of the residents at that site. For example, at sites where residents were primarily seniors the classes were held at the noon hour. Drop-in tutoring hours provide supplementary support or a replacement for classes for residents who prefer this more informal option. For those who do not want to participate in person, residents can work independently after an initial orientation and device loan agreement. Telephone assistance is nearly always available.

For residents who opt to work with a teacher or tutor, instruction starts after an initial orientation. After a minimum of direct instruction and modeling, they select topic they want to pursue and begin working independently, getting help when they get stuck. The help is provided by

¹ The Urban Equity Group (formerly Stride Solutions/ReliaTech) was the device vendor for reconditioned Windows 10 Laptops and new Android tablets and helped to build curriculum within Learner Web.

the teacher, tutor, peer, or community volunteer. Residents who complete 8 hours of online learning within the 5 weeks of the program at their site earn a digital device and a certificate of completion that is awarded at a ceremony for the entire cohort. The DL Coordinator provides or coordinates device maintenance.

Recruitment

Effective recruitment is an important component of the EAH DL program. At each site, the process consists of going door-to-door to personally encourage participation, putting up flyers around the building to promote participation, and creating community events such as food bank days during which residents learn about the program. However, with adult learners who juggle many responsibilities, finding time for DL instruction is one of the challenges of participating. To address this, the EAH team offers a menu of ways to take part in the digital literacy class: one-to-one tutoring, several different cohort options to accommodate morning and evening schedules, and being able to reach instructors via phone and email.

Instructional Approach of the DL Program

The instructional approach of the EAH DL program is based on a variety of studies conducted in the Literacy, Language, and Technology Research group. For example, Jacobs et al. (2015) found that learners were “drawn to skills, lessons, examples and resources that they see as being connected to goals they have” (p 4), revealing the importance of learning materials that are relevant, even when those goals shift and grow. The EAH DL program used the Learner Web as a source of relevant learning materials. Learner Web, designed at LLTR, is an online learning support system that provides learning material, both curated and original, that is relevant to learners’ own goals and helps them plan and coordinate their efforts.

It provided the learning support system for the project described here. The design of Learner Web and the learning plans that are the curriculum units within it are based on findings from the Longitudinal Study of Adult Learning, which found that adults work toward their own goals, often through a combination of self-study and program participation (Reder, 2012). Its online format is especially beneficial for supporting self-study because it is available when it is needed and is supported by rich multimedia in multiple languages. Games provide on-demand digital skills practice in areas like keyboarding and trackpad use.

The Learner Web learning materials used by EAH included learning plans for:

- Internet Skills
- Advanced Computer Skills
- Digital Health
- Financial Literacy
- Future Learning

Each learning plan consists of multiple parts, each of which contains information, related links to explore, a knowledge check, and practice opportunities when relevant. For example, the learning plan *Advanced Computer Skills* contains a section on computer care and maintenance, which includes topics like keeping your computer clean, updating your software, backing up your files, and virus and malware protection. The Learner Web materials are kept up to date by the partners who use them. Partners like EAH also use Learner Web to create their own learning plans as the need arises.

Residents in the program select learning goals relevant to their lives, which is crucial for adult learning. For example, three popular learning plans are *Windows 10*, *Computer Basics*, and *Computer Care and Maintenance*, which are challenging, but essential

for many jobs and other activities. Residents who want to continue learning after the 5-week program concludes have access to a learning plan that describes a variety of options, such as GCFLearnFree, Khan Academy, and Crash Course. In addition, individual appointments are available for residents who want to continue to learn new skills. For example, after a 94-year-old resident learned how to use a tablet, she requested an appointment to learn how to do her banking online.

In addition to identifying the importance of quality learning materials, research on adult digital literacy acquisition has also revealed that human helpers play a key role in DL acquisition. The helpers can be teachers, one-on-one tutors, tutors in drop-in programs, fellow residents, or others. The role of human helpers is not the same as technical support. Human helpers help learners build and sustain engagement in the learning process, especially when they experience challenges that might otherwise cause them to give up. Those who are English language learners prefer helpers who are bilingual, even when they don't share a common language. Human helpers create personal connections with

learners, acknowledging the challenges that they experience, and provide encouragement. Helpers can respond to learners based on their needs and interests and can use support strategies specific to the needs of each learner (Jacobs et al, 2015).

Research has also indicated that learners find self-paced learning materials reduce stress and increase comfort with the learning process, allowing them to take as much time as needed to interact with the learning material (Jacobs, et al., 2015). The online, self-paced curriculum that was offered makes it possible to comprehend the content without any fear or anxiety because learners are able to go at their own pace without anyone looking over their shoulder. Moreover, they can ask questions both in the group and/or with a tutor; having a tutor available provides individualized guidance and encouragement. Self-paced learning materials also allowed tutors to get new learners started and then provide differential support to individual learners while others worked independently.

Successes in the Digital Literacy Program

Over the course of the program, EAH's DL program has made an impact on more than twelve hundred

TABLE 1: Popular Learning Plans

Learning Plan	Popular Sections	Average Time Spent
Advanced Computer Skills	<ul style="list-style-type: none"> • Computer Care and Maintenance • Computer Basics • Microsoft Suite 	30 hours
Internet Skills	<ul style="list-style-type: none"> • How to Find What You Want Online • How does the Internet Work? • Social Media 	25 hours
Digital Health Literacy	<ul style="list-style-type: none"> • Health Insurance • Family Wellness • Emotional Wellness 	15 hours
Financial Literacy	<ul style="list-style-type: none"> • Money Basics • Banking • Budgeting 	13 hours

adults. While eight hours is required to earn a digital device, it is typical for residents to spend many more hours in the program. Table 1 includes popular learning plans and the average amount of time that residents spent on them at one of the EAH communities.

Twelve hundred is a number that represents 1,200 success stories of residents who went from being uncertain about technology to using it for work, health, and well...fun! For example, one retired resident who had a passion for fashion learned how to send group emails to her clients with updates on new designs and projects she was working on. This helped her save time she could then dedicate to her creative work as she moved from using paper and went digital. The look of excitement on her face will forever stay in the heart of the tutor who helped her. Another resident who always doubted her abilities to use technology blossomed after her success in the digital literacy program. She later emailed the instructors thanking them for giving her confidence to pursue another passion, painting. One of her paintings is hanging in her digital literacy instructor's home.

Some residents reported a great sense of pride in the certificate they earned in the DL program, indicating that it is the first certificate that they've ever earned and hanging a framed copy on their walls. For other residents, earning the DL program certificate gave them the confidence to continue their educational journey and go on to seek additional courses in information technology and other fields. The certificate was proof that they had the ability to use digital tools to find resources, information, opportunities, and other services online.

An unanticipated impact of the program is related to COVID-19, which amplified the need for digital

equity. With many in-person opportunities, including jobs, education, and medical services being moved online, the need for digital access and skills has become more important than ever. EAH played a pivotal role in their residents' lives because the DL program gave many who would not have had it without learning how to use the tools available to them access to their loved ones (especially seniors) as well as to opportunities and information. The following lessons learned can be applied to a DL program in any setting.

Recommendations for Digital Literacy Programs

Knowing who your learner is -- their stage of life, whether they work and what they do, what digital-ready devices they have, and their comfort level with technology -- is the first step in a DL program because it determines the course and approach of the instruction. Conducting this type of needs assessment can also be an important way to start fostering the connection and sense of support and encouragement that many learners need and appreciate. For example, one resident wanted nothing to do with technology, so a tutor asked her what song she loved the most. Then the tutor played that song on her phone and that sparked that resident's desire to learn about technology.

The flexibility and connectedness of the learning community makes a large difference for many. For the many who choose the option, classes build a community where adult learners have a sense of belonging and fuel each other's learning. Something as simple as learning to use Google translate, for example, opens the way for a group of multilingual residents to talk to each other, make friendships, and use it as a tool in their daily lives.

Selecting learning materials that are relevant to learners' goals and allows for self-paced study are both very important. Also important is

selecting a platform that gives easy access to the reporting features needed for grant reporting. It was important for EAH to easily make specialized curriculum based on the needs of the organization. For example, the DL coordinator created learning plans with instructions on using different devices as they were added to the digital literacy program.

Every success story we described here involved the presence of a teacher, tutor, peer or community volunteer who guided, encouraged, and supported a learner. The availability of human helpers is an important component of the success in the EAH DL program as was the fact that the program removed barriers to accessing these human helpers by offering a menu of options for doing so.

Areas of Improvement

The role of community support can be very important in a DL program; many residents came to the DL class to socialize with neighbors while also learning new skills. It would have better supported a strong learning community if it had been possible to organize cohorts more clearly and with more advance notice. A greater use of

on-site volunteers could have better supported the learning community by helping with recruitment and assisting in the classes.

One thing that we learned the hard way is that it is important to spend time up front developing email accounts that people really want to use. While it is quick and convenient to set up generic accounts and assign them to residents, that doesn't create the sense of ownership over an email account that is important in developing one's digital literacies.

The partnership between EAH and LLTR provided mutual benefits. Besides sharing a passion for closing the digital divide, members of both groups helped each other in the development of an effective DL program, supporting many adults in their journey toward confidently using their digital devices to accomplish their own goals. In the end, what matters is helping the residents' have positive experiences developing their digital literacy skills. A resident, when shown how to use the Zoom video conferencing platform said, "Do you know how much this matters in my life? Do you know how much this matters in my life? You changed my world!"

References

Jacobs, G., Castek, J., Pizzolato, D., Pendell, K., Withers, E., & Reder, S. (2015). *Executive Summary: Tutor-facilitated digital literacy acquisition in hard-to-serve populations, a research project*. https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1008&context=digital_literacy_acquisition_findings

Reder, S. (2012). *The Longitudinal study of adult learning: Challenging assumptions*. The Centre for Literacy. http://www.centreforliteracy.qc.ca/sites/default/files/CFLRsrchBrief_Chllngng_Assmptns.pdf

Finally, Some Guidance! Using the Triple E Framework to Shape Technology Integration

Susan Gaer, World Education Partners
Kristi Reyes, MiraCosta College

Authors' Note: The authors would like to thank Dr. Jen Vanek for her coaching, editing, and formatting help.

Abstract

How can schools integrate the lessons of remote learning during the COVID-19 pandemic into their face-to-face teaching. What guidelines can teachers use to be sure they are integrating technology? In this article, we propose an adaptation of the Triple E Framework to guide this work. The goal of the framework is to ensure that technology use supports student engagement, and then, while engaged, students' learning is enhanced and extended by technology.

Keywords: technology integration, adult learners, framework, Triple E

In March 2020 when California went on lockdown due to the pandemic, the Outreach and Technical Assistance Network (OTAN), the provider of professional development in technology integration for adult educators in the state, conducted a survey of adult schools to find out about how they were handling instruction during the lockdown. Of the 242 adult education agencies that participated, 95% of them indicated that they had immediately implemented remote learning options. However, there was a significant drop in student enrollment for 78% of the agencies (OTAN, 2020).

The way schools reacted to the sudden lockdown was to institute “emergency remote teaching,” defined as “a temporary shift of instructional delivery to an alternate delivery mode due to crisis

circumstances” (Hodges et al., 2020, para. 13). As ESL instructors and professional developers managing this new delivery mode, the Triple E framework has been very helpful for us to continue to plan challenging, high-quality instruction that includes deliberately selected tools for effective technology integration. The Triple E framework helps adult educators structure technology integration with students.

What is the Triple E Framework?

The Triple E Framework, developed by Dr. Liz Kolb in 2011, was initially created to support technology adoption in K-12 settings. We have adapted this framework to adult education as a guide for

teachers to meet learning goals with technology tools. In contrast to other technology integration frameworks, the Triple E Framework focuses more on what students **do** with technology. The goal of the framework is to ensure that technology use supports student engagement, and then, while students are engaged, learning is enhanced and extended by technology. Using a simple [rubric](#), instructors can self-assess, and administrators can provide effective feedback on an instructor's technology integration choices.

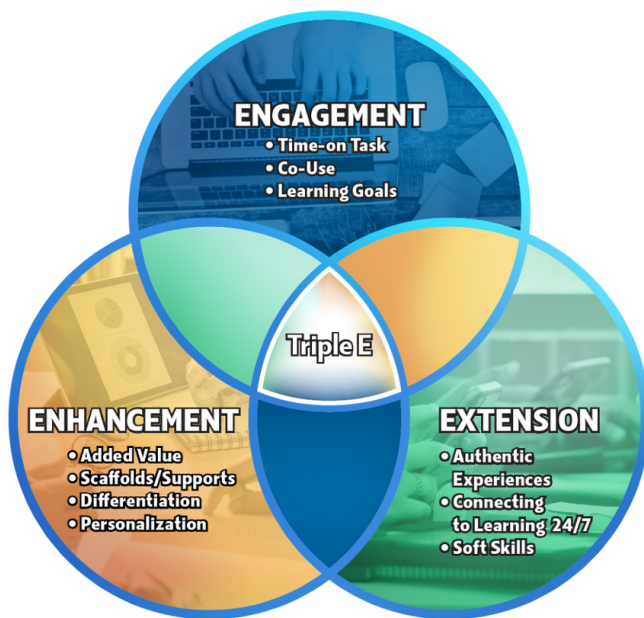


FIGURE 1. The Triple E framework model "Triple E Graphic" by Outreach and Technical Assistance Network is licensed under CC BY-NC-ND 4.0

Each aspect of the framework is described in Kolb's (2017) book, *Learning First, Technology Second: An Educator's Guide to Designing Authentic Lessons*. Figure 1 illustrates three descriptors for what happens when technology is integrated.

Engagement occurs when students actively participate in social learning activities focused on learning goals. For active participation, there needs to be co-use. Students practice, create, communicate, and collaborate through technology

tools. Enhancement is accomplished when students learn better through use of a technology tool. This means that the tool isn't integrated for the sake of technology use but rather because it is a good fit for learning the content. Use of the technology tool has an added value in that students would not be able to learn in the same way or to the same degree as with conventional tools. Extension is students' technology use outside the classroom. Through the technology integration that occurred in their learning in class, students consequently experience a natural connection between school and everyday life. They continue their learning and practice with technology tools apart from the class and on their own, and the technology tool may be relevant to and used for other purposes in their lives.

How to Use the Framework

The framework is a four-step process. The first step is to define the learning goals. For example, let's say the learning goal is to learn to write a comparison paragraph. Once you have defined the learning goal, the second step would be to select the appropriate technology tool. For this activity, Google Docs was selected as the technology tool because they are learning remotely, and it is easy to collaborate on Google Docs. Students would then discuss, on Google Meets or Zoom, in pairs and talk about their similarities and differences. The third step is to engage the students by having them be active and social learners. To scaffold the learning the teacher might give the students a Venn diagram to fill out. Students are told to share the doc with the instructor and thus the instructor can watch the students work in real time. If there appears to be a problem, the teacher can jump in and help. The teacher can share comments with the students, use "suggest mode" for error correction, and ask questions using the Google Docs assign tool. These features help

with the fourth step, which is to connect what students are learning with real world tasks and contexts. In this case, students are learning how to collaborate, and this can carry over to their work or home environment.

The three Es are essential to effective technology integration in instruction. Kolb created the Venn diagram in Figure 1 to describe how learning can occur through technology. The letters A - F in represent the different layers of technology integration.

“A”

There is technology, but there is no integration occurring. For example, students are working on a fill-in-the-blank activity that the teacher printed out from the computer.

“B”

Technology integration should engage students. This is where the first “E,” engagement, is present. Students spend more time on-task, and there is co-use, which Kolb (2017) defines as the person-to-person social use of a digital tool. This means the tool shifts the behavior of the students from passive learners to more active social learners, and students are focused on their learning goals while on a device (Gaer & Reyes, 2019).

“Co-use” is the key to successful engagement, yet not all use of technology in teaching reaches this standard. For example, a teacher takes students to a computer lab once a week for independent work on a software program. This is engagement if students are spending time on task, if they are focused on the program the whole time, and the program is focused on the learning objectives of the class. However, because the students are working independently on the computer and not actively socially engaged, this would not be co-use. Kolb (2017) writes that more successful

technology integration happens when we create lessons that have students “focus on creating content and learning materials around technology tools rather than using apps and websites with a ‘drill and practice’ approach to learning” (p. 14). The latter type of technology integration used in isolation has little to no measurable effects on student achievement (Kolb, 2017). Engagement is not enough; the technology integration must enrich learning (Gaer & Reyes, 2019).

“C”

Technology integration should enhance learning, the second E in the Triple E Framework. Kolb (2017) writes, “In life, we don’t select a tool and create a problem just so that we can use the tool; rather, we select a tool to meet the needs of the problem,” (p. 3). Use of a tool also must enhance students’ learning. Enhancement means the student creates content to demonstrate learning. For example, students playing a Kahoot game is engagement, but students **creating** a Kahoot game is enhancement. To support enhancement, which requires pushing students’ critical thinking, analysis, and evaluation skills, Kahoot has developed a [printable game planning template](#) for students to create their own games.

To support enhancement, the teacher must develop scaffolds to make it easier for students to understand ideas and concepts. For example, students collaborate on a Google or Word document online, giving each other feedback before submitting it to the teacher. This activity would allow students at a higher level to help those at a lower level (Gaer & Reyes, 2019).

To achieve enhancement, students should be able to demonstrate their understanding better through technology than they could with a more traditional tool. Does the activity show you that the students have learned a concept?

“D”

Technology integration should extend learning, the third E of Triple E. Extension leads to students learning outside the class. Teachers typically think of extension as homework, but the authors believe that homework that does not extend into the students’ everyday lives is not useful. Technology tools are available to students 24/7, and if you find an activity that the students think is important and related to their technology learning needs, they will spend time outside the classroom learning. For example, instead of giving the students a vocabulary list to remember, have them open a Quizlet stack on their phones. Having students use their phones for activities such as this builds students’ comfort with using apps. They can then study the vocabulary at home, at work, on the bus, or during lunch. The Quizlet sets now become a bridge between school and their everyday lives. Students can create digital artefacts with photos they take of

their own lives. Once students see the impact on their learning, Quizlet stacks will become a part of their own personal learning network. This is what we want happening in our classrooms with technology integration: students engaged, learning enhanced, and learning extended outside the classroom, the Triple E framework.

Resources that Support Evaluating Activities

According to the Triple E framework, if you achieve B, C, and D you will hit the “sweet spot” -- the perfect lesson. However, this is not necessary in order to have a well-integrated lesson. The table below is a user-friendly rubric designed by and shared with permission of Karen McKinley of the Warren County Educational Service Center in Lebanon, Ohio. The rubric is an abridged version of Kolb’s more comprehensive work (Kolb, 2017). We have adapted McKinley’s version below for adult educators.

Engagement through technology	0 = No	1 = Somewhat	2 = Yes
Students focus on assignment/activity/goals			
Students are motivated			
Student are active social learners			
Enhancement of the learning goals			
Students develop or demonstrate more sophisticated understanding of the learning goals or content			
Technology creates supports to make it easier to understand concepts or ideas			
Students demonstrate understanding in a way that they could not do with traditional tools			
Extension of learning goals			
There are opportunities for students to learn outside of typical school day			
There is a bridge between students' school learning and everyday life experiences			
Students build authentic life soft skills			
Reading the results		Totals	
13 - 18: Exceptional connection between learning goals and tool		_____ / 18	
7 - 12: Some connection between learning goals and tool			
6 or below: Low connection between learning goals and tool			

We have created the traffic light system visual shown in Figure 2 based on Kolb's rubric to provide a visual illustration.



FIGURE 2. Triple E Framework technology integration rubric visual

To use the rubric and then see your “stoplight score,” select a lesson of your choice, rate the lesson based on the rubric, and then note the points. After you finish, add all the points together to see a numerical score showing how your technology integration measures up against the Triple E Framework. Find that number in the stoplight.

Red is the lowest level of integration. Many activities that use technology fall in this category, for example, when the activity just requires students to play an online game in their classroom. Activities that rank in the red zone do not use authentic engagement. According to Kolb (2017) “. . . part of measuring engagement must consider whether or not the students are dynamically involved in the learning process” (p 40). We must strive to do more with our technology use to increase authentic engagement.

The yellow zone usually indicates that the lesson has either engagement and enhancement or engagement and extension.

While it is great that instructors are using technology more purposefully, there is still room to better support student learning with technology tools. **Scoring in the green zone is the sweet spot.** These are lessons that help students connect their learning to their worlds outside of the classroom, keep them engaged in the classroom, and keep them focused on their learning goals. This is the type of lesson for which teachers should ultimately strive.

While hitting the sweet spot is ideal, it is more important that we as teachers get out of the red zone. Using the Triple E Framework rubric to analyze your lessons will help you see where you can improve over time (Gaer & Reyes, 2019).

Conclusion

At the time of writing, many adult educators are still not teaching in person, but now many more teachers are comfortable with distance and blended learning. It is important to start thinking about how to realistically integrate technology into learning objectives in a sustainable and thoughtful way. The Triple E Framework of engagement, enhancement, and extension can support this work. Engagement must include co-use, which will increase students' social interactions and engagement with the content. Enhancement should include a way for students to share their learning with others, such as a student portfolio or online presentation. Extension requires that students know how to use the tool for their day-to-

day lives. A good lesson has all three of these Es.

Knowing that we will return to in-person instruction, how would you like your future classroom to look like? Do you want to go back to exactly what you were doing before the pandemic or do you want to integrate more technology into your lessons with better results, lower student drop rates, and higher levels of persistence? The authors recommend using the Triple E framework, as it is an easy framework to use and understand. To give you guidance on lessons that meet the framework, we have provided examples for low beginning ESL through ABE Language Arts and one basic math lesson. We hope you enjoy these lessons.

Sample Lessons

- **Understanding basic car parts for the purpose of reporting accidents**
- **Learn how to make a simple mask**
(Low Beginning ESL)
- **Virtual Model: Describing and selecting attire appropriate to situations**
(Intermediate-Advanced ESL)
- **Using Food Labels to Make Better Food Purchases**
(ABE, Intermediate-Advanced ESL)
- **Math: Understanding Digits**

References

- Gaer, S., & Reyes, K. (2019, November 04). *The Triple E Framework for more effective technology integration in adult education*. EdTech Center @ World Education. <https://edtech.worlded.org/the-triple-e-framework-for-more-effective-technology-integration-in-adult-education/>
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). *The difference between emergency remote teaching and online learning*. EDUCAUSE Review. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>
- Kolb, L. (n.d.). *Triple E printable rubric*. Triple E Framework. <https://www.tripleeframework.com/triple-e-printable-rubric-for-lesson-evaluation.html>
- Kolb, L. (2017). *Learning first, technology second: An educator's guide to designing authentic lessons*. International Society for Technology in Education.
- Kolb, L. (2020). *Learning first, technology second in practice*. International Society for Technology in Education.
- Outreach and Technical Assistance Network. (n.d.). *COVID-19 critical events survey*. <https://otan.us/resources/covid-19-field-support/>
- Outreach Technical Assistance Center. (2020, August). *What we learned: Adult education response to emergency remote teaching and learning*. EdTech Center @ World Education. <https://edtech.worlded.org/twg/>

A Journey Through the Digital World: Fostering Digital Problem Solving Among Adult Learners

Tyler H.J. Frank, Clark College

Author's Note: My thanks to Dr. Jill Castek who taught me everything from the importance of learning in the digital world to the (non)existence of the Pacific Northwest Tree Octopus. My work in this area would not be possible otherwise.

Abstract

To meet the demands of the 21st century, adult learners must display a range of sophisticated strategies for dealing with the digital world. With the switch to online instruction over the last months this need is only greater. In this article, I describe specific activities I implement with adult learners in a math and science class to help them develop these essential abilities while also enhancing their learning toward the content outcomes.

Keywords: adult basic education, digital literacy, digital problem solving, problem solving in technology-rich environments

Since switching to completely online classes because of the pandemic, more than ever I have noticed my students leaving the learning management system (LMS) in my courses to explore the internet for additional information on the topics we're learning. My department, whose classes serve as both high school equivalency and developmental education, has committed to using only open educational resources, which means that students do not buy a textbook, and for fully online classes all the information for the class is located on the LMS. Many students simply go where they find the information that makes the most sense to them; they are learning from the

curriculum I have placed on our LMS, but they're also learning from information they discover on the internet. In a sense the internet has become a part of the curriculum of my classes whether I like it or not. And if that's the case then I must help my students wrestle with and make sense out of this new expanded curriculum: the entire internet.

The students who can do this are demonstrating motivation and metacognitive awareness of their own level of understanding. Those traits are necessary for becoming self-directed learners, something that needs to be fostered among adult learners. Some students, though, are not searching the internet to answer their questions

about the class's content. Many of these students may not have the experience, confidence, or even skills to do that. Some don't own a computer and are borrowing one from the school just to be able to take online classes. Consequently, these students would benefit the most from a focus on how to navigate the internet strategically and assess the information they encounter. In the 21st century, everyone must navigate the digital world, learn new tools and platforms on demand, and parse out the fake, from the misleading, from the biased, from the authoritative.

To successfully confront these challenges, which may feel like just one more demand on already overwhelming to-do lists, teachers need manageable ways to address them. I am going to share relevant frameworks that inform my teaching in this regard and then activities I use in one of my classes to help my students grow more sophisticated and adept in three pivotal, but overlapping, types of interactions with the digital world: (1) exploring and navigating, (2) using new tools, and (3) evaluating information.

Relevant Frameworks

I identified these three interactions as pivotal for my own work with adult learners not only through my teaching experience but also through participating in research around adult digital problem solving and reading relevant literature and frameworks.

As a graduate student I participated in the research project called Advancing Digital Equity in Public Libraries. This research allowed me to observe vulnerable adult library users as they made their way through digital tasks. The "Blueprint for Designing Digital Problem Solving Tasks," one of the deliverables from this project, outlines tasks from finding reliable information about health

issues to getting resume help, offering specific questions which can be used to guide and scaffold learners along the way (Castek et al., 2018). I adapt these suggestions for my classes.

The Program for the International Assessment of Adult Competencies (PIAAC) has developed assessments to measure Problem Solving in Technology-Rich Environments (PS-TRE). The four cognitive dimensions from PIAAC's PS-TRE framework provide an organizational approach for thinking about what students need to be able to do: set goals and monitor progress; plan and self-organize; acquire and evaluate information; and use information (Vanek, 2017). This framework has also informed my understanding the most important interactions for adult learners to master in the digital world. The activities I describe here engage learners across all four dimensions.

The International Standards for Technology and Education (ISTE, 2020) Standards for Students are also helpful for considering the varying roles of an expert problem solver in the digital world. The activities I deploy in my classes invite students to take on roles such as "knowledge constructor," "empowered learner," and "global collaborator." I believe the three interactions I will focus on here are core abilities to taking on these various roles.

The Frameworks in Action

I apply these frameworks in a fully online, integrated math and science high school completion course to allow my students to work toward the learning outcomes of the class while simultaneously developing and honing their skills interacting with the digital world. These activities engage students in three actions in the digital world: exploring and navigating, learning new tools, and evaluating information.

Exploring and Navigating

Since many of my students are already exploring the internet for supplementary information for class, I have created a series of activities to incentivize that while emphasizing a metacognitive, strategic, and evaluative approach. I organize this series of navigating and exploring activities into three broad steps: accompanying students into the digital world, incorporating choice for students, and finally student reflection.

Step 1: Accompanying Learners into the Digital world

First, learners need low-stakes opportunities to begin searching for information and I need formative assessments to understand how to help them. I give my students a brief survey asking about their access to the internet, the device(s) they will be using for the course, how successful they usually are when trying to find information online and what they do if they are struggling to answer a question online. Through this I learn about my students' access to technology and their self-perceived efficacy.

Next, I ask the students to select one of the course objectives that is unfamiliar and find some information about it for a discussion post. I make it clear that they don't have to "learn" it yet, because we'll be doing that all quarter. They just find out what it's about. Through this discussion I can see if students are comfortable sharing links, or even searching at all, allowing me to reach out early to students who may need assistance with digital literacy skills. This early discussion about course outcomes also sets the tone for the class as a community of learners, where everyone contributes helpful knowledge to the community and learns from each other – a key approach in classes where students necessarily bring a diverse range of skills for the digital world.

Step 2: Preparing Learners to Choose Paths for Exploration

To help my students think explicitly about the strategies they are using and reflect on the planning and self-organizing cognitive dimension of PS-TRE (Vanek, 2017), I ask them to describe their "journey" while navigating the internet and searching for information. As a midterm review discussion board, I ask the students to pick a class topic that has been challenging and search for more information about it online, thus offering some support to them in the goal-setting cognitive dimension as well (Vanek, 2017). I ask them to list all the "stops" on their "journey" searching for information on the topic they selected along with their reasons for stopping or moving on from each. Even though I can't actually observe them as they solve problems in the digital world, as the *Blueprint for Digital Problem Solving Tasks* suggests (Castek et al., 2018a), this activity offers me a window into their world, while both encouraging them to think metacognitively and reminding them to study for the midterm. With leading questions and responses as I engage in their conversation in the discussion board, I can offer new ideas and strategies as well as help further their thinking. Conversations generally center on the usefulness of the math they find but can also lead into whether websites are trying to sell subscriptions or products or have lots of ads and distracting clickbait. One of my main goals is to make explicit all the implicit questions expert digital problem solvers ask themselves. Example questions from the *Blueprint for Digital Problem Solving* can be very helpful and easily adapted to this activity:

- Are you checking in to determine if you found what you were looking for?
- Which keywords did you use to conduct a search?
- Does the resource you found help you answer your question or fit your information needs?

- Does the search lead to more questions or information seeking (Castek et al., 2018)?

Step 3: Helping Learners Reflect on Their Journey

Students write a review of one website, app, or YouTube channel as the final step of this process. They rate the resource on the helpfulness of its information and the ease of navigating it to find that information. They write their final review in a Google Doc and share it with their classmates. This artifact serves as an assessment of their evaluation of online resources and allows me to share their expert-student perspectives on online resources with students in other math classes. I also give them the same survey from the beginning of class to measure the development of their perceptions of themselves and their conscious strategies.

Using New Tools

PIAAC recognizes three aspects to problem solving in technology rich environments: the task, the cognitive dimensions, and the technology used (Vanek, 2017). I believe the third aspect, technologies, deserves focused attention. As the ISTE (2020) Standards for Students point out, using digital tools to accomplish goals is necessary for becoming an empowered learner. Therefore, I design activities for students to develop their skills with specific digital tools. For example, I incorporate Google Docs into the class since students have school Gmail accounts and it is a common, useful tool. I apply a gradual release of responsibility with Google Docs. The first activity is low stakes, simply asking them to open a Google Doc and include two pieces of information that will be used for an activity. This allows me to see early if students can access Google Docs and understand how to navigate and edit. I can contact any students who don't include their information and work with them to ensure they can do both of those in the future.

In the coming weeks, students must access a Google Doc shared by the class to solve one assigned problem related to the week's topics and check on one of their classmates' solutions. From this they learn how a Google Doc can be used to collaborate as they can all see each other's answers and work together to make sure they have completed that week's problem set. This assignment mirrors one used in other math classes at my institution, thus preparing my students for potential future classes.

Finally, the students write the website reviews (described above) in a Google Doc and share them with their classmates. Thus, by the end of the quarter they are comfortable creating a shared doc for collaborative work, similar to what we use the entire quarter. Learning a platform such as Google Docs, or many of the other countless digital tools which could be introduced in a similar manner, gives students a powerful tool to use in their own work whether they need to organize information, collaborate, or publish something such as a resume. And beyond those, students can use a platform they understand well as an analogy for learning new ones they encounter in future explorations.

Evaluating Information

Barely a day goes by without news of more misleading -- sometimes dangerous -- information traveling around the internet. Everyone needs to continue developing the critical lenses necessary for evaluating the information they find on the internet, one of the cognitive dimensions of PS-TRE (Vanek, 2017). Additionally, the ISTE (2020) Standards for Students point out that this ability is fundamental to a learner's role as a knowledge constructor. While I ask the students to evaluate a website for their review, I offer them further development in information evaluation since it

is fundamental for understanding when one has accomplished their goal in an information search. Additionally, I believe it would be irresponsible to send them searching the internet for information without providing them with the necessary tools. I use the A.S.P.E.C.T. framework (an acronym for six steps of analysis: authority, sources, purpose, evenness, credibility, and timeliness) developed by Clark College librarians as a student guide for evaluating the reliability and usefulness of information. The online guide includes multiple example questions to be used in each of the six steps (Clark College Libraries, 2020). I introduce the A.S.P.E.C.T. framework, then ask students to apply it by learning about two weird-sounding animals: one fake (the Pacific Northwest Tree Octopus) and one real (the furry lobster). They have to decide which information is trustworthy and which is not by applying the framework.

As the term continues, I ask students to apply the framework to information I provide, or they find, and to explain their conclusions. So, by the end of the quarter they are more naturally applying

the principles of the framework and critiquing the information they find, making it easier for them to recognize when they have arrived at information that satisfies their needs.

Where to Go from Here?

To help adult learners not just survive, but thrive, in the 21st century digital world, I believe teachers must engage them in the practices and thinking of a savvy digital problem solver. This means using activities such as the ones I've described above, but also continually searching for new paths, perhaps bringing a critical lens to how users' supposedly "private" information is used by platforms that students are asked to use (such as Google). This does not mean sacrificing time from course objectives, but instead embedding students' learning of the objectives within digital problem solving. Many students are already exploring the digital world, while others are uncertain where to begin. Still others aren't yet adept enough to deal with potential pitfalls along the way. It's time to begin accompanying them on some of these journeys.

References

- Castek, J., Gibbon, C., Jacobs, G., Frank, T., Honisett, A., & Anderson, J., (2018). *Blueprint for designing digital problem solving tasks*. Digital Problem Solving Toolkit. https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1000&context=digital_equity_toolkit
- Clark College Libraries. (2020). *Evaluating information: A.S.P.E.C.T.* <https://clark.libguides.com/evaluating-information/aspect>
- International Society for Technology in Education. (2020). *Standards for students*. <https://www.iste.org/standards/for-students>
- Vanek, J. (2017). Using the PIAAC framework for problem solving in technology-rich environments to guide instruction: An introduction for adult educators. Program for the International Assessment of Adult Competencies. https://static1.squarespace.com/static/51bb74b8e4b0139570ddfo20/t/589a3d3c1e5b6cd7b42cddcb/1486503229769/PSTRE_Guide_Vanek_2017.pdf

Forum: What's in a Name?*(Part 1 of 3)*

Adult Foundational Education: Why a New Name and Definition Is Needed

David J. Rosen, Steering Committee Member, Open Door Collective

What name do you use to describe our field? Adult literacy? Adult education? Adult education and literacy? Adult basic education? Adult ESL or ESOL? Which name best describes our work? Which name do you think is preferred, and why? Which of these is not sometimes interpreted to mean something else? Which, if any, best distinguishes our work from that of those who work in credit-bearing post-secondary education or PreK-12 education? Which, if any, best captures the full range of education services the field offers?

The answer to most of those questions, other than that they all distinguish education for adults from PreK-12, is “none of the above.” For example, the name “adult education,” while it has the advantage of including the fullest range of our field’s services, often confuses policy makers and the general public who assume we are referring to higher education, or to non-credit courses offered in higher education or by local community education centers, often for enrollees’ personal development.

“Adult basic education,” which is the name used by most practitioners in my state for example, has the advantage of distinguishing the field from higher education and PreK-12, but it has two meanings, one referring to the full range of education services, the other referring only to the (non-ESOL) services ranging up to pre-high school equivalency. Similarly, adult literacy is confusing

to policy makers and the general public because sometimes it refers to the full range of services, often including ESL (or ESOL). However, at other times it means specifically beginning reading; beginning reading and writing; beginning reading, writing and numeracy, and recently I have seen adult literacy mean reading, writing, numeracy and digital literacy.

“Adult education and family literacy” is the name used in the current major piece of federal funding for our field, the Workforce Investment and Opportunity Act, Title II. This is complicated as a name for the field. While few would argue that helping adults prepare for jobs and careers is unnecessary – indeed it is a major reason that many adults seek our services – some have argued, and I am one, that family literacy does not get equal emphasis in the act and in its implementation. The way the act is interpreted by states and programs, and the program incentives currently in place, make it difficult for adult education programs and adult schools to serve learners at the lowest levels. Both to those within our field and to the general public, this name also does not communicate well what services are and are not offered.

It is likely, despite our best efforts, that none of these names, and possibly no new name, will perfectly communicate what we do. That is because most in the general public do not know

our field exists. Most people have a pretty good idea what PreK-12 education does, and what higher education (sometimes with the simple added explanation of “you know, college or university”) does. But our work is largely invisible to most people, and often to legislators. It is further complicated because we address beginning levels through preparation for post-secondary education. This education is offered by different kinds of organizations and institutions. Sometimes when I address groups of people I ask, “What are the three major kinds of education in your state, and in the country. I always get PreK-12 and higher education, but unless adult basic education or another of the names above is in the presentation title, rarely can anyone name the third field. Of course, just changing and defining a name will not in itself change that lack of awareness. It would need to be accompanied by a major, multi-year, multi-partner media campaign.

Toward the end of last year, my colleagues and I on the Steering Committee of the Open Door Collective thought we could come up with a new name that might – with its accompanying definition – make it clear what we do and what kinds of education organizations and institutions do it. With it as a starting point, and perhaps, with a media campaign, we could bring attention to the populations served that could have a memorable and persistent impact.

You may wonder what the Open Door Collective is. Founded nearly 8 years ago as a national group of volunteers, and now one of two national programs of Literacy Minnesota, its mission is to work with other agencies and organizations to reduce poverty and income inequality in the United States. Because it was founded by adult educators, the great majority of its members are from our field; however, there are a significant number of people who work in other fields. They work in health

care, employment and training, and in public libraries. They work with older adults. They are advocates and/or provide services of many kinds for immigrants and refugees. They are advocates for digital equity and for digital inclusion. If the Open Door Collective interests you, you can learn more at <http://www.opendoorcollective.org>.

As the Open Door Collective Steering Committee considered the name and accompanying definition, I opened two public discussions about these to those in our field. I also thought it would be useful to create a list of the criteria I had considered for a good name for our field and for its definition. Here are the criteria I used:

The name should be clear. It should distinguish our field from preK-12 and credit-bearing higher education. The definition of the name should:

- Make clear the breadth and boundaries of the field’s education services to adults;
- Describe the field in a way that is worthy of serious and sustained public investment and research;
- Be short enough to include in a footnote;
- Be written in plain language that most people can understand, spelling out acronyms and avoiding jargon;
- Allow the inclusion of emerging or newly recognized areas and services, such as digital literacy skills, integrated education and training, and digital navigation services;
- Avoid excluding types of providers of those services; and,
- Avoid descriptions of the differing approaches used in the field, the different kinds of supportive services needed, history, major contributing organizations and other aspects that would make the definition long or complicated. However, a link to a document

with these longer descriptions could be provided with the definition.

The Open Door Collective Steering Committee considered several names, all of which included “adult” and “skills.” For some time, the Open Door Collective had used adult basic skills, but we were concerned that “basic” might be interpreted too narrowly, and some of us were aware from a survey that had been carried out by the Florida Literacy Coalition, that some adults interpreted that to mean “a minimum level of quality or service” as in the basic model of a product or service, not top of the line. We were also interested in finding a name that while used and defined differently in other parts of the world, could be freshly defined in the United States. We settled on the name “adult foundational skills” because it distinguishes what we do from credit-bearing higher education, and PreK-12 education. Also, foundational suggests the kinds of learning that might, once acquired, be built upon for post-secondary education, an apprenticeship or occupational training; it might, we thought, gain the respect of adult learners and it might be clearer to policy makers and the general public.

We also discussed and drafted a definition that we thought might meet the criteria I set out.

I wanted to know what members of our field thought about the name and our proposed definition so in January this year I opened two discussions, one in the LINCS Community’s Teaching and Learning group, and the other in the AAACE-NLA Google group. I received many thoughtful comments from these discussions. One, from the LINCS discussion, influenced our changing our proposed name to “adult foundational education,” the name the Steering Committee has since agreed on and which we now use. There were also suggestions for the

definition, many of which we have incorporated in our current version below, which has not yet been approved by the Steering Committee.

Adult foundational education refers to core skills and knowledge that adults need for work, further education, helping their families, functioning effectively in their communities, and as citizens in a democracy. It includes:

- English language skills for immigrants and refugees (ESL/ESOL);
- Beginning literacy for adults who cannot read and write well, or at all;
- Numeracy;
- Adult basic education;
- Adult secondary education leading to an adult high school diploma or high school equivalency certificate;
- U.S. citizenship preparation;
- Preparation for post-secondary education, and occupational training, or apprenticeships;
- Employability skills/Work readiness skills;
- Family/intergenerational literacy;
- Integrated education and training; and,
- Other foundational education and skills that are needed throughout the adult life span but are not necessarily related to work or career, such as digital literacy, financial literacy, health literacy, native language literacy, and literacy for self-advocacy, civic engagement, and social justice.

Adult foundational education may be offered by community-based programs, public schools, community colleges, volunteer tutoring programs, public libraries, corrections institutions, adult public charter schools, employers, labor unions, faith-based organizations and other kinds of organizations and institutions.

It's important to correct a misunderstanding that has come up in several of these discussions. This is a name proposed for the field, not necessarily as a name for individual education providers. Adult foundational education might be used, for example, in journal articles such as this or in other publications, in research, professional development, discussions with policy makers, and in some cases with the general public. You might, for example, if someone you meet casually asks, "What you do?" reply, "I teach in adult foundational education," quickly followed by "that's what our field is now called." This might prompt questions about what you teach or otherwise do in this field, what kinds of students the field serves, where classes are offered, how it is funded and more. As I try this out with my grant writing friends, I can't wait for "Are you telling me your job is to teach foundations how to raise or distribute funds?" As I wrote, there is no perfect name for our field.

One might wonder – I certainly do – if this name

and definition will catch on in our field and broadly in the United States. So far, no one has vigorously opposed the new name or definition, although one colleague commented, "...not partial to it" and another liked the name they were currently using. Comments from ODC members and from the two public discussions have been very positive. These include: "I love the name," "We like this!," "I certainly notice the term catching on," "I've recently started using adult foundational skills, as well," "Basic has always felt condescending and no other term included the full umbrella of skills, which resulted in a rattling off a laundry list of categories. I happily sign on to the change!," "Lots of good points," and "This name could be debated indefinitely, especially amongst a bunch of educators. But this terminology seems functional enough to steer educational efforts."

If the name does catch on, it will be because enough people in our field like it and its definition well enough to use it. To be widely used by the general public will take a much greater effort.

Adult Foundational Education: A Fresh Seed Sown?

Ralf St. Clair, University of Victoria, Canada

David J. Rosen's essay calling for a new unified name for adult literacy, numeracy, and English language education is thought-provoking indeed. His argument is based on the perceived failure of any of the current names to describe the field's activity adequately. Rosen suggests none of these names is beloved by the field or represents it clearly. They are described as confusing and unclear to people not involved in our work and not very useful for those within it. The replacement he and his colleagues from the Open Door Collective present is "adult foundational education."

I must admit to a little hesitancy about the argument, both in terms of premise and conclusion. In other words, I'm not sure Rosen makes a good case for there being a problem capable of solution, and I'm also not sure, even if there is a problem, the proposed name is the answer. I'll look at these parts one at time.

It is worthwhile clarifying one point before addressing these parts of the argument. When thinking about renaming any set of activities it is critically important to have clear boundaries. Rosen's definition of the area under discussion is "core skills and knowledge that adults need for work, further education, helping their families, functioning effectively in their communities, and as citizens in a democracy" followed by a list of examples. This very broad, as it could

easily include associate's and bachelor's degrees, professional development, and bible study, among many other possibilities. I find myself genuinely uncertain whether the aim is to sublimate all education for adults under foundational skills or to address only literacy and related areas.

In order to discuss Rosen's proposals seriously, it may be helpful to set aside this enormously inclusive definition to avoid undermining the argument. The remarks in this response will be focused specifically on the field outlined in the purpose statement of this journal: "adult literacy, numeracy, and English language education in publicly funded, community and volunteer-based programs in a wide range of contexts" (ProLiteracy, n.d.). Adopting this boundary for discussion helps significantly in clarifying Rosen's argument and, based on my knowledge of Rosen's work, is generally compatible with his interests and intent.

The first section of the paper presents the case for seeing current names as failures; for example, Rosen argues that "adult education" is a name that "confuses policy-makers and the general public, who assume we are referring to higher education or to non-credit courses offered in higher education or by local community education centres." Another issue Rosen raises as evidence of a failure of naming is the relative invisibility of family literacy. It seems important to pause and

consider if these are really problems solvable by a new name. Even Rosen's essay seems unsettled about the extent to which the names used for our field are to blame for its relative invisibility. The essay contains a description of people overlooking the field because they do not recognise its name, but there is also acknowledgement this will not be improved simply by changing the title.

Nonetheless, Rosen's prescription is for a new name to "make it clear what our field does and what kinds of education organizations and institutions do it" along with a media campaign to publicise the new formulation. The essay provides a list of criteria the new name should meet, and it must also distinguish our work from that of credit-bearing post-secondary and PreK-12 institutions.

The first question is whether any name can accomplish all of this and whether language works like this in any context. Wittgenstein (1953/2009), who thought about this issue a lot, rejected the idea of a one-to-one mapping between word and referent, positing the idea of "a complicated network of similarities overlapping and criss-crossing" (p. 66). This notion was extremely influential in the field of linguistics and easily illustrated in everyday language. For example, the word "dog" may refer to a furry four-legged friend, but seems harder to pin down when we describe someone as dogged as they work through their homework, call ourselves dog-tired, or celebrate finding a pair of antique fire dogs. Words gain their meaning through relation with other words, not through careful pre-determination of what they should mean. The instrumental use of language Rosen is advocating does not appear to be viable in natural language.

Where it is used is branding. Coca-Cola™ has been around for over a hundred years using the same name to refer to a single sweet, fizzy beverage with

a handful of variations. The brand works because it is simple, ubiquitous and promoted with billions of dollars a year (Pham, 2021). Rosen's call for a "major, multi-year, multi-partner media campaign" to support a new name appears to reflect his awareness of re-naming as a branding issue. The usefulness or viability of such an effort does not appear self-evident and Rosen does not say what the aim would be. There is certainly an argument for familiarity or name recognition (as it is called when applied to politicians) as a first step in broader acceptance of an idea or activity. But the other part of good advertising is a call to action (Drink Coke!™) and without it familiarity counts for little. It's not clear what the associated action would be in this case, making it hard to assess whether the efforts were paying off. I also think it would be hard to make a case to funders for spending money on branding rather than program delivery. With no call to action and no single product a branding exercise would have little impact.

The profile of the adult literacy field may be limited partly because the resources being put into our work are themselves limited. The annual budget for community-based adult learning in my home jurisdiction is roughly equivalent to the annual budget of a largish elementary school. There are over 1,500 schools, elementary and much more expensive high schools, in that jurisdiction. Even if the other funding streams for adult learning were to be taken into account, the work of adult literacy, numeracy and English-language programs attracts a miniscule proportion of the resources for schools and universities. It seems unlikely any new name would make us more prominent in policy conversations.

Finally, based on my own experience, I'm not at all sure people engaged in the work—in all its glorious variety and inconsistency—would

necessarily rally to a single new flag.

In summary, the argument for a new all-encompassing name for the bundle of activities in which we are engaged is not a slam-dunk. With our existing histories and diversities, it is not clear we can get there from here--or would want to. Wittgenstein's (1953/2009) insight may be useful in helping us think of ways to highlight the commonalities of our work through a network of similarities rather than seeking formal alignment. The implication of this stance is, of course, that the scattered and overlapping names we currently use may represent us better than we sometimes assume.

Turning to the more speculative question of what name would capture all we do (this would be a great ice-breaker for a workshop), it is hard to escape context and all its implications. One striking aspect of Rosen's suggestion is how much it reflects North American thinking. In this part of the world we have an extraordinarily linear conception of education, for the most part. Even though our borrowed lands are home to about 5% of the world's population we sometimes fall into assuming the rest of the world uses the same sort of system, which is not the case. Defining education for adults against the PreK-16 continuum, either sequentially or as an alternative, both limits what can be included and also serves as a form of self-marginalisation because we lie outside that continuum.

If learning and education are seen from a competence-based perspective instead of "years of school," perhaps resembling the European Qualifications Framework (Europass, n.d.), it is easier to think of learning as occurring within a broad ecosystem with many different pathways. Learning sites outside of the formal system can be acknowledged as important components of this ecosystem.

A further implication of this thinking is the recognition of learning as inherently valuable rather than worthwhile because it leads to the equivalent of completing high school (which is a meaningless concept in most of Europe). Moving to a less linear system where people can demonstrate skills through formal examinations, work experience, professional development and a whole range of other mechanisms would help to move adult literacy, numeracy and English learning beyond the perception of remedial education. It could-- and would-- take a central place in skills development.

Within a less linear framework any notion of "foundational" or "basic" is unhelpful. The levels may be cumulative, but may not. The idea of any learning task being inferior to, or preparatory for, another is not a necessary part of the structure. Somebody with a high level of knowledge in one area may be at a very different level of knowledge in another, meaning they would need support to transition into a new set of competencies. One example is nurses from the Philippines who come to North America and end up working as homecare workers. These are very highly skilled people held back by racist perceptions and their specific language skills from meeting North American nursing standards (Guo, 2015). Overall, linearity plays a very limited role in everyday learning, and our field should be challenging linearity rather than reinforcing it.

The question of whether "adult" should be part of any new name is far from simple. As described by Rosen, the work done by the term in the proposed title is not clear. It can be read as implying an adult version of the sort of education normally done by *not* adults: children, in other words. This does not seem to bring a lot of clarity to the endeavour, especially as part of our work is with people who have not attained the age of majority.

Taking the name “adult foundational education” as a whole, one concern is the degree of conservatism it represents. It does not tackle or re-frame the impression of deficit on the part of learners, an issue haunting our field. It makes no claims on existing formal education structures to acknowledge the scope, legitimacy, or expertise of our field--and the learners within it--but instead seems to signal contentment with the place we have been assigned. “Foundational” risks being read as a synonym of “simple.” The learners we serve are very often people of color, people living with poverty, and people experiencing other forms of marginalisation. There is a moral duty to challenge the any perception that these learners would benefit from simple education. Overall, while there may be good reason to be unhappy with the present name for the field, the new name seems to double down on our challenges rather than offer new vistas and new pathways to influence.

Having been so skeptical about Rosen’s argument, I feel it is only fair to expose my own thinking briefly. I am not sure we are well served by meso-level terms. At the broadest level our work is adult education; at the narrowest it is working with adult literacy learners in the community agency on Maple Street. Policy may need an intermediate level to write on funding envelopes, but I’m not at all sure it matters what that is and whether it varies.

I’d like to close by thanking David Rosen and The Open Door Collective for bringing this idea forward. It’s certainly stimulating to think about. I fear whatever we choose to call our fields will end up as a fundamentally contested term, with some folk having business cards proudly printed and others seeing it as ignoring or dis-respecting what they do. Our work has always been like this, shape-shifting its way through the demands of funders and the language applied by different policy regimes.

References

- Europass (n.d.). *The European Qualifications Framework*. <https://europa.eu/europass/en/european-qualifications-framework-eqf>
- Guo, S. (2015). The colour of skill: Contesting a racialised regime of skill from the experience of recent immigrants in Canada. *Studies in Continuing Education*, 37, 1-15. <https://doi.org/10.1080/0158037X.2015.1067766>
- Pham, M. (2021, April 19). Coca-Cola to hold marketing spend in countries with slow vaccine rollout. *Marketing Week*. <https://www.marketingweek.com/coca-cola-marketing-spend/>
- ProLiteracy. (n.d.). *Adult Literacy Education: The International Journal of Literacy, Language, and Numeracy*. <https://www.proliteracy.org/ale-journal>
- Wittgenstein, L. (2009). *Philosophical investigations* (4th edition) (P.M.S. Hacker & Joachim Schulte, Eds. and Trans.). Wiley-Blackwell. (Original work published 1953).

Forum: What's in a Name?*(Part 3 of 3)*

Demystifying a Field: Wonderings on Classifying for Clarity in Adult Education

Leah Katherine Saal, Loyola University Maryland

Last December, I participated in a series of conversations at the Literacy Research Association's annual conference about changing the name of the Adult Literacy Study Group. The Adult Literacy Study Group, originally facilitated by Erik Jacobson, develops and supports diverse collaborations among scholars and raises awareness of the acute need for adult literacy research. Group members didn't believe that the current name represented the full range of topics and questions explored by the body. After some discussion and debate, the name was modified to the Adult, Family, and Community Literacies Study Group. The name change is not succinct, but the group wanted to better articulate the "big tent" or "multiplicity of foci" for potential participants. The purpose of this name change is to highlight for those studying adults' literacy learning, in its broadest conceptualization across locales, that there is a home and potential collaborators for their work within the group. So, I come to this response to David J. Rosen's article, "Adult Foundational Education: Why a New Name and Definition Is Needed," with these recent conversations in mind, my own need to provide explanation for my areas of practice and research to former and current employers, and as an advocate for adult learners and continued support of adult learning contexts the United States and beyond.

To begin, I applaud the efforts of the Open Door Collective (ODC) to move this long overdue conversation around classifying and categorizing the work of the field of adult education forward. They, including David, are correct in the assertion that, "the general public do not know our field exists." Raising awareness for adult education in the public sphere and securing ongoing funding certainly require clarity and boundaries for any field of study and practice. As a practitioner and researcher of "adult basic education," the term used in Maryland for programs and classes focused on teaching adults' text-based literacy skills, I have struggled to define the field in ways that were helpful to possible funding entities, my employers, and, especially, the adults who I am privileged to learn with and from.

The names and associated definitions we use for the field of adult education have very high stakes. First, as David well-articulated, terminology and associated definitions can matter a great deal for policy-making and associated financing mechanisms. The right or wrong word or turn of phrase can open or close funding streams. College and career readiness, 21st century skills, digital citizenship, STEM education, upskilling, and workforce development are all recent exemplars that come to mind as associated with different initiatives and priorities for federal and state departments and/or non-governmental funders.

Second, since the field of education is highly siloed, understanding where people, programs, and initiatives fit within these silos, is often key to outlining job expectations and corresponding accountability structures. Therefore, terminology and associated definitions also can matter a great deal to researchers and practitioners whose contracts, performance reviews, and annual evaluations are often tied to operationalized definitions of these terms. Finally, and perhaps most importantly, chosen terminology and associated definitions can matter a great deal to adult learners themselves. Terms and associated definitions often have the high stakes repercussion of helping adult learners initially identify and locate needed or desired educational services and programs. Correspondingly, unfortunately in practice, terms for the field are also often used as a proxy to label learners themselves.

Considering these high stakes contexts, I have a few wonderings related to the proposed name change from adult education to adult foundational education.

Specifically, I wonder if a term like “foundational,” defined by Merriam-Webster (n.d.) as “related to or forming or serving as a base or foundation” is framed in or connotes deficit understandings of adults’ existing skills or their goals for their educational experiences? For example, names like “adult basic” or “functional education” already denotatively and/or connotatively promote deficitized frameworks of adult learners’ skills. These names/terms define adults’ skills in deficient positions (when compared with other adults) and often fail to capture the educational assets of adults with lower text-based skills. In fact, adults often labeled as “basic learners” have amazing existing compensatory skills and funds of knowledge

which allow them to effectively navigate their environment and be highly competent and functional in many settings (González et al., 2005, Perry et al., 2017; Saal & Sulentic Dowell, 2014). Additionally, I wonder if the term leaves space for those who study or work with adults whose skills and practice are diverse (from those with burgeoning levels of skill in an area to those with advanced skillsets seeking continuing education)? In short, I wonder, *Does labeling the field with the descriptor of “adult foundational education” capture our understandings of who adult learners are?*

Further, terms like “foundations” or “foundational studies” of education are already used to describe an area of study in education which focuses on policy analysis, curriculum theory, and the application of other fields like anthropology, history, law, philosophy, and sociology to the examination of education (Canestrari & Marlowe, 2020). Typically, foundational education studies are often devoted to the critical studies of power within intersecting systems of society, culture, and law and carry a special emphasis on problems of race, gender, sexual diversity, social class, and multiculturalism. Given this context, I wonder, *Does the descriptor of “foundational” and its associated defined and existing area of study and practice capture the varying perspectives of study and practice of the field of adult education?*

Finally, I am curious about how renaming can fully address the problem articulated by Rosen and the Open Door Collective. Yes, raising the visibility and understanding of the field of Adult Education is both necessary and vital to maintaining public goodwill, funding, and services. But, I wonder, *Could efforts towards increasing visibility and understanding the field of adult education be additionally or alternatively approached?*

These wonderings bring me back to the recent conversations of the LRA Study Group, and Rosen’s frame for the name change in the article. He states:

Most people have a pretty good idea what PreK-12 education does, and what higher education (sometimes with the simple added explanation of “you know, college or university”) does. But our work is largely invisible to most people, and often to legislators. It is further complicated because we address beginning levels through preparation of post-secondary education. This education is offered by different kinds of organizations and institutions.

Again, I concur with Rosen and the ODC that classification of what we do is a central challenge of the field of adult education. However, my recent experiences, the quote above, and Rosen’s further assertion that “there is no perfect name for our field” highlights for me how classifying the field with one term has inherent limitations. In the article proposing the name change, the ODC Steering Committee has also attempted to account for this challenge by outlining some initial categories of educational services provided and possible locations for the services of the field. But, I wonder, *Along with conversations around qualifiers, definitions, and other naming conventions, is there another way to supplement the renaming efforts initiated by the ODC?*

As one possible addition, Bennett and George (2005) showcase how typological theories and associated typologies are useful to map and classify a comprehensive inventory of cases with a goal of addressing complex phenomenon

without oversimplification. Outlining the **locales** (adult schools, community colleges, four-year universities, community-based non-profit settings, prisons, etc.), the **delivery** method (online, hybrid, face-to-face), the **duration** (short or long-term), the **disciplinary** focus (literacy, language, numeracy/math, workplace skills, citizenship, health, financial, and so on), and the **demographic** focus (specific sub-populations like young adults, older adults, parents, immigrants, etc.) for the field’s programs or services would significantly assist in explaining not only what we do (disciplinary focus) but also the contexts (locale, delivery, demographics, duration) of what we do as a field. Creating a flexible system, a typology, for classifying and outlining the field of adult education as it continues to evolve and highlights and celebrates the strengths of our diversity could also lead to additional clarifications and critical questions of the field for those of us inside. Particularly, I would love to see a collaboration across researchers, practitioners, and adult learners to create a comprehensive typology of our field to provide classifications and demystify the field.

While additional mapping or framing may be necessary to achieve all the aims of the ODC, I look forward to seeing how these important conversations and initiatives move our field forward toward increased clarity for all.

References

- Canestrari, A. S., & Marlowe, B. A. (Eds.). (2020). *Educational foundations: An anthology of critical readings*. SAGE.
- González, N., Moll, L., & Amanti, C. (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. Lawrence Erlbaum.
- Perry, K. H., Shaw, D. M., Ivanyuk, L., & Tham, Y. S. S. (2017). Adult functional literacy: Prominent themes, glaring omissions, and future directions. *Journal of Language & Literacy Education*, 13(2). http://jolle.coe.uga.edu/wp-content/uploads/2017/11/Perry_JoLLE2017.pdf
- Saal, L. K., & Sulentic Dowell, M. M. (2014). A literacy lesson from an adult “burgeoning” reader. *Journal of Adolescent & Adult Literacy*, 58(2), 135-145. <https://doi.org/10.1002/jaal.325>
- Merriam-Webster. (n.d.). Foundational. In *Merriam-Webster.com dictionary*. Retrieved July 19, 2022, from <https://www.merriam-webster.com/dictionary/foundational>

Review of *Contested Spaces of Teaching and Learning: Practitioner Ethnographies of Adult Education in the United States*

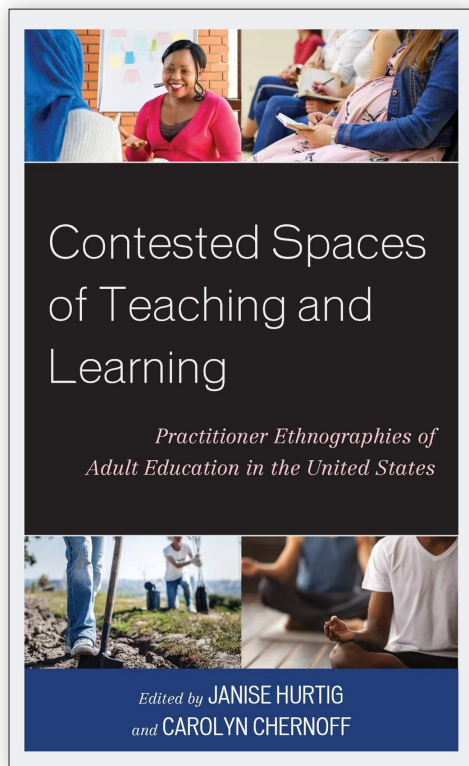
Alexis Cherewka, Pennsylvania State University

The purpose of *Contested Spaces of Teaching and Learning: Practitioner Ethnographies of Adult Education in the United States* is to examine how adults make sense of and change their teaching and learning environments to advocate for social justice. Through practitioner ethnography, the authors (1) argue that adults dispute the educational options they are given in a variety of ways by explaining how adults advocate for their needs and (2) reflect on how their roles as practitioner and researcher affect their own analysis of these processes. Avoiding the typical isolation of teaching and learning as separate practices, these chapters instead demonstrate how teaching and learning are inextricably linked. Critical frameworks support the analyses, and paired with the diversity of contexts, offer the reader multiple options to consider their own experiences as an adult learner and adult educator.

The chapters are divided into three coherent sections, spanning efforts of contention in community education spaces, institutional spaces, and public spaces. In the first section (Chapters 1-3), the practitioner-researchers focus on how adults challenge conventional curricula such as maps, digital literacy curriculum,

and writing curriculum.

In these cases, the adult learners both indirectly and directly communicate their needs among themselves and with educators, and in doing so, transform the curricula. Within the second section (Chapters 4-7), authors emphasize alternative approaches of co-educating and co-learning in the contexts of yoga for incarcerated men, Black Sunday school teachers' training, a professor's university classroom, and union organizers becoming co-educators. Authors in



Hurtig, J., & Chernoff, C. (Eds.). (2020). *Contested Spaces of Teaching and Learning: Practitioner Ethnographies of Adult Education in the United States*. Lexington Books. 235 pages. \$105.00, hardcover. ISBN: 9781498581325

this section highlight the teaching and learning practices of teachers who learned about pedagogy through non-traditional means, examine their own teaching and learning practices and expose the complicated terrain of the dual roles of teacher and learner. In the final section (Chapters 8-11), the ethnographers describe how teaching and learning occur in the public arena, especially for people who have experienced marginalization. In public spaces such as choirs, cultural programs, mutual aid associations, and parades, the authors address how identity formation takes place in collective learning environments. In doing so, they provide careful description of the conflicting viewpoints and complicated nature of teacher and learner roles in informal learning contexts.

As is claimed, the ethnographers provide thick description of how these acts of protest at the micro level can reveal resistance to macro-level structural forces. Though not all chapters specifically address the concept of neoliberalism, each chapter presents detailed accounts of one context and connects it to larger efforts toward social justice. This includes examples such as how resettled populations in ESL classes transform from their given role of consumer to teacher and community leader (Chapter 1) and how incarcerated men who teach yoga class resist traditional notions of masculinity and collectively establish and maintain their own teaching and learning community (Chapter 4). Additionally, within this thick description, the authors position themselves and the tensions of their work as practitioners within neoliberal structures, thoroughly outlining their thought process in undertaking these studies. The collection itself includes practitioner-researchers who occupy varying roles and identities, from practitioners reflecting on their own practices to researchers who play a volunteer role.

This book is relevant for adult education practitioners, adult education scholars, and critical education scholars. For adult education practitioners who share social justice aims and the goal of creating an educational environment that promotes adult learners' own needs, these case studies may reflect what they see in their own contexts or offer new ideas for adults to have a greater say in what and how they are taught. For adult education scholars who are interested in ethnographic methods, this collection suggests several ways that researchers can situate themselves in their research and provides rich, contextualized examples of how to use ethnographic methods to depict practices of adults advocating for justice. Lastly, the detailed, varied accounts of how teaching and learning are contended provide a worthwhile resource for critical educational scholars who wish to examine how social justice initiatives take place in non-formal and informal learning contexts. The case studies are presented in separate chapters, each with detailed stories, making the text highly readable and an appropriate resource for many contexts such as graduate-level education coursework or working groups of adult education practitioners.

Ultimately, the editors follow through on their promise to deliver a resource that highlights how adults negotiate education in order to promote social justice aims. The ethnographers supply concrete, complex examples of how this process unfolds, and in doing so, expose the messiness and conflict that can occur within groups of adults and among the overlapping and sometimes contradictory roles of co-learners and co-teachers as they attempt teaching and learning. The practitioner-researchers' ability to apply critical theory to their cases is comprehensive, giving the reader several ways to consider how critical theories can illustrate the concrete practices of how adults

make their educational experiences better align with their needs and goals. Though the notion of contesting conventional education is discussed throughout the book, at times it is unclear how the authors conceptualize conventional education or what adults are contesting.

Despite the immense value of this book and the author's detailed discussion of their positionality and application of critical theories, as a novice education researcher with limited experience with ethnographic methods, I sometimes wanted more details on precisely how the ethnographers had conducted their ethnographic methods, especially in how they designed and implemented their

complex observational and interview processes. Given that one goal of this study is to promote ethnography in adult education, it is important to note that other novice researchers may also desire more detail about how to conduct ethnographic studies. Even though the methodology description is limited at times and the concept of conventional education and contestation remain a bit ambiguous, this book makes a significant contribution to the field of adult education. The book demonstrates that supporting the creation of educational spaces for contestation is not merely empty language, but a set of specific deliberations and educational practices by teachers and learners.

Review of the *Maryland Department of Labor's Adult Education Digital Literacy Framework for Adult Learners: Instructor Implementation Guide*

Nell Eckersley, Literacy Assistance Center

The *Maryland Department of Labor's Adult Education Digital Literacy Framework for Adult Learners: Instructor Implementation Guide* is a very useful resource. The need to teach digital literacy skills has never been more widely recognized than now. This guide goes a long way to illustrate how to think about integrating digital literacy skills into content instruction through the lesson activities and online resources it contains. The crosswalk with College and Career Readiness standards and CASAS standards also makes this guide very helpful for teachers who may be applying these standards already but had no guidance on how to incorporate digital literacy skills into the content they were already teaching. The guide also offers versatile lesson ideas that can be used as they are written or as models that instructors can use to develop lessons specifically related to the learners in their classes.

This resource for adult education instructors was developed to provide practical examples of how to implement the [Digital Literacy Framework for Adult Learners](#), a separate publication, also developed by the Maryland Department of Labor, which introduces the seven interconnected

elements of the Digital Literacy Framework: technical, civic, communicative, collaborative, computational thinking, investigative, and productive.

The guide is clearly and attractively laid out with a table of contents that contains hyperlinks that makes it easy to navigate around inside the 137-page document. The guide consists of an overview followed by three sections:

- Section I: Lesson Activities;
- Part II: Curated Resources; and
- Part III: Appendix.

Section I contains 33 lesson activities divided into seven content areas: general, college and career, reading, math, social studies, writing, and language learning. Under each content area there are two to eight lesson activities. It is evident that the guide was made specifically for adult education as each lesson includes a breakdown of the College and Career Readiness Standards for Adult Education and CASAS Competencies and Content Standards incorporated in the activity. This crosswalk between digital literacy skills and existing adult education standards

Harris, J., & Adetunji, B. (Eds.), *Maryland Department of Labor's Adult Education Digital Literacy Framework for Adult Learners: Instructor Implementation Guide*. Maryland Department of Labor. 137 pages. PDF. <http://labor.maryland.gov/gedmd/dlfinstructorguide.pdf>

and competencies clearly demonstrates a model for how to integrate digital literacy into adult education. Each lesson also includes a list of objectives, materials, resources, instructions, extension activities, and key observations. While most of the lessons are designed for work on a computer with a keyboard, many include suggestions for use with smartphones or through distance learning.

The lessons vary in length and detail. One can sense that the lessons were developed by different people and have not been homogenized, which means that most instructors using the guide should be able to find at least a few lessons that fit their teaching style and routines. The detailed instructions included with the majority of the lessons will support instructors new to this type of content, but also leave room for instructors to take the concepts and make them their own.


In the language learning section, I was particularly impressed to see so many lessons designed for low-level ESL instruction. Examples include “Cooking Up a Recipe with a Word Processor,” “Errands Made Easy with Google Lens,” “Getting to Know You with Digital Maps,” and “Sightseeing with ESL Listening Lab,” all designed for ESL level 1. Lessons for other content areas that stand out include, for example, “Collaborative Problem-Solving with Blogs.” The writing section features broad content possibilities, collaborative processes, and flexible delivery including distance learning. Lessons in the reading section, e.g., “Saving the Tree Octopus and Giant Panda by Comparing Websites,” model useful ways to assess website reliability, and the lesson idea can be transferred to content at different reading levels or with subjects related to other content areas. The “Career Mapping with Traitify” in the college and career section can also be adapted for various levels and includes many basic digital skills like filling

in a form online and finding resources online. This lesson provides an opportunity for learners to think about their own traits and the jobs that fit them. While the Traitify test is a little light and breezy, that can be part of the discussion after learners use it.

Section II contains web resources related to digital literacy instruction. These resources are hyperlinked and provide professional development opportunities for instructors as well as online materials and activities that can be used with learners. Section II is organized around the seven interconnected elements outlined in Maryland’s Digital Literacy Framework. This organizing principle helps make the elements more understandable without having to access the original [Framework](#) document.

When we think about integrating digital literacy skills into content instruction there are two areas that are often not dealt with: assessment and discrete checklists of digital skills. While the guide does not explain how to assess student digital literacy skills and does not include a scope and sequence of digital literacy skills for both instructors and learners, Section II does provide links to Northstar Digital Literacy Assessment and Google Applied Digital Skills, both of which give access to assessments and lists of skills. A few of the other online resources included in this section are International Society for Technology Education Podcasts, MediaSmarts video tutorials and courses from computer basics to online safety, Microsoft Digital Literacy Course, Mozilla resources for Web Literacy, and “A Digital Workbook for Beginning ESOL” from ABE Teaching & Learning Advancement System.

Section III is an appendix with supplemental materials related to the lessons in Section I. These include printable worksheets, readings, graphic



organizers, and images. Section III feels like the least thought-out section as the resources have been shrunk to fit the page layout of the guide and are static when in some cases, they need to be editable for the activity to work. This section

made me want this whole guide to be a website or online resource. But even as a PDF, this guide is a well thought-out and valuable tool for instructors working to integrate digital literacy skills into their instruction.

Mathematical Word Problems in Adult Education: What the Research Says

Lynda Ginsburg, Rutgers University (retired)

Mathematical word problems, sometimes called story problems, are generally defined as “verbal descriptions of problem situations, presented within a scholastic setting, wherein one or more questions are raised the answer to which can be obtained by the application of mathematical operations to numerical data available in the problem statement or on numerical data derived from them” (Verschaffel et al., 2020, para. 1). The problems are positioned as representing how math is applied in real life, although in real life there is usually less clarity about the specific questions that need to be answered as well as the available situational data. Students are urged to limit their focus to the facts or data which is provided within the word problem itself.

Students of all ages encounter mathematical word problems, and they are an ongoing challenge for many students and their teachers. Over the last 50 years, many researchers have looked at a variety of word problems, creating classification schemes based on the linguistic aspects of the problems as well as on their mathematical demands. Further, researchers have analyzed samples of student work and responses to these problems as well as the students’ relevant affective factors as they attempt to solve the problems. This research has primarily been focused on young children and elementary school students younger than 13 or 14 years of age. A summary of some of this literature is available in

review articles (see Daroczy et al., 2015; Verschaffel et al., 2020).

Here, I report on recent research (from 2015 to the present) that focuses on how and when adult learners, including those in adult education settings, community colleges, early college, or late high school, encounter word problems and the strategies they and their instructors might employ to increase success in solving them. This is important because word problems are commonly found in mathematics assessments, particularly for high stakes purposes such as high school equivalency tests (GED, HiSet) or for educational placement purposes. Adult education program funding is often dependent upon evidence of student progress as demonstrated by performance on standardized mathematics tests. Therefore, most published instructional materials provide some word problems. In addition, large-scale, cross-national assessments (i.e., PIAAC) measure numeracy levels by including word problems.

Do Word Problems Represent the Mathematics of Adult Learners’ Real Worlds?

Word problems are often promoted as a means of demonstrating that classroom mathematics is relevant and useful in the outside world and can be applied in a variety of everyday situations.

For adult learners, this rationale is of particular significance because they are likely simultaneously managing their own and family members' everyday lives, holding jobs, managing money, and having responsibility for housing while participating in their own education. Adult learners recognize that they encounter and must use mathematics daily (Ginsburg & Waldron, 2021).

However, some have questioned whether the word problems appearing on assessments and in instructional materials actually do represent the lived experiences of most adult learners. Bright (2017) asked 58 graduate students to examine word problems in curricular materials and they found that many problems represented middle-class ideals and experiences. For example, problems focused on calculating area and/or perimeter by describing redecorating projects that would be most likely undertaken by home owners with disposable income rather than renters with more limited funds available. Bright notes that some might argue that middle-class contexts can be seen not as problematic for learners but rather as "aspirational," that is, included to provide less-privileged students with suggestions for things or goals they may aspire towards (p. 18).

Indeed, whether these real world examples are unfamiliar or aspirational, they do not provide meaningful contexts that represent the lived experiences of most economically struggling adult learners. Thus, the learners are unlikely to be able to draw upon their own experiences to find meaning in the stories or to be able to employ their own informal mathematical strategies to help solve the problems.

While Bright (2017) discusses issues of privilege and inequity, it might also be argued that the issue of the contexts of word problems differs somewhat for immigrants who are learning about

the culture of a new country so as to be able to function well within it. Maphosa and Oughton (2021) interviewed adult learners in England who had immigrated from Zimbabwe and found they struggled with and became anxious about problems with "real-life contexts" because the contexts were unfamiliar to them. For example, some learners were unfamiliar with cooking turkey for Christmas holiday so problems about time measurements for cooking turkeys of different weights were meaningless to them. One of their instructors explained that while she could and does use example recipes from other cultures during instruction, such examples will not show up on the assessments because the assessments are culturally British based.

Yet, using word problems that represent aspects of the real-world contexts of the adult learners helps them see the relevance of their math study, going from the classroom to their real-world lives. In addition, since the learners are adults and really do currently manage their activities in the real-world (managing money, shopping, working, participating in social groups, etc.), they likely have developed (independently or through informal means) strategies that are useful and meaningful to them. These personal strategies can be shared, examined, and considered for accuracy, usefulness, and transferability to other contexts, thus going from real-world lives to the classroom.

What Are the Steps to Solving a Word Problem?

Another aspect of word problems that often challenges learners is how to actually solve them. When word problems are presented, students are expected to go through a sequence of steps to complete the problem. These steps are:

1. read/decipher the problem;

2. create a mathematical model of the situation (often called mathematizing);
3. solve the problem using mathematics; and,
4. reflect on the solution for its reasonableness.

The first two steps are discussed here.

Reading the Problem

Reading word problems effectively is a meaning making process that involves decoding and comprehension about the situation presented. (See Walkington et al., 2018, for a discussion of readability factors such as problem length, word difficulty and pronouns.) For adult learners, including English language learners, however, understanding what the words actually mean may be an issue. For example, a problem might include polysemous words, meaning words with a specific mathematical meaning that are commonly used in daily life with other meaning(s). Examples include yard, table, base, similar, mean, odd, even, face, proper and product. Further, researchers refer to the challenge of the mathematics register, meaning the styles of communication used by the mathematics disciplinary community (Herbel-Eisenmann et al., 2015). Word problems are often presented using elements of the mathematics register with which learners may not be familiar and thus have difficulty understanding the implied meaning of the problem.

In addition, Orrantia et al. (2015) found that low-skilled adults' performance in correctly solving word problems was impacted by the format in which numbers were presented. When numbers were presented as Arabic digits rather than as the number words (i.e., 70 vs. seventy), problem solving speed and accuracy improved, particularly when larger numbers were involved. Therefore, the authors suggest that "the format in which numbers are present affects the calculation mechanisms and

not just the encoding processes." (p. 277).

Creating a Mathematical Model of the Situation Described in the Word Problem

A mathematical model is created during the problem-solving process when the solver transfers the information provided in the problem to a symbolic mathematical format through visualizing the problem situation, identifying relevant mathematical concepts, discarding irrelevant information, and making sense of the relationships described. (Jupri & Drijvers (2016). Unfortunately, as most adult educators would agree, some students do not create mathematical models of word problems, but rather grab all the numbers in the problem and use them in some way, even if the answer makes no sense. Their rationale seems to be that if a number is there, it must need to be used.

However, Di Lonardo Burr et al. (2021) found that *irrelevant* numbers within word problems did not contribute to college students' errors when solving problems. The problems used in their research were provided in two forms, as in the following example (the italics represent the manipulated information):

Amy, a museum tour guide, was busy preparing for the next big tour. *She picked up 15/some maps. She put down 15/some maps* and collected payment from the tour group attendees. She collects \$56 in total. If each person in the group paid \$7, how many people are in her tour group? (p. 263)

The college students were able to ignore the irrelevant numbers; their errors were due to using an incorrect operation (i.e., multiplication instead of division) or arithmetic errors. However, there is no research to indicate whether the results would be the same with adult basic education learners.

In a somewhat related study, Givven et al. (2019) investigated whether changing word problems by removing opportunities to calculate solutions

allowed community college, developmental education students to focus more directly on the relationships in the problem. They operationalized this by providing students with three problems in either “calculable” and “non-calculable” conditions. An example of a “non-calculable” problem is “Andrew was planning a big party for his friends. He found a bakery that had amazing cupcakes and wanted to make sure each person could have seconds. The bakery only sells the cupcakes in boxes of six. How many boxes does he need to buy?” (p. 11). Note that since the number of people attending the party is not included, a simple numerical solution is not possible. Instead, subjects were asked to “write an explanation of each problem that they thought would help another student understand the problem” (p.3). A follow-up study asked that the explanations also include a diagram. All subjects were then asked to solve four transfer test questions, including one far transfer item. The researchers found that across both studies, the number of students from the non-calculable group answering the far transfer items correctly was three times as great as the number from the calculable group, suggesting that the non-calculable students may have become more inclined to apply sense-making strategies than those who jumped to calculate quickly. The study was relatively small in scale, but it does suggest that focusing on the relationships within word problems rather than merely focusing on the procedures needed for a solution can be beneficial.

Instructional Strategies that Support Word Problem Solving

Adult educators want to help their students be successful in solving mathematics word problems and want to provide them with a simple strategy with which to attack problems. Frequently, they encourage students to read the problem and then

underline or otherwise note the “key words” that may denote mathematical procedures. Then, it is suggested that the students use those words to guide the process of solving the problems. However, researchers have found this strategy to be ineffective and not used by successful word problem solvers. Verschaffel, et al (2020) states:

Indeed, roaming around the research field of word problem solving, one encounters numerous examples of well-documented persistent errors due to learners’ failure to inhibit superficial erroneous response tendencies. This is, for instance, the case for learners’ failure to inhibit the strong association between the keyword “more” and the operation “add” in problems such as “Pete has 8 apples. He has 5 more apples than Ann. How many apples does Ann have?” leading to the erroneous response 13 (instead of 3) (p. 9)

Such superficial problem-solving strategies might be fostered by the relative positioning of word problems during instruction. Indeed, many commonly used instructional materials provide extensive practice with procedures, and then include a few word problems at the bottom of the page. Often, learners do not even have to read or understand the word problem – if the mathematical procedure being practiced on the page was “adding fractions,” they can pretty confidently assume that the same procedure will need to be used with the numbers in the word problem.

The research summarized in this section suggests that developing learners’ word problem solving skills requires a change in typical instructional practices: word problems must be an important focus of mathematics instruction and should forefront instruction, not just be an add-on at the bottom of the page. Two instructional strategies are suggested.

Create Word Problems Representing the Students’ Real Worlds

As noted above, word problems that are promoted as reflecting real-world applications may not actually reflect the real worlds of adult learners.

Word problems situated in meaningful contexts help learners see when, where, and how mathematics is, or can be, used in their lives as well as provide them with opportunities to reflect on and examine their own mathematical practices. Jorgensen (2015) provides a framework and suggestions for helping instructors design more authentic word problems for their classroom instruction and a rubric for gauging the extent to which word problems simulate real-world mathematical situations.

Encourage and Value Student-to-Student Conversations When Solving Problems

An important step in solving word problems is to create mathematical models of the problems. This involves reasoning about the problem situation to see how the story can be re-envisioned as a mathematical situation. Since this is not a straightforward translation task, but rather a reasoning and envisioning process that must be developed, sharing one's thinking and ideas can be useful in this process. Givvin et al (2019) cited research showing that the process of explaining problems to oneself or to another person leads to enhanced learning and effective problem solving, when "explaining" does not simply mean listing a series of computation steps.

Since all adult learners come with their own earlier learning trajectories, real-world experiences, and ways of managing everyday situations, they may have also developed their own personal problem-solving strategies and both formal and informal mathematical reasoning. Through the task of explaining their own thinking and hearing the explanations of others, they enhance their ability to reason about mathematical situations depicted in word problems (National Council of Teachers of Mathematics, 2013).

A variety of problem types can be used to trigger discussions, including meaningful problems that have multiple answers and problems that can be solved with multiple strategies. For numberless problems, students can be directed to answer questions such as "What do you know about the answer?," "Can there be more than one answer?," "How do you know?"

Finally, Stacey (2016) reports on an additional benefit of encouraging such discussions in an adult mathematics class. In a small study, she found that English language learners in the UK, who were voluntarily taking an ESOL math class in addition to their ESOL class, improved their English language skills more than did non-participating ESOL students, as measured on ESOL exams. This may be because the students worked in pairs on verbal problem solving and observers found that the students interacted in the discussions in English at higher levels than they did in their ESOL classes.

Conclusion

The recent research on mathematical word problems provides guidance on instructional practices that help adult learners become more successful in solving such problems when they are encountered on high stakes assessments, but also empowering them to develop the mathematical reasoning that can be used outside of the classroom as well. As technologies (such as handheld calculators, computers, telephone apps) are more frequently being used for arithmetic computation, and even increasingly allowed on assessments, adults have less need to practice and demonstrate procedural skills. Instead, adults need to be able to find mathematical meaning in situations, decide how to go about solving problems with mathematical components, determine what computational procedures can

be applied, and then evaluate if solutions are sensible and meaningful. To help build such mathematical reasoning skills, word problems should be in the forefront of math instruction rather than as add-ons.

It would be beneficial to the field to have additional research on how adult learners, particularly those at the high school equivalency

level, come to develop the mathematical reasoning skills needed to solve word problems on assessments, in real-life situations and the transfer process between them. In addition, studies of how adult education instructors modify their practices to include more emphasis on word problem solving would inform professional development initiatives.

References

- Bright, A. (2017). Education for whom? Word problems as carriers of cultural values. *Taboo: The Journal of Culture and Education*, 15(1), 6-22. <https://doi.org/10.31390/taboo.15.1.04>
- Daroczy, G., Wolska, M., Meurers, W.D., & Nuerk, H.-C. (2015). Word problems: A review of linguistic and numerical factors contributing to their difficulty. *Frontiers in Psychology*, 6(Article 348). <https://www.frontiersin.org/articles/10.3389/fpsyg.2015.00348/full>
- Di Lonardo Burr, S., Turner, J., Nietmann, J., & LeFevre, J.-A. (2021). When does the story matter? No evidence for the foregrounding hypothesis in math story problems. *Journal of Numerical Cognition*, 7(3), 259-274. <https://jnc.psychopen.eu/index.php/jnc/article/view/6053/6053.pdf>
- Ginsburg, L., & Waldron, S. (2021). *Adult learners' reported use of mathematics in their current and future lives. Report for SABES Mathematics and Adult Numeracy Curriculum & Instruction PD Center at TERC. SABES*. https://www.sabes.org/sites/default/files/resources/Adult_Learners_Reported_Use_of_Math_web_o.pdf
- Givvin, K.B., Moroz, V., Loftus, W., & Stigler, G.W. (2019). Removing opportunities to calculate improves students' performance on subsequent word problems. *Cognitive Research: Principles and Implications*, 4(24). <https://cognitiveresearchjournal.springeropen.com/track/pdf/10.1186/s41235-019-0175-2.pdf>
- Herbel-Eisenmann, B., Johnson, K.R., Otten, S., Cirillo, M., & Steele, M.D. (2015). Mapping talk about the mathematics register in a secondary mathematics teacher study group. *Journal of Mathematical Behavior*, 40(Part A), 29-42. <https://doi.org/10.1016/j.jmathb.2014.09.003>
- Jorgensen, M. (2015). Simulating outside-the-classroom maths with in-class word problems. In A. Hector-Mason, & S. Beeli-Zimmermann (Eds.), *Adult learning mathematics—Inside and outside the classroom*. Proceedings of the 21st International Conference of Adults Learning Mathematics – A Research Forum (ALM), June 29 to July 2, 2014 (pp. 135-140). University of Bern, Switzerland. <https://www.alm-online.net/wp-content/uploads/2014/07/alm2015-proceedings-alm21-complete.pdf>
- Jupri, A., & Drijvers, P. (2016). Student difficulties in mathematizing word problems in algebra. *Eurasia Journal of Mathematics, Science & Technology Education*, 12(9), 2481-2502. <https://doi.org/10.12973/eurasia.2016.1299a>
- Maphosa, N., & Oughton, H. (2021). “What am I doing here?” Perspectives of Zimbabwean adult learners on the relevance of adult numeracy to their needs and aspirations. *Adults Learning Mathematics: An International Journal*, 15(1), 19-44. <https://alm-online.net/wp-content/uploads/2021/11/almij151.pdf>
- National Council of Teachers of Mathematics. (2013). *What does research say the benefits of discussion in mathematics class are?* <https://www.nctm.org/Research-and-Advocacy/Research-Brief-and-Clips/Benefits-of-Discussion/>
- Orrantia, J., Múñez, D., San Romualdo, S., & Verschaffel, L. (2015). Effects of numerical surface form in arithmetic word problems. *Psicologica*, 36, 265-281. <https://www.uv.es/psicologica/articulos2.15/4ORRANTIA.pdf>
- Stacey, J. (2016). Does adding mathematics to English language learners' timetables improve their acquisition of English? *Adults Learning Mathematics: An International Journal*, 11(2), 52-57. https://www.alm-online.net/wp-content/uploads/2016/12/almij_full_issue_vlast+1.pdf
- Verschaffel, L., Schukajlow, S., Star, J., & Van Dooren, W. (2020). Word problems in mathematics education: A survey. *ZDM-Mathematics Education*, 52(1), 1-16. <https://doi.org/10.1007/s11858-020-01130-4>
- Walkington, C., Clinton, V., & Shivraj, P. (2018). How readability factors are differentially associated with performance for students of different backgrounds when solving mathematics word problems. *American Educational Research Journal*, 55(2), 362-414. <https://doi.org/10.3102/0002831217737028>



JOIN THE ALLIANCE

that is creating a more literate world.

ProLiteracy members are adult literacy and basic education programs, professionals, and advocates changing lives across the globe through the power of literacy.

- **Instructional Tools**
- **Advocacy**
- **Professional Development**
- **Administrative Resources**
- **Discounts**

Join ProLiteracy!

Learn more or join online at
[ProLiteracy.org/Membership](https://www.proliteracy.org/membership)



VISIT THE Education Network



A comprehensive collection of online courses and resources for adult literacy and ESL instructors, program staff, trainers and adult learners.

Any time and *any place* that fits your schedule.

Education Network is a website created by ProLiteracy, the largest membership organization dedicated to advancing adult literacy and basic education in the United States.



Self-paced courses

that help you learn about teaching, citizenship, reading, writing, and much more



A video library

that allows you to watch demonstrations of effective teaching strategies



Downloadable, printable resources

such as lesson plans, classroom exercises, and tip sheets



Online activities

you can use with students



Online forums

where you can network with others, ask questions, and share resources about specific topics

ProLiteracyEdNet.org

Also the home of **Member Central** a repository of information and resources exclusively for ProLiteracy members.

