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Using LESLLA Readers' Miscues to Inform Pedagogical Practice

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Abstract

LESLLA practitioners worldwide assist with emergent print literacy development of the L2 adults in their classrooms, yet research on adult emergent literacy, including the stages of emergent reading development in the adult L2 context, is still relatively unexplored. This 12-month study tracked two female LESLLA learners who had advanced to a Beginning High English as a Second Language class at their school. During weekly literacy intervention sessions, the participants read-aloud level-appropriate text without any prior instructional scaffolding, to showcase how they decoded text independently. Leveraging miscue analysis, audio recordings were transcribed, with miscues further transcribed phonetically (using IPA). Preliminary results showcase nearly a dozen types of miscues, including eliminating/inserting/ transposing phonemes, articulating semantically-similar or visually-similar words, articulating an incorrect sound, only intelligibly articulating the first few phonemes, or making no attempt. The two demonstrated differences in decoding strategies used and reading development. Implications discuss suggestions for classroom instruction for higher-level LESLLA learners.

Keywords: decoding skills, emergent readers, adult literacy, miscue analysis, action research

California adult schools are major providers of English as Second Language (ESL) classes to adult LESLLA learners. Typically, 6 levels of ESL are offered, ranging from ESL Beginning Literacy (Level 1) through ESL Advanced (Level 6). LESLLA learners usually begin at Level 1, and through a combination of targeted instruction and student persistence can advance levels. As second/additional language instructors we know different pedagogical approaches are appropriate for different levels, as learners at each level have differentiated strengths and challenges.

A few years back I was working with LESLLA learners who had now advanced a few levels but were still struggling in their classes. While they had acquired a wealth of vocabulary and had made headway in their literacy skills, they often struggled to decode print words they were regularly exposed to in class; additionally, they sometimes lacked strategies to decode novel words. I found myself needing more insight into how LESLLA learners transition from lower to higher levels of ESL in terms of reading skills, especially as LESLLA students are more exposed to commercial texts; I was also eager to understand how higher level LESLLA students were approaching text, and what strategies they were using to decode (as well as what difficulties they were facing). While LESLLA's repository of research contains a wealth of resources on how to teach emergent print literacy, there exists a lack of longitudinal resources on how to support LESLLA learners as they move along the language (and literacy) learning continuum. While language learning does not entail clean, transparent transitions, I still wished for more guidance to inform my instructional approach.

I will begin this paper by outlining relevant scholarship on emergent reading, first presenting a bit of research from the area of children's reading development which has been relevant in a LESLLA context, as well as highlight a few studies which have outlined the reading trajectory for LESLLA learners.

Literature Review

Reading in alphabetic languages is a synchronous understanding of orthographic, phonological, and morphological forms combined with lexical and semantic meanings (Kendeou et al., 2014; Perfetti, 2007; Rayner & Reichle, 2010). This implies that in order to read L2 text, L2 learners must also acquire an entire lexicon of new words (and their semantic meanings), develop a new syntactic system, and apply this knowledge to new orthographic and phonetic systems. For LESLLA learners, the vast number of details one must attend to (such as orthography, vocabulary, phonology, morphology, and semantics) can quickly overload one's attention (Bourke & Adams, 2010) as these elements may be novel *and* must also be simultaneously acquired. As LESLLA practitioners it is critical to understand how our students are approaching text, and acknowledge that the simplest of tasks may actually be extremely complex for our learners.

L1 Children and Reading

A wealth of varying models outlining the progressive stages of children's reading development have been put forth over the last few decades. One prominent model was designed by Frith (1986), who outlined a three-phase reading developmental model. Frith labeled the first phase as the *logographic* phase, where children visually recognize words based on graphically-distinguishing features. This includes recognizing patterns of letters, the length of words in combination with the presence of certain letters, and/or the noticing of specific key letters and

mapping them to a remembered word. This stage explains why a child can sometimes read certain words (especially words they have frequently been exposed to) prior to their ability to phonologically decode or productively spell. Frith's second stage of reading was the *alphabetic* phase, where a student engages in letter-by-letter decoding using phonetic strategies. Her third stage was the *orthographic* phase, where a student advances to morphemic/whole word recognition (after much interaction with the print word), and can read the word with (near) automaticity. Other researchers have referred to this orthographic learning as the child's ability to form orthographic representations which can then be retrieved when prompted (Masterson & Apel, 2010; Stanovich & West, 1989), and displays the child's transition from step-by-step decoding to fluently recognizing words (Nation & Castles, 2017).

Other researchers have veered away from a sequential stage model and have focused more on the neural processes involved in reading strategies. For example, connectionist models of reading purport that readers leverage a wealth of unique, acquired skills when engaging with written text (Harm & Seidenberg, 2004; Seidenberg, 2007; Seidenberg & McClelland, 1989). As not all languages are phonetic and/or do not have a transparent grapheme-phoneme relationships (such as English), connectionist models claim there are other cues (such as visual, morphological, syntactical, and lexical) readers attune to when decoding text. Then, as one gains more exposure to orthographic strings, they build neural connections between such forms and associated patterns, meaning, pronunciation, and other linguistic information (Brown & Chater, 2004; Harm & Seidenberg, 2004; Seidenberg & McClelland, 1989).

Miscue Analysis to Inform Reading Development

Miscue analysis is a term coined by Ken Goodman (1969) to denote the analysis of mismatches between a reader's oral utterance and the target (print) word. The term 'miscue' is preferred to the word 'error' as the latter has a negative connotation and can negate any element of successful decoding and/or attunement to linguistic cues. Goodman claimed when a word is misread it is often not wholly incorrect but instead can positively portray elements of progression. For example, if a child utters "hoping" for *hopping*, we see the child *was* indeed able to decode the majority of phonemes present and identify morphological markers (here, *-ing*); this miscue also indicates the area(s) in which the child needs support (here, the pronunciation of either a short or long vowel sound as it correlates with spelling rules¹). Thus, miscue analysis allows teachers to describe what readers do when they read to then inform pedagogical instruction (Fahrenbruck & Liwanang, 2021). Types of miscues vary and include: phoneme omissions (stating "red" for *bread*); phoneme insertions (stating "grate" for *gate*); phoneme substitutions ("fine" for *line*); phoneme transposing ("bran" for *barn*), and partial attempts ("all" for *although*). The miscues highlight the proximity of the uttered word to the target word, thereby reinforcing that the utterance is not always 100% incorrect, but instead is often partially or nearly there.

Miscue Analysis and LESLLA Emergent Readers

Miscue analysis has been used in LESLLA contexts as well. Kurvers (2007) conducted a detailed study on two groups of Dutch LESLLA learners, analyzing their word recognition

¹ For example, in English the doubling of the final consonant signals that the root word ends in consonant+vowel+consonant. Thus, the root of *hopping* would be *hop* as opposed to *hope*, the latter which ends in vowel+consonant +*e* – the final *e* making the *o* 'long'.

strategies via the types of miscues performed. For example, she coded the students as using a visual word recognition strategy when a student orally stated a visually-similar but incorrect target word. She determined LESLLA students progressed through a series of reading stages similar to those put forth by Frith (and others), first by using visual strategies to decode words, followed by a phonetic strategy, and finally demonstrating more automaticity. Boon and Kurvers (2008) conducted a similar study in East Timor, also engaging in miscue analysis of two groups of learners. This study also found evidence confirming LESLLA learners progress through a series of reading stages similar to children.

Other LESLLA practitioners have utilized miscue analysis to inform pedagogical practice. Wallace (2008) analyzed transcripts of reading sessions with LESLLA students, stating miscue analysis, “acknowledges that errors can represent a development in the meaning making process” (p. 97) and as such can be used as a learner documentation tool. Ghanem (2021) used miscue analysis to inform her work with an adult Somali L2 student, analyzing the varying types of miscues produced to then create an individualized program plan.

It is important to note that, in the literature, the term *reading* is sometimes used to describe the stages of decoding (such as with Frith’s model of reading development); however, *reading* is also commonly used to denote *decoding* plus *comprehension*. As much vocabulary may still be novel and/or unfamiliar to L2 learners, it is important for us to clearly distinguish the act of *decoding* words versus *reading* words (which again, generally entails comprehension). Given that I was working with beginning ESL learners who still had a wealth of vocabulary to acquire, I was specifically interested in their ability to *decode* (and orally produce) words, as decoding is a critical element in the larger process of reading development. Thus, inspired by the rich information miscue analysis can afford given its emphasis on the particulars of decoding, I leveraged this methodological approach to answer the following two questions:

1. What kind of miscues are English-learning beginning-high level LESLLA learners making when decoding level-appropriate text?
2. How can these miscues inform our instructional approach for higher level learners in a LESLLA context?

Methodology

Setting and Participants

This study took place in a mid-sized adult school in Northern California. The school offered six levels of integrated-skills ESL courses ranging from Beginning Literacy to Advanced. The researcher, serving as a literacy tutor, conducted pull-outs of adult ESL learners with emergent literacy who needed extra literacy support, meeting with each group for 75-90 minutes once per week. This study focuses on one of those groups, which consisted of two female students from the morning Beginning High ESL class. The participants, Wazira and Alonda, were in their 30’s and were from Yemen and Mexico, respectively. While Wazira had immigrated to the U.S. as an adult, Alonda immigrated to the U.S. at the age of 8. She attended school through 6th grade, though her schooling (in the U.S.) was heavily conducted in Spanish. The profiles of the woman are indicated in Table 1.

Table 1. Descriptive Summary of the Study Participants

Name, Age ²	Country	Years of L1 school during childhood	Length of time at Adult School	Emergent Literacy profile (in English)
Alonda, 35	Mexico	4 years in Mexico; 3-4 years in U.S.	3 years (started at Level 2)	Struggled with spoken English; struggled to decode novel words
Wazira, 33	Yemen	“a few years”	6 years off and on (started at Level 1)	Struggled to decode novel words; could write familiar words from memory

Methodological Approach

This study utilized an Action Research approach, namely a form of investigation designed for use by teachers to attempt to solve problems and improve practices in the classrooms. Action research involves systematic observations and data collection which are then used in reflection, decision-making, and the development of more effective classroom strategies (Parsons & Brown, 2002). I had been working with these students for a few years, and in our lessons I would typically start with pre-reading activities (e.g., pre-teaching vocabulary, reviewing prominent phonemes/blends/word patterns in the text) to prepare them for success during our lesson. However, I wanted to know more about what the students could (and could not) do independently – without my pre-reading activities – in order to inform my small group instruction. Therefore, after choosing a story for the day, I began a new approach – without engaging in pre-reading activities, I would instead present each story and ask each student to independently read one sentence each, toggling between the students until we had completed the story. I intervened only if/when the student a) uttered an incorrect word, b) skipped a word, or c) was struggling to decode the word.³

Data Collection

Data was collected from February 2018 to January 2019, comprising 14 sessions. During weekly sessions, participants were asked to orally read-aloud level-appropriate text⁴ without any prior scaffolding. Here, I use the term *read-aloud* to denote a vocalization of one’s decoding attempt, regardless of comprehension. The focus of this approach was to witness students’ ability to decode and intelligibly state words (as I used intelligibility as a threshold for correctness) as well as to document their miscues (the focus was *not* on speed nor comprehension). Throughout this paper, I also refer to the students’ process of decoding and orally stating such attempts with verbs such as *articulate*, *verbalize*, *produce*, and *utter*.

The two texts used were *City Dreams* (Gianola, 2009) and *Wow! Stories from Real Life* (Hess & Pollard, 2018). These texts were used to see how the students engaged with unfamiliar

² All names are pseudonyms, each chosen by the individual learner for herself.

³ These interventions consisted of either a) indicating to the student that their utterance was incorrect and prompting them to try again; b) pointing out letters/morphemes to direct the student in their decoding, or c) providing the correct word.

⁴ The readers were stated to be appropriate for High Beginning (*Wow! Stories from Real Life*) and Introductory (*City Dreams*) English Language learners; however, the better indicator of level-appropriateness were indicated by findings (as explained in the first paragraph under ‘Data & Results’).

but level-appropriate content, and to observe what decoding strategies these emergent readers were (and were not) leveraging with this type of reading material. Each tutoring session was audio recorded to track learners' development in decoding. Later, select portions were then transcribed; miscues were further transcribed phonetically using the International Phonetic Alphabet. Only the students' initial attempts at decoding were included.⁵

Using miscue analysis (Goodman, 1969) as a methodological approach, data was analyzed on a spreadsheet indicating (degree of) correctness (measured by intelligibility), syllable length, and type of miscue. Miscues discarded from the data set included: a) failure to pronounce morphemic final *-s*⁶; b) articulating an extra *-s* at the end of a word; c) L1 pronunciation interference (e.g., a Spanish speaker pronouncing *school* as “[əskul]”); d) all proper names; and e) numerical digits (e.g., *seven* was included but *8:00* wasn't).

Data & Results

Throughout the 14 sessions, Wazira was asked to decode and articulate 676 total words and Alonda was asked to decode and articulate 675 total words. Of those, Wazira intelligibly articulated 74% (or 498) of those words; Alonda intelligibly articulated 62% (or 419) of her given words. For this reason, it was determined that the chosen texts were at-level, as the two students were indeed capable of decoding the majority of words without any scaffolding. Notably, these calculations reflect each individual word rather than unique words, as in some instances the same word was produced both intelligibly (or ‘correctly’) and incorrectly on different occasions by the same student.

The data indicated 11 types of oral miscues produced by the students while decoding. The miscue types were as follows:

1. Articulating incorrect sound(s) (including incorrect vowel or consonants sound(s), and swapping a voiced sound for a voiceless sound and vice versa)
2. Only attempting the first few letters/phonemes of the word (e.g., uttering “[di]” for *development*)
3. No attempt at decoding
4. Transposing phonemes (e.g., uttering “bran” for *barn*)
5. Adding extra phoneme(s) to the word
6. Pronouncing contractions as separate words (e.g., uttering “is not” for *isn't*)
7. Producing a wrong but visually-similar word (e.g., uttering “take” for *talk*)
8. Eliminating phonemes in the word (showing difficulty with consonant blends, articulating a partial word, or otherwise having one or more sound missing)
9. Producing the wrong phoneme or word form (e.g., uttering “lived” for *lives* or “said” for *says*)
10. Demonstrating a semantic mix-up (e.g., uttering “green” for *red*, or “job” for *work*)
11. Producing a word completely different than target word, including non-words and words that bear no orthographical resemblance (e.g., uttering “have” for *asks*)

In many cases, a single miscue fell into multiple categories.

⁵ Only initial attempts were included as my interruptions undoubtedly influenced their subsequent attempts.

⁶ Third person singular *-s* was eliminated as it has been shown to be continually problematic for ESL learners

By far, the most common type of miscue produced was uttering an incorrect sound, accounting for 78% of Wazira’s miscues and 75% of Alonda’s miscues. Thereafter, the next-most-frequent miscue varied by participant. For example, Alonda’s next-most-frequent miscues were: producing an incorrect but visually-similar word (45% of miscues); eliminating phonemes in the word (42% of miscues); and only attempting the first few letters of the word (20% of miscues). Wazira’s next-most-frequent miscues were: eliminating phonemes in the word (38% of miscues); producing an incorrect but visually-similar word (28% of miscues), and only attempting the first few letters (26% of miscues). Despite some difference in their percentages, the numbers are generally similar despite the students’ having different first languages and educational backgrounds. Table 2 shows the breakdown of their individual miscue types produced.

Table 2. Breakdown of Miscue Types Performed

Type of Miscue	Wazira	Alonda
Incorrect phoneme(s) articulated	78%	75%
Eliminating phoneme(s)	38%	42%
Producing incorrect but visually-similar word	28%	45%
Only attempting first few letters/phonemes	26%	20%
Uttering a completely different word	12%	14%
Adding extra phoneme(s)	7%	4%
Transposing sounds	3%	4%
Demonstrating semantic mix-up	3%	3%
Making no attempt	2%	2%
Producing an incorrect word form/morpheme	1%	3%
Separating contractions	0%	.01%

The words in the data set were then separated by syllable length, to determine whether syllable length had any correlation to the students’ ability to orally produce the word intelligibly. In the data set the majority of the words were one-syllable words, and the students produced the vast majority of these one-syllable words intelligibly (Wazira articulating 83% and Alonda 67% intelligibly). When attempting to decode two-syllable words, Wazira and Alonda intelligibly articulated 49% and 46% respectively – a success rate substantially lower than their ability to independently decode and articulate one-syllable words. While Wazira intelligibly articulated 41% of three-syllable words presented, Alonda intelligibly articulated 56%. Here, Alonda’s higher number could possibly be explained by the high number of Spanish-English cognates in the data set (including *comfortable*, *department*, *family*, *hospital*, *library*, *manager*, and *telephone*). The students were not able to correctly decode any word with 4 (or more) syllables. See Table 3 for more detail.

Table 3. Intelligibly Verbalized Words vs. Miscues by Syllable Length

# of syllables	Wazira		Alonda	
	Intelligibly stated words	Miscues	Intelligibly stated words	Miscues
1 syllable	422	88	351	175
2 syllables	64	66	53	63
3 syllables	12	17	15	12
4+ syllables	0	7	0	6
Total	498	178	419	256

As the students had an easier time articulating one-syllable words versus longer-syllable words, the data was then analyzed to see if the most prevalent type of miscue changed depending on the number of syllables in the word. For both Wazira and Alonda, articulating the incorrect sound was the most prevalent miscue across all syllable lengths. Producing a visually-similar but incorrect word was the second most prevalent type of miscue for one-syllable words; for two- and three-syllable words, articulating an incorrect sound was the second most prevalent miscue.

As articulating incorrect phonemes was the most common miscue, these instances were then analyzed more closely for each student. To begin, Wazira had 139 instances of articulating incorrect phonemes. Of these, in 63 instances only the initial phoneme was uttered intelligibly (e.g., for *restaurant* she articulated “[r] [rɪtʃəɪ rɪtʃ]”; for *few* she articulated “[fɪ][flo]”), and in 12 of these instances she articulated the first three phonemes intelligibly (e.g., for *explains* she articulated “[ɛks] [ɛksp] [ɛkspands]”). In only nine cases was the only error an incorrect vowel sound (e.g., for *talk* she articulated “take” and for *says* she articulated “sees”), indicating that vowel sounds were not the primary source of her errors. Remembering that the miscue types overlapped, in 47 of these instances she produced a visually-similar but incorrect word (e.g., for *hours* she articulated “hears”), and in 13 instances she produced an incorrect word that was *not* visually-similar (e.g., for *again* she articulated “is” and for *answers* she articulated “wants”). In only 34 (out of the 139) instances she produced a pseudoword (e.g., for *wet* she produced “[wɪntɪn]” and for *pillow* she produced “[pɪ-] [pɪɑu]”). Table 4 shows a sampling of Wazira’s miscues demonstrating her articulation of an incorrect sound.

Table 4. A Sampling of Wazira's Miscues: Articulating Incorrect Sound

Target word	Utterance	Target word	Utterance
answers	[wi-]	neighborhood	ɪnd ɪndʒʌ ɪndʒʌn
back	[bɛ] [beɪ]	great	[dʒɪ] (dʒɪaɪnz]
blocks	[bl-] [blads]	hands	[hɪpt]
brother	[p] [bou] [pout]	interview	[ɪnt] [ɪntɪf]
coworkers	[kæ]	know	[k-] [kʌ] [kʌ]
cuts	[ju juts]	laundromat	[nʌ] [nʌ]
dusty	[dɪ-] [dɪ-] [dɪʌnt] [dɪʌnts]	pretty	[opəɪt] [ʌnpəɪt]

These instances of articulating an incorrect sound were then analyzed for any consistent patterns. Examples of a consistent pattern would be repeatedly replacing one particular phoneme for another, or repeatedly omitting a specific phoneme. However, no evident patterns emerged for Wazira; instead, a few (one to three) instances of varying errors were seen throughout the data.

We now turn to Alonda, who had 191 instances of articulating incorrect phonemes. Of these, in 75 instances she only uttered the initial phoneme intelligibly (e.g., for *alone* she articulated “[αβo] [αβou]”; for *questions* she articulated “can”), and in 15 of these instances she articulated the first three phonemes intelligibly (e.g., for *dirty* she articulated “[dɪ] [dɪli]”). In three cases the only error was an incorrect vowel sound, indicating (as with Wazira) that vowel sounds were not the primary source of her errors. In 100 instances she orally produced a visually-similar but incorrect word (e.g., for *it* she articulated “in”; for *live* she articulated “like”), and in 13 instances she orally produced an incorrect word that was not visually-similar (e.g., for *meet* she articulated “be”; for *need* she articulated “they”). In 30 (out of the 191) instances she produced a pseudoword (e.g., for *pocket* she articulated “[porsen], [porfɛ]”; for *dress* she articulated “[migi]”). Yet, Alonda more commonly produced an incorrect word (whether visually-similar or not) than a pseudoword. Table 5 shows a sampling of Alonda’s miscues demonstrating her articulation of an incorrect sound.

Table 5. A Sampling of Alonda's Miscues: Articulating Incorrect Sound

Target word	Utterance	Target word	Utterance
khaki	[ʃ- əh]	smiles	[min]
sharp	[tʃ-] [tʃɛ]	benefits	[bɛɪ] [bɛɛ]
skirt	[ʃ-][ʃal]	finds	[foli] [fli]
really	[ɪ] [ɪɛɪn]	questions	[kæntɪn]
floor	[frʌm]	invites	[i] [in] [inbɛn]
empty	[ɛw ɛw]	employees	[ɛsp]
introduces	[intoruseɪ]	store	[sɔm] [so]

These same miscues were then analyzed for any consistent patterns. Unlike Wazira, Alonda demonstrated a recurring pattern: in 66 instances, she orally replaced a final consonant with other phonemes. However, numerous combinations of final phonemes were seen. For example, in 15 instances she replaced a final /s/ with another consonant, including /d/, /n/, /t/, and /v/. In 13 instances she replaced a final /t/ with other phonemes, including /ai/, /n/, /nd/ and /s/. In 6 instances she replaced the final /r/ with either /m/, /nd/, or /s/. She also had 18 cases of replacing a medial consonant with another consonant, and eight instances of replacing an initial consonant blend with another consonant blend; however, within these occurrences, there was not a more defining pattern.

A final area of analysis was determining the students’ predominant decoding strategy. Four decoding strategies emerged from the data, some clear and some presumed (as will be explained). The first was decoding and articulating words with automaticity, whereby the student intelligibly recalled and orally produced the word intelligibly without sounding it out. The

second strategy was presumed instances of phonetic decoding/processing. This was demonstrated by the students' sounding out letters of a word (but resulting in a miscue), only sounding out the first few letters (and then stopping), or sounding out the first few letters before fully articulating the word intelligibly. The third strategy was presumed instances of visual processing, demonstrated by the students' articulating a visually-similar but incorrect word without any attempts to sound out the letters. The fourth category was simply labeled as an unknown strategy, in which the students' utterance was completely different than the target word. These included articulating a not-visually-similar word as well as pseudowords whose phonemes were not in alignment with the target word.

As seen in the beginning of this section, the students decoded and subsequently articulated the majority of words intelligibly. Of the 498 words Wazira articulated intelligibly, she articulated 95% with automaticity, and 5% using a presumed phonetic strategy. As for Alonda, of the 419 words she articulated intelligibly, 97% were stated with automaticity and 3% using a presumed phonetic strategy. As for miscues, the majority of Wazira's were made using a presumed phonetic strategy, whereas the majority of Alonda's miscues were made using a presumed visual strategy (as seen earlier, she had quite a few instances of articulating a visually-similar but incorrect word). Table 6 shows each student's decoding strategies per number of tokens.

Table 6. Decoding Strategies Used by Students

Words Decoded & Decoding Strategies	Wazira	Alonda
Total words	676	675
Words uttered intelligibly	498	419
Word uttered intelligibly without using initial phonetic strategy (automatic)	473	405
Words decoded using a presumed phonetic strategy	106 ⁷	87 ⁸
Words decoded using a presumed visual strategy (miscues)	49	117
Words decoding using an unknown strategy	42	56

An additional analysis was conducted to see whether a shift in the decoding strategies used by each student occurred over the course of the 14 sessions. Data was compared between the first four sessions and the last four sessions. Wazira demonstrated an increase in the total number of words articulated intelligibly (from 72% in the first 4 sessions, to 79% in the last four sessions). Her ability to decode words with automaticity also increased (from 70% to 76%); correspondingly, she demonstrated a subsequent reduction in her use of a presumed phonetic strategy (from 16% to 10%) as well as a reduction in her use of a presumed visual strategy (from 9% to 5%). For Alonda, the results were quite different. The number of words she articulated intelligibly decreased between the first four sessions and the last four sessions (from 67% to 59%). Her ability to decode words aloud with automaticity also decreased (from 67% to 57%).

⁷ This number consists of 81 miscues and 25 intelligible utterances

⁸ This number consists of 73 miscues and 14 intelligible utterances

Conversely, her presumed use of a phonetic strategy increased (from 7% to 9%) as well as her presumed use of a visual strategy (from 16% to 18%).

These results can be mapped directly onto Frith's stages of reading development (logographic, alphabetic, and orthographic). Table 7 showcases the shift in decoding strategies used by each student between the first four sessions and the last four sessions (including unknown strategies).

Table 7. Decoding Strategies Used by students: First 4 Sessions vs. Last 4 Sessions

Decoding Strategy Used	Wazira		Alonda	
	First 4 sessions	Last 4 sessions	First 4 sessions	Last 4 sessions
Logographic	9%	5%	16%	18%
Alphabetic	16%	10%	7%	9%
Orthographic	70%	76%	67%	57%
Unknown	5%	9%	10%	16%

Classroom Implications

The data presents important implications for the LESLLA classroom. To begin, both Wazira and Alonda articulated most words with automaticity, demonstrating they had already reached some level of decoding fluency with many words (one-syllable words proving to be the least problematic to decode). As language instructors we know that L2 students have a hard time decoding unfamiliar words (Kurvers, 2007; Marrapodi, 2013); thus, it is critical to continually increase students' L2 vocabulary/oral language, to prepare them to decode words they might encounter.

Additionally, the data indicates that the students focused on a variety of linguistic cues. For example, cases in which they articulated a visually-similar but incorrect word indicate their attention to visual cues; cases in which they stated the wrong word form indicate they were at least attuned to word roots; cases in which they only (but intelligibly) articulated the first few letters/phonemes of the word indicate a focus on grapheme-phoneme relationships; cases in which they stated a semantically similar word highlight their ability to make semantic correspondences with orthographic forms. As these learners were still developing basic knowledge about language and word structure, their miscues are not surprising; moreover, the data suggests they were leveraging a variety of cues as they approached text. What is not clear is what cues they were attuned to in cases where their utterance mismatched the target word.

Of the 11 types of miscues present, the most common miscue for both students was, by far, the articulation of incorrect sounds (which overlapped with other categories, such as articulating a visually-similar but incorrect word—e.g., stating “live” for *like*). Indeed, even at ESL Level 3 (Beginning High) a continued focus on phonics is in order. This can include a specific emphasis on the varying letters in English consonants and vowels—including blends and diphthongs—and their correlating phonetic sound(s). With this, focusing on spelling patterns related to pronunciation (for example, pronouncing the written letter *c* as a /k/ or an /s/ depending on the following phoneme, or spelling patterns related to short and long vowel sounds) could prove beneficial. As the students (especially Alonda) often stated a visually-

similar but incorrect word, using instructional strategies to help students increase attunement to minor differences between words may be beneficial. Examples include creating activities using level-appropriate minimal pairs, and presenting pairs which showcase differences in initial (e.g., *might* vs *night*), medial (e.g., *loner* vs *lower*) as well as final phonemes (e.g., *like* vs. *line*). The leslla.org website contains a wealth of resources on this type of reading instruction, including whole-part-whole strategies as well as targeted phonics instruction.

Regarding decoding strategies, the students demonstrated a mix of processing approaches as per Frith's model of reading development—orthographic (automatic), alphabetic (phonetic decoding), and logographic (using visual strategies)—as well as unknown approaches (in cases where their utterance greatly mismatched the target word). While Wazira increased her automaticity during the course of the study, Alonda declined over time, increasing her use of both logographic and phonetic strategies. Additionally, Wazira had far fewer visual miscues than Alonda, yet nearly half of all Alonda's miscues were the articulation of a visually-similar but incorrect word.

While Frith's model alluded to students slowly advancing (with overlap) from one stage of reading development to the next, this was not directly seen with Alonda, who seemed to be backtracking a bit in this progression. Undoubtedly, reading development for these two LESLLA adults was not a linear, step-by-step trajectory, as clear instances of overlap occurred among the stages. Specifically, the students encountered words with which they had gained automaticity in decoding (highlighting the orthographic stage), and words that were still novel—to which they applied either a logographic or alphabetic approach (or an unknown approach). Thus, at least in some cases, the strategies used seemingly depended upon the familiarity with the written words they encountered.

Given that Alonda demonstrated many instances of articulating a visually-similar but incorrect word, increasing her visual attunement to orthographic features would be recommended. To this end, instruction using minimal pairs (as mentioned above) should prove useful to help students notice phonemic differences in words. Additionally, using minimal pairs with morphemic similarity may also prove useful to help their attunement to different roots. For example, presenting students pairs such as *department* and *apartment*, or *apartment* and *compartment* (or all three!) could then be used to focus on the important differences between such visually-similar words.

The two students sometimes uttered either a partial word or a word completely different from the target word. In addition to phonemes and roots, a focus on morphemes along with building students' repertoire of common morphological affixes (such as *-ing*, *-ed*, and *-ment*) may prove beneficial in this regard. Additionally, teaching how to determine the number of syllables in a word, and then ensuring that their utterance matches the number of syllables in the target word, may help refine their strategy. Finally, an instructional focus on the number of phonemes in a word, as well as directing attention to the sequence of the letters in that word, may aid students in fine-tuning their decoding skills.

Conclusion

This study was limited given there were only two subjects; therefore, it is impossible to glean overarching results from this study. Nonetheless, we can still see that, even after they have advanced a few language levels, LESLLA students may continue to need support in their overall reading development. Yet, a number of pressing questions were not answered by this study. To

begin, when articulating incorrect phonemes, were the students not noticing some letters, or were they mis-mapping grapheme-phoneme connections (or, was their miscue based on something else entirely, such as suffering from cognitive overload?) Additionally, what sort of processing was happening when students' utterance was completely different than the target word (e.g., for *again* the utterance was "is.")? In these cases, what linguistic cues were students attuned to—phonemic, morphological, orthographic, contextual—if any? Finally, what were the key factors determining the difference between Alonda and Wazira's stages of reading development? As with most areas of LESLLA research, more studies are necessary to help LESLLA practitioners develop a deeper understanding of the reading development of LESLLA learners, to better guide students on their path towards reading fluency.

References

- Boon, D., & Kurvers, J. (2008). Learning to read Portuguese in Timor-Leste: Strategies of adult literacy learners. *LESLLA Symposium Proceedings*, 3(1), 75–90. <https://doi.org/10.5281/zenodo.8000765>
- Bourke, L., & Adams, A. M. (2010). Cognitive constraints and the early learning goals in writing. *Journal of Research in Reading*, 33(1), 94–110. <https://doi.org/10.1111/j.1467-9817.2009.01434.x>
- Brown, G., & Chater, N. (2004). Connectionist models of children's reading. In T. Nunes & P. Bryant (Eds.), *Handbook of children's literacy* (pp. 67–90). Springer Science Business Media.
- Fahrenbruck, M., & Liwanang, M. P. S. (2021). Teaching miscue analysis to preservice teacher candidates: Two instructional approaches. *Talking Points*, 32(2), 15–23.
- Frith, U. (1986). A developmental framework for developmental dyslexia. *Annals of Dyslexia*, 36, 67–81.
- Ghanem, E. (2021). Individualized program plans for adult ESL literacy learners. *CONTACT Magazine*, 36–47.
- Gianola, A. (2009). *City Dreams*. New Readers Press.
- Goodman, K. S. (1969). Analysis of oral reading miscues: Applied psycholinguistics. *Reading Research Quarterly*, 5(1), 9–30.
- Harm, M. W., & Seidenberg, M. S. (2004). Computing the meaning of words in reading: Cooperative division of labor between visual and phonological processes. *Psychological Review*, 111(3), 662–720. <https://doi.org/10.1037/0033-295X.111.3.662>
- Hess, N., & Pollard, L. (2018). *Wow! Stories from real life: A low-beginning, multi-skills text*. Alta English Publishers.
- Kendeou, P., van den Broek, P., Helder, A., & Karlsson, J. (2014). A cognitive view of reading comprehension: Implications for reading difficulties. *Learning Disabilities Research and Practice*, 29(1), 10–16. <https://doi.org/10.1111/ldrp.12025>
- Kurvers, J., & van der Zouw, K. (2007). Development of Word Recognition Skills of Adult L2 Beginning Readers. *LESLLA Symposium Proceedings*, 2(1), 23–43. <https://doi.org/10.5281/zenodo.7992886>
- Marrapodi, J. (2013). What doesn't work for the lowest level literacy learners and why? *Apples – Journal of Applied Language Studies*, 7(1), 7–23.

- Masterson, J. J., & Apel, K. (2010). The Spelling Sensitivity Score: Noting developmental changes in spelling knowledge. *Assessment for Effective Intervention*, 36(1), 35–45. <https://doi.org/10.1177/1534508410380039>
- Nation, K., & Castles, A. (2017). Putting the learning into orthographic learning. In K. Cain, D. Compton, & R. Parilla (Eds.), *Theories of reading development* (pp. 147–168). John Benjamins Publishing Company.
- Parsons, R., & Brown, K. (2002). *Teacher as Reflective Practitioner and Action Researcher*. Wadsworth/Thomson Learning.
- Perfetti, C. (2007). Reading ability: Lexical quality to comprehension. *Scientific Studies of Reading*, 11(4), 357–383. <https://doi.org/10.1080/10888430701530730>
- Rayner, K., & Reichle, E. D. (2010). Models of the reading process. *Wiley Interdisciplinary Reviews: Cognitive Science*, 1(6), 787–799. <https://doi.org/10.1002/wcs.68>
- Seidenberg, M. S. (2007). Connectionist models of readings. In G. Gaskell (Ed.), *The Oxford Handbook of Psycholinguistics* (pp. 235–250). Oxford University Press.
- Seidenberg, M. S., & McClelland, J. L. (1989). A distributed, developmental model of word recognition and naming. *Psychological Review*, 96(4), 523–568.
- Stanovich, K. E., & West, R. F. (1989). Exposure to print and orthographic processing. *Reading Research Quarterly*, 24(4), 402–433.
- Wallace, C. (2008). A Socio-Cultural Approach to Literacy Instruction for Adult ESOL Learners New to Literacy. *LESLLA Symposium Proceedings*, 3(1), 91–98. <https://doi.org/10.5281/zenodo.8000789>