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LESLLA Symposium Proceedings

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Second Language Proficiency, Academic Language, and Digital Literacy for LESLLA Learners

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ABSTRACT

This research highlights the challenge of providing digital literacy instruction in a second language to adult learners who may have had limited formal education. Animating the work is the view that success in classroom learning is linked to proficiency with linguistic structures constituting the academic language of a context (Schleppegrell, 2004) and that instructional strategies and resources mediate learning (Vygotsky, 1987). Two questions guided the study: what are the linguistic structures evident in classroom discourse on basic computer skills; and what instructional strategies promote proficiency of this academic language? The goal of the analysis was to develop an awareness of the linguistic features defining the ‘field’ of the context (Schleppegrell, 2004) and then to identify interactions whereby teachers made them accessible to learners. Findings support the strategy of explicit vocabulary introduction preceding or provided in correspondence with computer skill instruction, and provision of ample opportunities to practice and deepen knowledge of skills and vocabulary to a conceptual level.

INTRODUCTION

This study investigates the issue of English as the primary language of instruction in computer classes held in community technology labs and frequented by English language learners (ELLs). Taking a functional approach to describe language use, I investigated instructional strategies employed to teach computer skills and the academic language used to do so. This study was motivated by the idea that learning specific academic content requires learning the language used to describe it and that if teachers recognize where and how vocabulary and specific linguistic structures are central to success with academic content, they can determine how to best provide support for comprehension (Lemke, 1990; Schleppegrell, 2013). Schleppegrell (2004) suggested such success is characterized by command of the language used in specific academic contexts. Learner identity and investment in learning are deeply connected to command

of academic language, including not only the vocabulary and language structures but also a broader communicative competence accomplished through use of language. Hence, in order to best support adult ELLs in digital literacy learning opportunities, teachers and tutors must be made aware of academic language and be prepared to scaffold learning to make use of it (Fitts & Bowers, 2013).

In the US, many adult English language learners study in formal adult education programs, with trained or licensed teachers. Because these programs are often full, community-based organizations offering more informal programming, work hard to fill gap and provide much needed educational opportunities; however, the teachers working there are often minimally trained and struggle to support the learning needs of adults for whom English is not a first language. Additionally, because they lack funding and expertise for materials development, CBOs depend on an assortment of web-based learning resources developed for literate English-speaking, learners. This research sought to better understand how to maximize the positive impact of the resources that are there – including how to best support volunteers or AmeriCorps member who often serve as teachers there – particularly around issues of language and the role of language instruction in support of digital literacy skills development.

THEORETICAL APPROACHES

Because I am considering how teaching and how learning is mediated, I rely on sociocultural theory that rests on the work of Lev Vygotsky, where the organic (the brain) and the cultural both impact the mind, leading, over time, to development and learning (Lantolf & Poehner, 2008). More practically, I draw on the research of Silver-Pacuilla and Reder (2008) and their literature review defining minimal skill level for learning online. Their research determined that what is needed is an equitable distribution amongst three areas: learner skill, support available, and the demands of a task (see Figure 1). One of the goals of this study was to determine how to provide an equitable distribution amongst these three components when working in the particular context of this study: CBO computer labs supported by minimally trained teachers attending to a diverse range of adult ELLs.

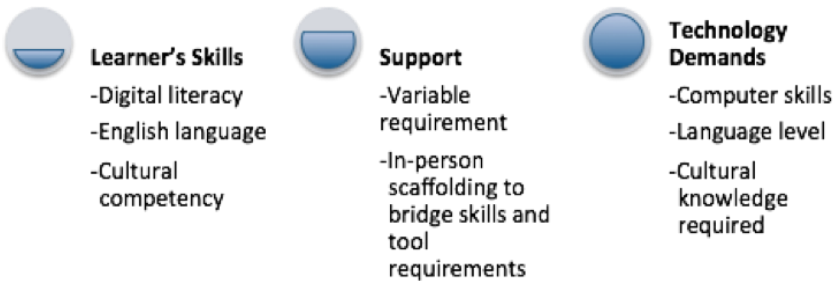


Figure 1: Minimum requirements for learning online (Silver-Pacuilla and Reder, 2008)

LITERATURE REVIEW

This literature review begins with an introduction to Academic Language (AL), touching on Systemic Functional Linguistics (SFL) as a theoretical framework for elucidating how meaning in AL rests within context. What follows then connects ideas from AL and SFL to current thinking about vocabulary and what it is to truly know a word. Finally, I show how these frames, taken together show how a functional approach is important for understanding the role of language in digital literacy skill development.

Academic Language

Academic language, the language of schooling, serves as a means to support learning of academic content (Gottlieb & Ernst-Slavits, 2014). The concept of AL stretches from early cognitivist work of Basil Bernstein (1971) and Cummins (1981) to the current work of Jeff Zwiers (2007; 2013), whose rich contributions to academic language in K12 setting show how support around academic language proficiency can support development of critical thinking skills and academic success. The approach drawn on here is Schleppegrell's functionalist perspective that connects AL to SFL, which was a turn in linguistics that shifted focus from structure of language to functions and meaning (Halliday, 1985; Halliday, 1993; Halliday, 2003).

Schleppegrell's (2004) functional approach requires identifying the configuration of grammatical structures that are typical, expected, or socially relevant in any context. By doing so one can define the register, "the configuration of lexical and grammatical resources which realizes a particular set of meaning" (p. 46). Drawing on Halliday (1994), Schleppegrell (2004) presented a structure for organizing elements of a register, the language of a social context, which includes the field (representing ideas), tenor (representing a stance), and mode (structuring text). These elements work together within a context to define the shape of discourse that efficiently or accurately expresses meaning within it. By attending to these variables, we can explore or understand linguistic structures evident in different social contexts, and thus define the language of schooling (Schleppegrell, 2004). A functional analysis is necessary in order to elucidate the language required to display knowledge. Though there is some common ground with the more cognitive-based approaches to SLA (i.e., theories that focus on input), a functional approach suggests that the motivation for and utility of teaching academic language is to provide scaffolding that may leverage a learner's prior experience.

Vocabulary

Understanding a parallel line of inquiry on vocabulary teaching and learning is necessary to frame the instruction written about in this study. Though much of it focuses on either K12 or higher-level L2 vocabulary development, it is useful for theorizing the role of vocabulary with low-level ELLs in computer classes, particularly the literature that characterizes what it means to have knowledge of words. Knowing a word is complex endeavor encompassing different types of

knowledge. Graves, August, and Mancilla-Martinez (2012) described it as a mix of receptive and productive knowledge. Knowing a word is also understood as a continuum Beck, McKeown, and Omanson (1987), as illustrated in Figure 2.

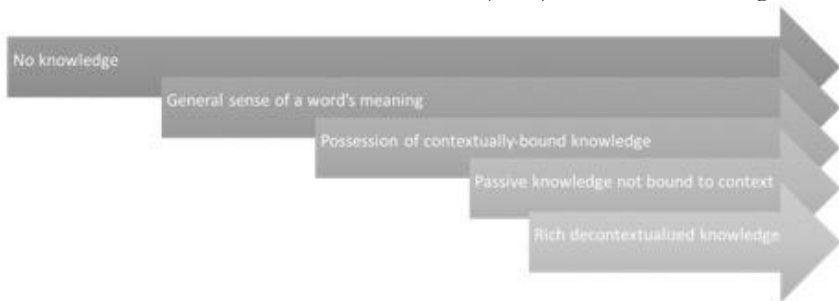


Figure 2: Continuum of word knowledge (Beck, McKeowan, & Omanson; 1987)

A person starting with no knowledge of a word gradually progresses to eventually understand its meaning and make use of it in a variety of settings. Knowing a word may also mean knowing the connection of words to broader concepts, topics, or situational discourse where words are relevant or useful (Miller, 1978 as described in Beck, McKeown, and Kucan, 2013).

Perfetti (2007) writing on lexical quality hypothesis, articulated specific features required to truly know a word, for example: semantics, phonology, orthography, morphology, and syntactic rules. Perfetti also suggested that if one could draw on relevant prior knowledge, he or she was essentially providing a form of familiar context, cuing a personal schema to support understanding the word. This is problematic for ELLs with no prior computer experience before they began working on digital literacy concepts.

Why AL for this Study?

AL is a promising means by which to scaffold adult ELLs engagement as a both a learner and legitimate participant in broader world, which is increasingly found online. An AL study can elucidate the language required to fully participate in learning and daily living. In that sense, AL serves as social capital. Zwiers (2013) wrote that such capital is critical for knowing what to say, do, or write in an educational setting. This sentiment is the motivation for the study, and because there is a gap in research for adult migrants working in the context of digital literacy classes, the study strives to answer the following questions:

1. What are the linguistic structures evident in classroom discourse of digital literacy?
2. What instructional strategies promote proficiency of this academic language?

METHODOLOGY

This is a qualitative case study of AL used in basic computer skills classrooms. For this study, I focused on representations of “field,” the ideational choices, or what is actually being talked about (e.g., nouns and verbs). I focused

on the language evident in instruction and by comments about teaching made by focal participants in focus group discussions. Particularly important in this context are those nouns and verbs that constitute the vocabulary of the basic computer skills classes observed. Vocabulary is an important component of ideational choices in language use, because when used successfully, it helps learners display knowledge and show they are part of a discourse community (Schleppegrell, 2001).

Data Sources

To account for the vocabulary required for participation in basic computer classes, I analyzed data from my notes and audio transcripts of recordings of classroom observations (22 hours) and focus group discussions amongst five participant teachers (13 hours). These data included conversations where participants described their beliefs about the role of explicit language instruction in the classroom and the relationship between English language proficiency and digital skill development. I took note of language used to describe the content skills that served as the focus of skill instruction, the explanatory language used to make those content skills clear, and instructional strategies employed to teach them. I also analyzed any artifacts employed in instruction of the focused computer skills.

Table 1

Technology Access Collaborative (TAC) sites' students			
Site/ Facilitator	Students' home language(s)	Education/English level	Program Year(s)
Ascend/ Erik	Mixed Horn of Africa languages	Adult learners with mixed L1	2015-2016
		literacy proficiency and mostly low L2 English proficiency	2016-2017
Newcomer House/ Marty	Spanish; Some diverse African and Southeast Asian languages	Adult learners with mixed L1	2015-2016
		literacy proficiency and ranging from low to high L2 English	2016-2017

* Focus group discussions included up to two additional participants, but because their primary learner audience was not low-level ELLs, I will not include them in this analysis. All names are pseudonyms.

Sites

The participating sites were part of the same umbrella AmeriCorp program, which I call Technology Access Collaborative or TAC. TAC serves over 30 organizations in the metro area in which it is based. The sites I chose represent the range of CBOs that host TAC AmeriCorps members. The two primary informants for this study were the two sites most consistently serving low-level ELLs in the period 2015-2017.

Participants

At Ascend, the TAC member, Erik, offered classes to adolescents and adults. The program’s intent was to support workforce training and computer skills with the goal of helping community members achieve economic and social stability. Instruction in the computer lab was characterized by a rolling cohort with very few learners coming every day and no way of knowing who will attend each day. Marty’s work Newcomer House was a bit different, in that Newcomer House enrolled ELLs in formal English language learning and provided computer classes to supplement language classes. These computer classes were several weeks long and supported a cohort group of students that remained largely intact throughout the course, with new students joining in along the way. It is important to note that neither Erik nor Marty spoke the first language of most of their learners.

Data Analysis

Table 2	
Codes	
Code	Code
Sub-codes	Sub-codes
1. Instruction of content	2. Student Info
Process of Instruction	Levels
Review	ELLs
Using student home language	Class demographics
Classroom management	
Individual Help	3. Language Analysis
Cohort model	Conceptual understanding
Transferable skills	Teaching vocab
Display questions	Vocabulary inconsistency
Activity	
Resources	4. Needs
Use of Northstar	Multilingual
Articulation of skills	Class logistics
	Differentiation

I qualitatively coded data in a multicycle process (Saldaña, 2012). In cycle one, I applied structural codes, for example Language analysis, Instruction of content, and Needs to draw out data that represented use of language or instruction of the language or digital literacy. First cycle coding also included what Saldaña referred to as attribute codes, used for marking useful demographic information about learners and context, for example: Student info, levels, ELLs, class demographics. I took a second pass still drawing on first cycle codes for as Saldaña (2012) suggests, “a more attuned perspective” (p. 10). During this phase of coding, I applied descriptive codes to flag immediate salient themes within

this subset. Table 2 shows the codes that resulted from both cycles and are most relevant for the research presented here.

FINDINGS

The analysis of these data suggested that determining the bounds of an academic language “field”, or vocabulary, is not a straightforward endeavor. It was clear that the “ideational field” was shaped by vocabulary found in a required assessment, but that the explanatory language meant to support skill development varied. Further, the treatment of key vocabulary became more sophisticated as the project progressed.

The Language of Computer Skills Instruction

As I analyzed field notes, analytic memos, transcriptions of focus groups and class observations, and classroom artifacts to answer the question What are the linguistic structures evident in classroom discourse on basic computer skills? I noticed ample data that informed identification the key vocabulary in this context. In total, the codes “language analysis, vocabulary inconsistency, and teaching vocabulary were applied 203 times, and often marked data referencing the Northstar Digital Literacy Assessment. These data suggested that the ‘field’ in this context was constituted by key vocabulary articulated in skills tested in the Northstar Digital Literacy Assessment. It was clear that the standards on which the assessment is based motivated the vocabulary used in the classroom. Evidence for this finding was most neatly reflected in a comparison of the instructional materials from the focal site, Ascend, and the actual Northstar standards. The data are summarized in Table 3.

<i>Table 3</i>				
Coincidence of key terms and concepts in course materials and assessment standards				
Skill area	Number of times class terms are articulated in both standards and materials	Number of times class terms are articulated only in materials; but implied by standards*	Number of standards not covered in class materials	Number of terms articulated in materials but not in standards
MS Word	24	3	5	2
Computer Basics	26	12	6	0
*Terms used in course materials reflect more detail than what is articulated in the standard, but teaching standard necessitates use of the term.				

Table 3 shows that that there was a high correspondence of terms that appeared in both the Northstar Digital Literacy Standards and the course materials for both MS Word and Computer Basics, the classes that I observed several times at Ascend.¹

Varied Language Employed in Explanations. There was not much consistency in the language of explanation that TACs provided to support instruction of the skills. At Ascend and Newcomer House, explanations for different skills generally started with a group presentation led by the teacher and then shifted to individual practice supported by one-to-one help when needed. The one-to-one support that followed depended on the learner’s needs, from casual observation to literal hand holding as the facilitators monitored practice.

Table 4

Transcript excerpts showing varied explanatory language (Classroom observation, April 4, 2016)

Minute	Speaker	Excerpt
17:25	Volunteer	Try swiping that
17:42		Swipe
17:53		Put your cursor here and swipe
18:00		No. Put your cursor here. Now swipe.
20:30 - 21:02	Erik	1 So, highlight all of your text, we’re going to do copy 2 paste and cut. So, if you highlight all of your text. So, 3 you want to click. So, make sure you click and 4 highlight. Try copy. So, if you highlight and try the 5 copy button. Go to the end of that one and then you 6 click right there.

Each corps member seemed to tailor their explanations to their community of learners. Because these students varied, the explanations had to vary too. Additionally, each of the sites had volunteers who came with their own way of describing things. An example of this variation can be seen in the following classroom transcript excerpts from a Microsoft Word text formatting lesson at Ascend represented in Table 4, where Erik used the word “highlight” and the volunteer consistently referred to “swipe” for the same action.

Teaching Vocabulary in Computer Classes

The second focus of inquiry investigated whether or not and how the vocabulary of computer skills was made accessible to learners by answering the following question: *How do service corps members draw on key vocabulary in their*

¹ There were several terms that were included in the standards, but not covered in class. These are less commonly used affordances of MS Word and so were not taught, for example customizing mouse control and adjusting screen resolution.

instruction? The most useful finding is that there was a shift in the corps members' perception of the role of vocabulary development in instruction.

Starting point: Vocabulary not a focus. At the beginning of the study, these data suggest that vocabulary instruction was viewed as secondary to the skills instruction, rather than the focus of instruction. For example, in the first focus group meeting in January of 2016, there was an acknowledgment that language was an issue in teaching computer skills, but there was no conversation about how language instruction or vocabulary support should figure into instruction. In this conversation, Erik framed vocabulary development as a by-product of computer skills instruction, "...the one thing you hope for is that then eventually they start learning terminology to associate with that concept" (Transcript from focus group, January 8, 2016, minute 3:40).

Early shift: Considering vocabulary. A few months later, Erik and Marty appeared to consider the importance of vocabulary in their instruction. Erik shared, "*The first day of my class in particular is just, what is this called? It's called a mouse. What is this called and then to learn the functions before that they have to understand why it's called that...*" (Transcript from focus group, March 18, 2016, minute 9:07). Marty said that she was beginning to think about skills and vocabulary as connected, "*Yeah and so I started integrating okay if we're going to talk about there will be some new vocabulary and I will introduce and say, 'Okay this is the new word for... this is the new... this is a new word'*" (Starting at 11:38).

Recognizing the importance of vocabulary instruction. Data from both Newcomer House and Ascend suggest that as time progressed Marty and Erik began to allow more time for focused instruction and practice of vocabulary and attendant skill development.

Erik's work at Ascend. Data from three parallel lessons taught by Erik show how his thinking about vocabulary building shifted. In the first lesson, taught on April 4, 2016, vocabulary was embedded into the skills instruction. In this lesson, he included key terms on PowerPoint slides projected to a presentation screen, as seen in Figure 3, and introduced as he talked through the slide. This instruction included some provision of definitions and comprehension checks done with display questions, but no practice of vocabulary.

Data from Erik's class on the same topic three months later show that over time, Erik began to integrate activities to support vocabulary instruction. This shift is evident in Table 5, included here to provide an overview of the range of instructional activities observed in the class.

The class taught on June 17 included each of the instructional activities observed in the earlier class, plus a demonstration and extra vocabulary review activities. It also featured concepts presented one at a time, rather than several terms at once, as happened in the earlier lesson. Because there were pauses between the introduction of each concept and a review opportunity at the end, this lesson opened up the opportunity for more differentiated explanations of the skill and vocabulary, and better supported learner needs that the previous lesson.



Figure 3: Powerpoint slides shown by Erik at Ascend on April 4, 2016

Table 5

Instructional strategies used in Erik’s parallel lessons on text formatting in Microsoft Word

Instructional Activity	April 4, 2016	June 17, 2016
Vocabulary instruction embedded into skill explanation	x	x
Powerpoint slide showing skill and key words	x	x
Demonstration		x
Several words and concepts presented simultaneously	x	x
One word or concept presented at a time		x
Vocabulary worksheet	x	x
Supplemental vocabulary and review activities		x
Practice skill	x	x

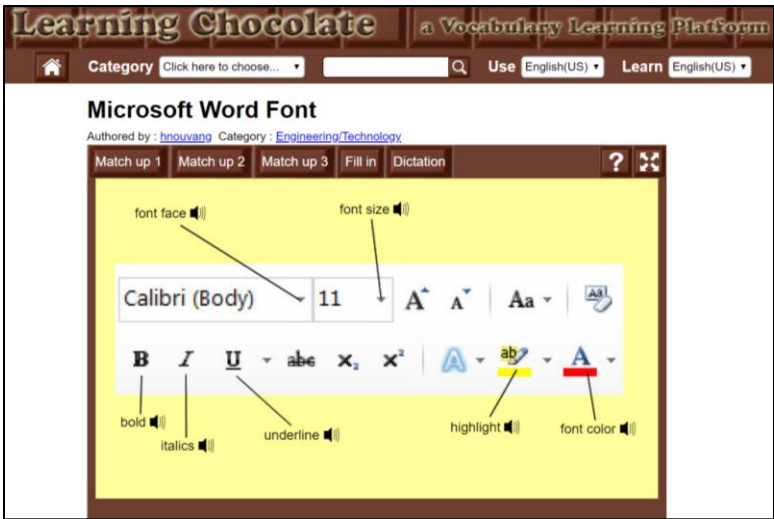


Figure 4: Web resource linked to for extra practice
(www.learningchocolate.com/content/microsoft-word-font)

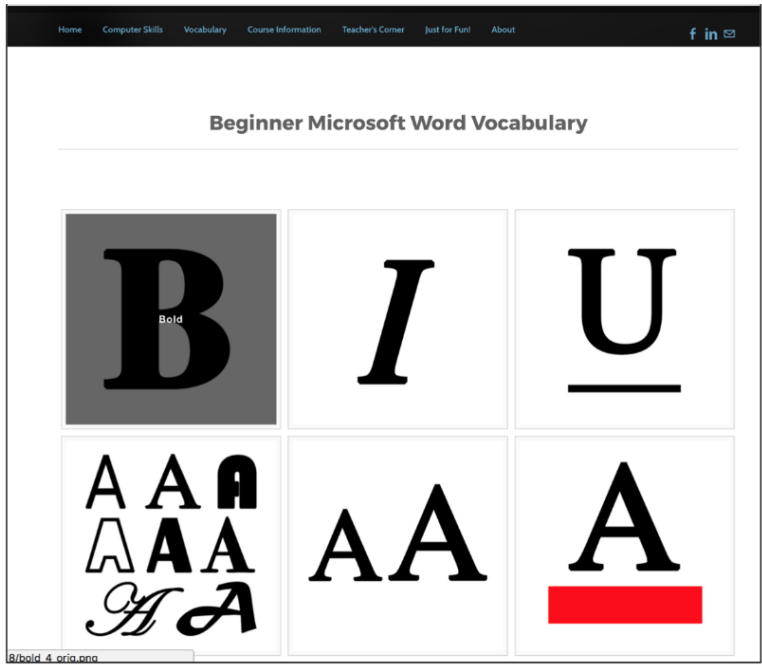


Figure 5: Glossary for Word formatting provided in Digital Homeroom

Additionally, as students demonstrated a need for more individual help, either Erik or a classroom volunteer referred them to extra online activities housed in the Digital Homeroom, the key resource developed through this research, which was available for students to access. It contained links to

additional practice that provided support with skill and vocabulary introduction, including links to external websites like the one pictured in Figure 4, which is an online activity from a website with numerous lessons on English language vocabulary.

Extra support was also provided in the glossary of computer skill vocabulary built into the Digital Homeroom and made available during this lesson, as featured in Figure 5.

Marty's work at Newcomer House. The shift to incorporating more explicit support for vocabulary building and time to learn and practice it was also evident in a March 15, 2017 class taught by Marty at Newcomer Home. The one-hour class focusing on Computer Basics was almost entirely a vocabulary lesson about the parts of a computer. Marty led the class through six activities, five of which supported vocabulary development. These included: clever use of a document camera and small cards picturing the vocabulary words which were sorted into the categories “hardware” or “software” (see Figure 6) and then naming the parts visible on an actual laptop. She also had the learners pull up the computer basics page of online glossary (shown in Figure 5 above) and click through the words at leisure, which gave the students time to talk in their home languages (Spanish, Karen, and Somali) in small groups. Marty then pulled out an old laptop that had been taken apart and its constituent parts labeled, so that the learners could see a visible example of the interior hardware (see Figure 7).

Marty ended the class with another classification activity using a worksheet, requiring the learners to write the word for the first time. She had learners write their answers on a projected image of the worksheet (pictured in Figure 8). After a word was written, the rest of the students confirmed or contested the choice.

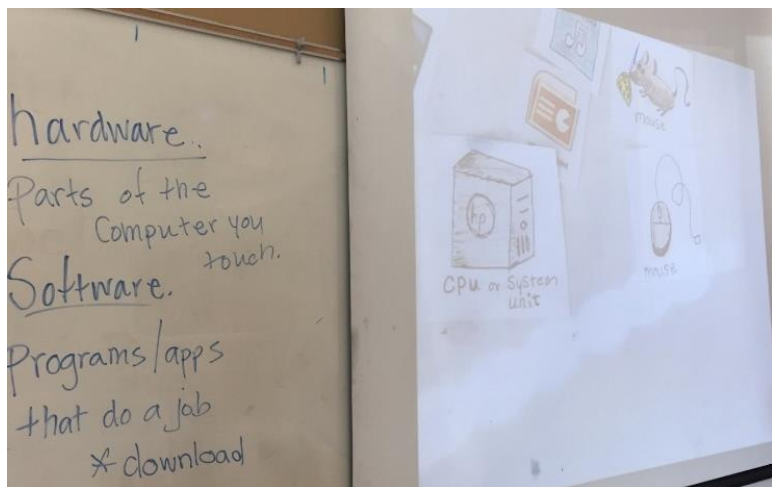


Figure 6: Document camera vocabulary activity



Figure 7: Labeled laptop

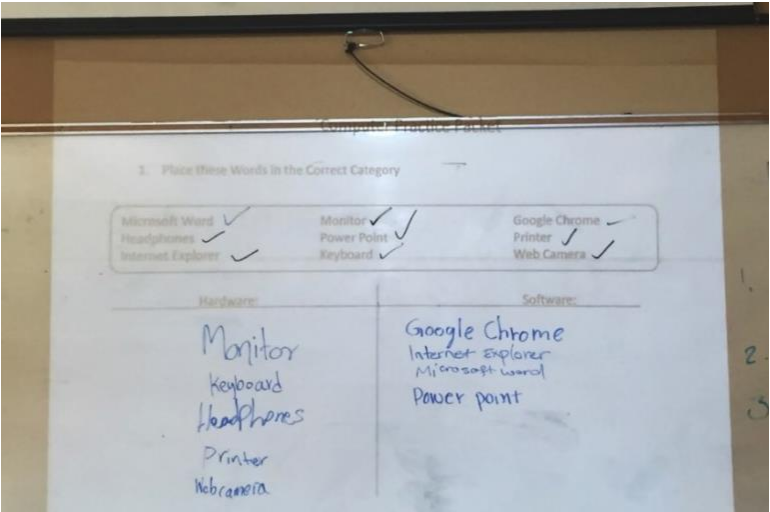


Figure 8: Projected vocabulary worksheet

In field notes documenting a debriefing conversation after class, Marty observed that, over the 17 months she had been at Newcomer Home, she had realized the importance of making time for ample vocabulary support. To make this possible, she said that she had slowed down the pace of the assessment cycle from three instructional hours before an assessment to 40 hours, with nearly half of those hours dedicated to vocabulary development and other language required to make use of computer.

Talking about their work. Data from focus group discussions support observational data provided above, showing that corps members began to think deeply about the role of vocabulary instruction in their work. In the June 24, 2016 focus group, Erik provided a theoretical explanation of what he thought it meant to know a word, which can be seen in the excerpt and the corresponding Figure 9.

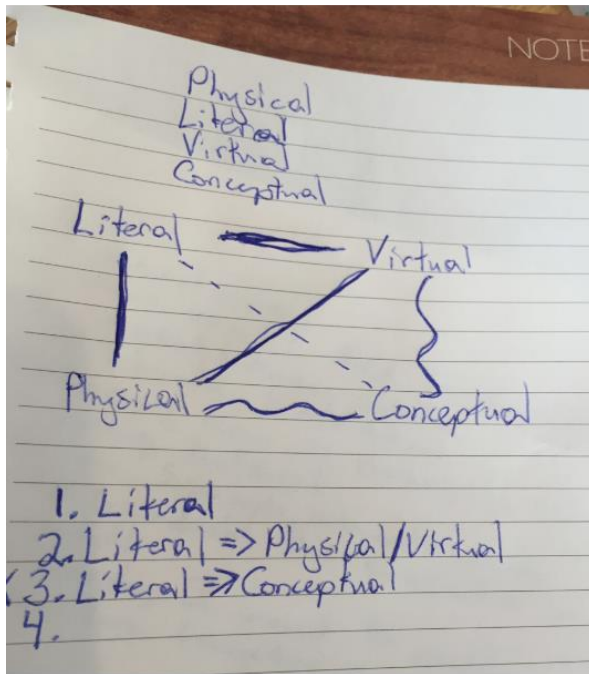


Figure 9: Erik's understanding of the connection between skills and vocabulary

- 1 Erik So, I said **the literal are the words**, the actual words sometimes.
2 **The physical is like a computer like this** [demonstrates
3 something you can touch]. **The virtual is the presentation I make**
4 on a web interface or on a PowerPoint **and then a conceptual is**
5 **what they do**. And the literal to the physical and the literal to the
6 virtual make complete sense people get that. They know how to
7 name things very quickly. We learn that quickly and then I try to go
8 to the conceptual, like from the word to the concept and that's the
9 least connection, like that's where I'll lose people.

(Transcript from focus group, June 24 2016. Starting at 26.50)

By the literal, Erik meant the vocabulary used to label the skills they were working on. The physical, was mostly just that, a physical object, but also referred to abstract representations of physical as required by the content, he mentioned, for example “hand cursor”, “file” or “folder” (which are not actually a physical hand, file, or folder). Another example mentioned was the “bold” button visible on a computer screen, which cannot actually be touched; rather, it is an affordance that triggers a response from the computer. Erik referred to his verbal and visual instruction as “the virtual” as in, something of the “physical” and “literal” that he had described. Finally, he suggested “the conceptual,” which was the learner’s demonstration of the focus skill - the goal of instruction. By

providing this explanation, Erik showed that he has been thinking about the connection between skill mastery and vocabulary knowledge.

Later in the transcript excerpt Marty and Erik discuss the impact of depth of word knowledge on computer skills learning.

- 1 Jen [Clarifying question about concept map Erik drew] So, for
 2 example they might be able to succeed in a mousing activity but
 3 if you asked them to do something in a Word exercise they won't
 4 be able to do mousing?
 5 Erik Yeah exactly and to me the conceptual means the ability to
 6 transfer that knowledge to other things. And that's how I define
 7 it at least ... So basically, the X is where I kind of lose people.
 8 So, then after I noticed that words [his literal] to concept doesn't
 9 work, I'll try to go physical or virtual to concept, so then I try to
 10 show them this or say, "What does it do?" That still doesn't work.
 11 And so I'm, I think I've kind of hit a wall in my teaching, is the
 12 ability to get to the conceptual level.
 13 Marty Oh, I totally identify with that.
 14 Jen ...So how do you know that they're not getting there...
 15 Erik What is it that I noticed? When I introduce a new program they
 16 basically revert to where we were at the beginning, and people
 17 just saying, "I don't get it like you show me." I'll very, very
 18 frequently teach on that.
 19 Jen So you see them not being able to apply skills across contexts or
 20 learning to the tasks?
 21 Erik Yes.
 22 Marty Interesting
 23 It's like almost as if each [[new program everything]]
 24 Erik [interrupted]...
 25 [interrupts]...[[required]] all new skills.
 26 Jen Exactly. It's like mousing is not something you learn for all
 27 Erik computer things it's something that mousing works for
 28 Microsoft word and my suggestion of this is from people saying
 29 show me things that they just showed me they did a second ago
 30 so.
 31

(Transcript from focus group on June 26, 2016, minute 26:00)

The exchange reifies the finding that their thinking about the goal of their instruction had shifted to include a deeper understanding of what it means to know a word or skill. This level of reflection on the connection between language and skill was not evident in any earlier data. It signals a reflexive practice and the understanding that the goal of instruction is not simply memorizing a list of vocabulary words, or response to commands to replicate skills (e.g., clicks on a computer) but a wish that learners can fully acquire both the language and skills to work independently and across multiple contexts.

DISCUSSION AND IMPLICATIONS

Although the functional approach to this research was illuminating, showing the source of the key terms of the “field” in basic computer skills classes and the inconsistency in the language employed to teach the skills, the findings point to a limitation in viewing the language of digital literacy from a strictly lexical perspective. These data suggest that vocabulary is just one aspect of conceptual understanding required for mastering the skills, which, together with knowledge of the abstract representation of a word within the hardware and software of the computer, also includes a broader conceptual knowledge and a physical embodiment of the skill instructed.

What is it to Know a Word? The Sociocultural Perspective

The notion of “concept” was introduced by the corps members several times in data presented above. They used the term as a practical description of the knowledge of a vocabulary and its associated skill in this context. Though they had not intended to, they hit upon a very useful theoretical construct in sociocultural theory. Vygotsky (1987) also used a Russian equivalent of the term; he equated “concept” as a way to frame a word’s meaning, defining concept as a thematically unified entity that encompasses individual elements. He suggested that the meanings attributed to words are abstractions that gain meaning through observing use and interaction (mediation) in a particular context. He wrote that knowing a word’s meaning reflects an understanding of the development of one’s consciousness and an understanding of a concept. Knowledge of a concept develops over time and involves the adoption of the cultural practices of a context in addition to developing systematic and categorical knowledge of words and their meanings. Vygotsky suggested that direct instruction of a particular skill or word is insufficient to support understanding of a concept; rather, a broader more abstracted knowledge of it is developed through ongoing mediated activity and observation or practice.

My analysis suggests that Marty and Erik came to understand this in the final months of the research. Within what was possible at their respective sites, given learner demographics and the environment of the lab, each corps member, in some measure, arrived at the realization that simply knowing a word was not enough to support computer skill development. Consequently, each added instructional strategy provided focus and mediated activities that offered a semblance of the practice or lived experience necessary for the learners to not only understand the vocabulary and skills but also reach the conceptual level of understanding necessary for transferring those terms and skills into new contexts.

Though community-technology labs offer varied affordances for supporting learning (i.e., class duration or frequency, schedule, cohorts or drop-in), no matter the affordance, facilitators of learning in these environments would benefit from professional development that supports understanding that conceptual knowledge of a word is necessary if their goal is to teach transferable skills to learners. To ensure that instruction in such settings is suitable for the

broadest range of students, it should be highly visual, supported by demonstration linking words to skills, and have ample opportunities to practice the key words followed by hands-on practice mediated by tutors or teachers.

These data elucidate what it is to know a word the context of digital literacy:

- 1) recognizing a word supplied in instruction,
- 2) knowledge of how the concept the word references is enacted,
- 3) the physical capacity to enact the skill, and
- 4) knowing when and why to enact the skill, or ability to recognize the vocabulary within and transfer to skill to a new context.

This list is not dissimilar from the process from Beck et al. (2013) articulated in the literature review. On first consideration, point three, “The physical capacity to enact the skill” may seem beyond the scope of language instruction; however, I think it represents an extension or new application of our understanding of what it is to know a word. It adds an embodied use of the vocabulary, the requirement to physically enact the skill, which can complicate learning. For example, mousing requires both physical control of the mouse and spatial knowledge of where things are on the screen and how to move the mouse to direct the cursor. Physically enacting a computer skill is a component of the skill represented by the constituent lexicon of the “field”, so to possess conceptual understanding that is transferable, it can be argued that one must “do”.

This research therefore requires an expanded view of academic language and serves an example of research that pushes SFL in application to new contexts created by technological ubiquity of daily life in countries where migrants and refugees reside. The social practice in which the learners were engaged was not entirely text based, as is most commonly the unit of analysis of SFL, but also included internal or environmental cues for enacting a particular skill or use of a computer.

Schleppegrell (2004) writes:

Students need to gain social experience with the ways of using language that are expected at school and a greater understanding of the linguistic resources available to construe new knowledge. A functional theory of language that links language and social context grounds the characterization of the task that students face at school in the challenges of realizing in language the new contexts and knowledge presented in the classrooms. (p.17)

In this context, meaning is embodied conceptual understanding of vocabulary, not a rote or behavioral response to a command. Meaning in this academic register requires an embodiment. If I say click and drag, it is not enough to understand what the words imply, one needs to be able to physically demonstrate knowledge of and then make use of the skill. In this case, perhaps language supports skill development in that it acts as cues to signal what a learner needs to practice, or can be used to ask for help with skill development. However, simply pre-teaching the vocabulary will likely not in itself support a

learner's skill development. It is important that teachers attend to the meaning that is possible, and to leverage meaning when describing skills by providing more personalized explanations of how to carry out a task.

CONCLUSION

Ensuring opportunities for flexible, differentiated, and responsive instruction can best meet the individual differences in the varied learning needs and challenges with vocabulary comprehension evident in diverse group of learners (Ableeva, 2008). Such instructional settings make possible embodied, enacted, and mediated language and learning. The participant teachers in this study, namely Erik and Marty, grew into expertise that reflected such practice over the course of their AmeriCorps service, leaving resources in place for the volunteers and service members who followed them. Over time and with the support of these resources and adequate professional development, future corps members may come to understand the connection between word knowledge and skill development more quickly - making their service year more feel more efficacious and their learners more successful in their learning.

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