Redesigning Applied Phonology for a Virtual Classroom: Reimagining Kinesthetic Activities

Rediseño de la fonología aplicada para un aula virtual: Reimaginando las actividades kinestésicas

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ABSTRACT

Engaging a student in active and meaningful learning, which has traditionally occurred in physical spaces, has transcended. With ongoing advances in technology and recently spurred by an unprecedented pandemic, meaningful learning is transitioning to virtual spaces. By accessing digital tools, course instructors now create engaging online learning spaces where learners invest directly in their own learning by interacting virtually with classmates and by doing academic activities and socially oriented activities (Bigatel & Edel-Malizia, 2017). In these recently created virtual classrooms, course instructors are able to model kinesthetic activities and guide online learners to use their entire body for doing physical actions that support the processing of new information such as in the teaching of applied phonology. Such educational experiences become further enhanced when these virtual learning spaces embody a teaching presence, a social presence, and a cognitive presence. As outlined by the Community of Inquiry Framework, an instructor's virtual teaching presence directly affects social presence and cognitive presence in this mutually shared space (Garrison et al., 2010). Together, these three types of presence impact the learners' sense of community and overall satisfaction with the virtual learning process (Blain, 2019). Similar to other course instructors, teacher educators have also been converting their courses to virtual modalities (Foulger et al., 2017). To that end and as part of a larger study (Prado et al., 2020), the current study documents and explores emerging teacher presence during the online transition of an applied phonology course which, for over a decade, has been a major cornerstone within an ESL master's degree at a university in the southeastern United States. This study also examines the corresponding transition in reimagining kinesthetic activities from this course's former physical space to its redesigned virtual space.

Keywords: community of inquiry, virtual learning space, teaching presence, kinesthetic activities, applied phonology, pronunciation teaching

RESUMEN

Al involucrar a un estudiante en el aprendizaje activo y significativo, que se ha generado tradicionalmente en los espacios físicos, se ha trascendido. Con avances continuos en la tecnología, e impulsado recientemente en esta pandemia sin precedentes; un aprendizaje significativo viene transicionándose a espacios virtuales. Al acceder a herramientas digitales, los profesores ahora crean espacios virtuales de aprendizaje donde los estudiantes se enfocan directamente en el aprendizaje al interactuar virtualmente con compañeros de estudio mientras que aquellos completan actividades académicas y actividades orientadas socialmente (Bigatel & Edel-Malizia, 2017). En las aulas virtuales recientemente creadas, los profesores pueden demostrar actividades kinestésicas y guiar a sus estudiantes virtuales en usar todo su cuerpo para hacer acciones físicas que apoyan el procesamiento de nuevas informaciones tal como ocurre en la enseñanza de la fonología aplicada. Estas experiencias educativas llegan a ser aún mejor cuando estos espacios virtuales de aprendizaje encaran una presencia docente, una presencia social, y una presencia cognitiva. Según esbozado dentro del marco de la *Comunidad de Investigación* (ligada a "Inquiry" en inglés), la presencia docente virtual del profesor afecta directamente la presencia social virtual y la presencia cognitiva virtual en este mismo espacio mutuamente compartido (Garrison et al., 2010). Juntos, estos tres tipos de presencia influencian el sentido de comunidad del estudiante y su satisfacción en general con el proceso de

aprendizaje virtual (Blain, 2019). Similar a los profesores de otras materias, los educadores de capacitación docente vienen convirtiendo sus materias a modalidades virtuales (Foulger et al., 2017). Con este fin y como parte de una investigación más amplia (Prado et al., 2020), la investigación actual documenta y explora la presencia docente emergente durante la transición al espacio virtual de la materia "Fonología Aplicada" que, por más de una década, había sido una piedra angular principal para una maestría en la enseñanza de inglés como segunda lengua (ESL, por su sigla en inglés) de una universidad en el sureste de los Estados Unidos de América. Esta investigación también examina la transición correspondiente a la reimaginación de actividades kinestésicas desde un espacio físico donde esta materia anteriormente fue dictada hacia el rediseño de un espacio virtual para esta misma materia.

Palabras Claves: comunidad de investigación, espacio virtual de aprendizaje, presencia docente, actividades kinestésicas, fonología aplicada, enseñanza de la pronunciación

INTRODUCTION

Kinesthetic activities have long been used to enhance active and meaningful learning in physical classrooms. Yet, as technological advances have become increasingly more accessible and user-friendly, instructors have been transitioning their instruction to virtual classrooms (Bigatel & Edel-Malizia, 2017). During this transition, instructors have faced the dual challenge of redesigning their instruction for online delivery while also reimagining kinesthetic activities for a virtual classroom. By using digital tools, these instructors create engaging online learning environments where learners invest directly in their own learning, interact virtually with classmates, and carry out academic activities and socially oriented activities. However, while transitioning courses to online, some instructors may seem unsure about how to transition kinesthetic activities to these virtual spaces.

With the onset of the 2020 pandemic, instruction went virtual, literally overnight. With little or no previous training in designing online courses, instructors were tasked with instantaneously converting their instruction from a physical space to a virtual space. Fortunately, ESL teacher educators at a major research university in the southeastern U.S. had already begun transitioning to online before the pandemic struck (Prado et al., 2020). Yet, both before and after pandemic onset, the instructors of this program's applied phonology course grappled with how to transition kinesthetic activities, essential for learners in processing applied phonology concepts, from its former physical classroom to its future virtual classroom. This article documents these instructors' journey in redesigning their applied phonology course for online teaching while also reimagining this course's kinesthetic activities.

LITERATURE REVIEW

Community of Inquiry Framework

To create online learning that is engaging and meaningful, instructors must create opportunities for learners to invest directly in their own learning. Such invested learning takes place when learners interact virtually with their classmates during academic activities and socially oriented activities (Bigatel & Edel-Malizia, 2017). In these engaging virtual classrooms, instructors' model kinesthetic activities and direct learners with using their entire body for physical actions to support the processing of new information. These educational experiences are further enhanced if virtual learning environments cultivate and nurture teaching presence, social presence, and cognitive presence within a Community of Inquiry Framework (Garrison et al., 2010). In this Community of Inquiry, an online instructor's teaching presence affects both the social presence and the cognitive presence. As defined by Garrison et al., teaching presence is the course design, facilitation, and direction of the learning process. Social presence is the learners' sense of belonging and their engagement in the academic endeavor. Cognitive presence is the actual process and result of academic learning. Blain (2019) further

describes the Community of Inquiry by how these three presences impact the learners' sense of community and satisfaction with the learning process. Foulger et al. (2017) has examined how teacher educators convert their courses to online, and Prado et al. (2020) have explored virtual teacher presence among ESL teacher educators while converting their entire master's program to online.

Kinesthetic Activities for Teaching Pronunciation

Several researchers have examined how kinesthetic activities can support instruction in second language pronunciation through movement, embodiment, and the five senses (Acton 2010; Acton et al, 2013; Chan, 2018; Teaman & Acton, 2013). Common activities used for teaching pronunciation include gesturing, touching parts of the body included in speech production, and using multiple senses to perceive effects of speech production such as actually seeing how aspirated stop consonants can blow out a candle. Engaging multiple senses is of extreme importance when teaching pronunciation to second language learners because of how they cannot initially hear distinctions among several of the phonemes in the target language. To help our English learners perceive and produce English phonemes, we can guide them in first perceiving difficult English phonemes through their other senses—sight, touch, taste, smell. Kinesthetic activities using large muscle movements are also very useful when teaching pronunciation, especially for enacting stress patterns. By "focusing attention on embodiment, pronunciation learning and teaching can be enhanced" (Chan, 2018, p. 48). More specifically, "full-bodied, systematic, multiple-modality pronunciation teaching" (Acton, 2010) provides opportunities for learners to feel how pronunciation happens, to be influenced by the shape of the human body, and to engage multiple senses—kinesthetic, visual, auditory, and tactile. By engaging all learners and propelling learning from movement to memory, this multi-sensory approach has been used to anchor new knowledge and guide the transfer of this knowledge to spontaneous speaking.

Among kinesthetic activities for teaching pronunciation is *Stress Stretch* (Chan, 2018). In this activity, the teacher sits on a chair facing the learners who are also seated on chairs. When pronouncing a multisyllabic word, everyone stands for the syllable with primary stress and stays seated for the other syllables. *Stress Stretch* "incorporates movement and rhythm of large body muscles with stress and intonation in oral language in a purposeful and systematic way" (p. 59). Of special interest is how the "rise and fall of the body during the *Stress Stretch* emulates the rise and fall of vocal pitch" (p. 60). By doing *Stress Stretch*, English learners gain awareness of the syllable with primary stress, internalize length and pitch into body memory, activate and link several modalities, and learn to accurately place primary stress when saying multi-syllabic words. *Stress Stretch* can also serve to motivate language teachers in exploring other types of kinesthetic activities with large body movements to use when teaching pronunciation.

REDESIGNING APPLIED PHONOLOGY AS AN ONLINE COURSE

Teaching Applied Phonology in Different Contexts

The first context in which I taught applied phonology was an undergraduate English degree program in Paraguay. I taught applied phonology in evening classes to entering college students between 1982 and 2002. As my experience increased, so did the interactive techniques and kinesthetic activities that I incorporated into my classes. The second context in which I taught applied phonology was an ESL master's degree program in the United States. I taught applied phonology on Saturdays to graduate students from 2004 to 2019. Because each of these Saturday classes was eight hours long, I incorporated even more interactive techniques and kinesthetic activities. Although this second context seemed very different from the first context,

I was still teaching in a physical classroom to students who were novices in linguistics. As I transitioned between contexts and as technology progressed, I adjusted my teaching from chalkboard to whiteboard, from an overhead projector to a liquid crystal display (LCD), from a computer to a learning management system (LMS), from students' paper-based submissions to their online submissions, and from all students being physically present to an occasional student attending via iPad. In 2020, I found myself entering a third context, that of a virtual classroom. Of these changes, the most challenging was converting applied phonology to a fully online course.

Transitioning the ESL Master's Program to Online

In January 2019, our ESL teacher education faculty decided to transition our ESL master's degree to online for staying abreast the growing wave of online teaching and for maintaining a competitive edge. We planned a four-semester transition and targeted specific courses for converting online during each of these semesters. We specifically chose applied phonology for the final semester because of its kinesthetic nature. To prepare for applied phonology's online transition, my colleague Mary and I began filming lessons in January 2020, just ahead of the COVID outbreak. We finished filming lessons and editing captions in August 2020, just in time for applied phonology to go live as an online course. As anticipated, our greatest challenge was effectively incorporating kinesthetic activities into this new virtual environment.

Establishing a Community of Inquiry

While preparing for the online transition of our ESL master's program, we learned that an optimal virtual environment should cultivate and nurture a Community of Inquiry entailing a cognitive presence, a social presence, and a teaching presence (Garrison et al., 2010). Guided by these three presences, we redesigned our courses for transitioning to online delivery (Prado et al., 2020). Our faculty consisted of teacher educators, like Mary, who were well versed in instructional design and development, and also of teacher educators, like myself, who were novices in the design of quality online courses as well as novice facilitators of virtual spaces. To better understand this dual process of designing online courses and facilitating virtual spaces, we sought answers to two questions:
1) How do novice online instructors develop an online teaching presence?
2) How do novice online designers incorporate kinesthetic activities to facilitate learning?

This second question led us in redesigning our applied phonology course for a virtual classroom and, while doing so, in reimagining kinesthetic activities as reported in this article.

IMPLEMENTING APPLIED PHONOLOGY IN VIRTUAL SPACES

Designing Instructional Modules for Online Teaching

Before we could implement our applied phonology course in a virtual classroom, we first needed to design instructional modules. With Community of Inquiry as our guide and the QM Quality Assurance System (Quality Matters, 2020) as our goal, we decided to develop 14 modules on the LMS, one module for each of the 14 weeks in our semester. We decided to teach topics online in about the same sequence that we had taught face-to-face (F2F). Just like our former F2F students, our future online students would do weekly readings from textbooks and articles, complete phonology exercises, and interact with each other through threaded discussions on the LMS. As before, our online students would complete a major course project by pre-assessing a language learner's pronunciation, teaching pronunciation weekly for six weeks, and post-assessing the learner's progress. And, as before, our students would take a test

in the fourth week, another test in the eighth week, and an exam in the tenth week. However, different from before, our future online students would be meeting virtually with their project participants, and they would be taking their tests on the LMS.

Other differences also existed between our former F2F course and the design of our online course. During the first eight weeks in the online course, students would be watching pre-recorded lesson videos. While watching these videos asynchronously, they would be doing kinesthetic activities alone in their own settings. To facilitate their participation while viewing the lesson videos, students would be encouraged to view these videos in a quiet setting where they would be able to carefully hear and repeat sounds, would have room to move freely, would not be watched by others, and would not feel inhibited when doing activities. As modeled on the video, these students would be repeating phonemes and minimal pairs, gesturing, touching the parts of their body involved in producing speech. using all five of their senses, using didactic materials gathered in preparation for the lesson, stretching their arms, standing, squatting, and jumping.

Because these asynchronous lessons would be void of both instructor feedback and student questions, we would be creating weekly self-monitored quizzes to enhance cognitive presence and weekly "Fun with Phonology" sessions to enhance both social presence and teaching presence. These synchronic 45-minute sessions would serve for the instructor to review concepts and provide feedback as well as for students to ask questions, seek clarification, and work together virtually in small breakout rooms to solve content-based problems and to help each other practice the kinesthetic activities.

Reimagining Kinesthetic Activities for Virtual Spaces

As we were designing the instructional modules, it was easy to list the kinesthetic activities on our written plan. However, upon preparing PowerPoint slides for the lesson videos, we realized that we would need to reimagine how to incorporate our kinesthetic activities in our future virtual classroom. When filming our lesson videos, we needed to complement our content instruction with encouraging words to our asynchronous viewers so that they would actually repeat the sample words out loud, follow our modeled actions, and do the kinesthetic activities as indicated. As novice video instructors, we learned to keep reminding our viewing audience to repeat target words and to follow modeled actions. We became more acutely aware that some kinesthetic activities did not require didactic materials and others did. For the latter, we needed to make sure that our future students would gather the needed materials before starting to view the lesson video.

The most common kinesthetic activities not requiring didactic materials were for touching parts of the body involved with speech production. As novice video instructors, we learned to model a given activity and then give sufficient wait time for our future viewers to repeat our modeled action. For example, when teaching the concept of voicing, we demonstrated virtually, just like we had done in a physical classroom, and then, as before, asked viewers to say the sounds and repeat our actions. To demonstrate voicing, we would say "zzzz" and "ssss" while simultaneously placing our fingers across our vocal cords. We explained that vibration could be felt with "zzzz" but not with "ssss." We then demonstrated how to feel voicing vibration by saying "zzzz" and "ssss" while pressing our fingers under our chin, right next to the throat. After modeling that activity and having our viewers repeat it, we demonstrated the next voicing vibration activity—that of saying "zzzz" and "ssss" while pressing the palms of both hands firmly across the top of our head. Finally, after modeling that activity and having students repeat, we shared our final voicing vibration activity, that of saying "zzzz" and "ssss" while plugging both ears simultaneously with each of our index fingers. Such as during our former F2F course, we would again revisit important concepts, like voicing,

throughout our redesigned online course by reviewing it cyclically, as appropriate, during subsequent video lessons.

Another kinesthetic activity related to touching parts of the body was for tense/lax vowels. When being filmed, we followed the same procedure as with the voicing activity, that of first showing and explaining, and then modeling and having students pronounce the words and repeat the action. To feel the tense/lax distinction, we showed how to place four fingers of one hand across one check while saying first "beat" and then "bit. Viewers were to feel tenseness of cheek muscles when saying "beat" (like the smile in "cheese") and no such tenseness or smile when saying "bit". The next step was to show viewers how to use the selfie image on their cell phones to see the smile in their check muscles when saying "beat" and no such smile when saying "bit." We followed up with this same tense/lax distinction ("beat"–"bit") in the "Fun with Phonology" session. Here students participated synchronously in another kinesthetic activity, that of holding up one finger if they heard the first word in a minimal pair ("beat") and two fingers if they heard the second word in that same pair ("bit"). This kinesthetic activity of holding up fingers on the screen produced a much faster student response than having students find icons on their respective devices.

When teaching applied phonology in a physical classroom, we would always ask our F2F students to bring common items to use as didactic materials. Because we wanted to incorporate these same kinesthetic activities in our virtual classroom, we now needed to include instructions in the online instructional module for students to gather required materials before viewing a given lesson. To accompany kinesthetic activities in our new virtual classroom, we decided to use the same materials as in our earlier physical classroom: mirror for students to view their own articulation; red sock for students to use on their hand as a tongue puppet; rubber band or Slinky for students to see and feel lengthening; chopsticks or tongue depressors for students to touch and feel the points of articulation such as alveolar ridge, palate, and velum; flat lollipops for students to touch and feel different parts of the tongue and also incorporate the sense of taste; tissue, pinwheel, or feather for students to see movements created by their own aspiration; and a candle (with matches or a lighter) for students to see and smell how their accurate aspiration of voiceless stop consonants can actually blow out the flame on this candle. For these and other didactic materials, we demonstrated and explained the kinesthetic activity and then modeled it again while viewers repeated the actions that we were modeling.

Using Embodiment to Represent Stress Levels

My favorite kinesthetic activity in applied phonology is the *Jump-Stand-Squat.* This activity entails three actions (jump, stand, squat), one for each level of English stress. Through *Jump-Stand-Squat*, English learners embody all three stress levels and, through these actions, learn to perceive and produce English stress. The kinesthetic embodiment of stress for the word *photograph* is illustrated in Figure 1.

As shown in Figure 1, "pho-" is the first syllable of *photograph*. It carries major stress, which can also be called primary stress or strongly stressed. Major stress is long, loud, and high. It is embodied by the boy who is jumping. We jump high to show high pitch, jump strongly to show loudness, and stretch our arms to show length by taking up space on each side. This strongly stressed syllable is so important that it is like acting a major role in a film.

Figure 1 also shows how "-to-" is the second syllable of *photograph*. It carries no stress, which can also be called unstressed or lack of stress. In this unstressed syllable, the vowel converts to a schwa /ə/. This schwa is embodied by the little figure that is squatting down, becoming smaller, and almost disappearing. To enact a syllable with no stress, we squat like the little figure is doing. By squatting and being hunched over, we assume a shape that resembles the shape of the schwa font /ə/. This unstressed syllable is so unimportant that it blends with the background; it is like being an "extra" in a film.

Figure 1. Embodiment of Word Stress Levels in the English Language
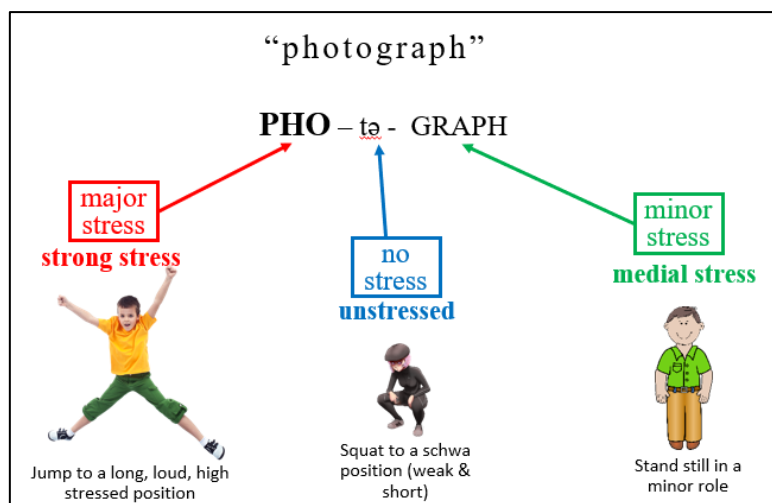
As further shown in Figure 1, "-graph" is the third syllable of *photograph*. It carries minor stress, which can also be called medial stress, secondary stress, or lightly stressed. Minor stress is embodied by the boy who is standing still. When we stand still, we are neither acting strong nor trying to shrink and disappear. We are simply there. This lightly stressed syllable is of minor importance; it is like acting a minor role in a film.

Enacting English Stress Patterns

An additional challenge regarding English word stress is how, depending on the suffix, stress levels can switch to other syllables. An excellent way to teach the English stress patterns of multisyllabic words is by having learners enact these patterns. This is especially useful for teaching and learning different stress patterns of the same word family where all words have the same root but different suffixes. Once again, we illustrate this with the word *photograph*.

As we saw above, *photograph* has strong stress on the first syllable. So, we jump, show strength, and stretch our arms. With no stress on the second syllable, we squat down and almost disappear. With minor stress on the third syllable, we simply stand still. After I demonstrate these three actions (jump-squat-stand) on the lesson video, I encourage viewers to do these same kinesthetic actions. Below are transcriptions of what I said in the lesson video while demonstrating stress enactment for the words *photograph* (Figure 2), *photography* (Figure 3), and *photographic* (Figure 4).
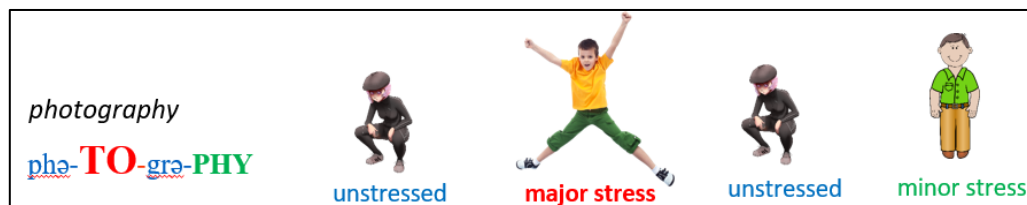
Figure 2. Stress Pattern of the Word "photograph"

Video Instructor (Figure 2): *We are going to enact the stress pattern for the word "photograph" which has three syllables: "pho-to-graph." Alright, everyone! Get up! Stand up! Be sure to back away from your screen so that you have more room and don't hit anything. Now, let's all move together with enacting the stress pattern of "photograph." Jump on the*

*first syllable "PHO –". Squat on the second syllable "-TO-". Stand still on the third syllable "-GRAPH." Excellent! I like how you were all following my motions. Let's try that again "**PHO**-to-GRAPH: "pho-" (jump), "-to-"(squat), "-graph" (stand). Excellent! Even better than the first time! Please note that, on the second syllable, I actually disappeared behind the lectern and off the screen. That is perfectly fine because I was enacting a schwa, and the schwa does almost disappear.*

Figure 3. Stress Pattern of the Word "photography"

Video Instructor (Figure 3): *Now, let's try enacting the stress pattern for the word "photography." Because of its suffix, this word now has four syllables: "pho-to-gra-phy." Here, the strong stress has moved to the second syllable, and there are two schwas. In this stress enactment, we will go from the squat to the jump, then back to the squat, and finally to the stand. Ready, everybody. We are going to try saying and doing this all together: "pho-**TO**-gra-PHY." Excellent! So, we went from a squat, to a jump, back to a squat, and finally to a stand. Now, let's say that and act that again: "pho-**TO**-gra-PHY."*

Figure 4. Stress Pattern of the Word "photographic"
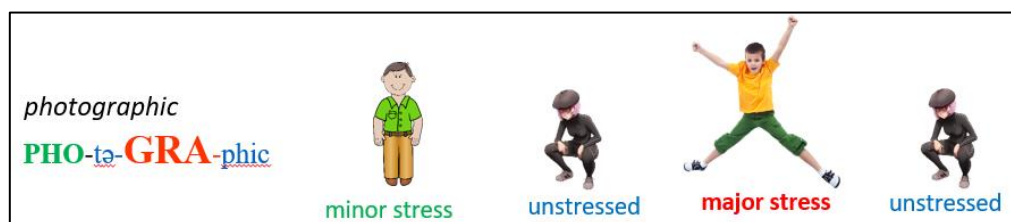
Video Instructor (Figure 4): *Finally, let's try enacting the stress pattern for the word "photographic" which also has four syllables: "pho-to-gra-phic". Here, the strong stress has moved to the third syllable. Once again there are two schwas but on different syllables than in the previous word. Here we will start with a stand, then a squat, then a jump, and then back to a squat. Everybody, all together: "PHO-to-**GRA**-phic". Okay. Very good! Now, let's try this again" "PHO-to-**GRA**-phic". Excellent!*

This *Jump-Stand-Squat* activity entails three actions for kinesthetically representing English word stress. It bears some similarity to the two actions in *Stress Stretch* (Chan, 2018). However, in addition to emphasizing strong stress, which is the goal of the *Stress Stretch* activity, the *Jump-Stand-Squat* activity helps English learners with perceiving and producing all three levels of English stress. Given that *Jump-Stand-Squat* uses several greater body movements representing the three stress levels, it will probably create stronger connections between movement and memory than would an activity with just two movements—sit and stand. To that end, *Jump-Stand-Squat* could probably lead to benefits similar to those purported for pedagogical movement patterns and anchoring protocols (Teaman & Acton, 2013).

RESULTS

This redesigned applied phonology course was taught online in the Fall 2020 semester (August-December). Asynchronously, nineteen students watched 80 pre-recorded lessons which averaged 15 minutes in length. While viewing the kinesthetic activities modeled on these videos, students carried out these same activities in their respective viewing environments. They repeated sounds and minimal pairs. They touched the parts of their body involved in producing speech. They used all five of their senses. They gathered their own didactic materials and used them when doing the activities modeled on the videos. They stretched their arms, stood, squatted, and jumped. They also attended the weekly "Fun with Phonology" sessions where they reviewed that week's kinesthetic activities under the direct guidance of their instructor and with collaborative help from their classmates, participated in breakout rooms, and worked in groups to solve phonology problems. Fully aware that this was the inaugural semester for our online applied phonology course, students eagerly offered informal feedback. Their anecdotes, together with their coursework and test results, suggested positive outcomes. We now want to learn more about the efficacy of this online course design and its kinesthetic activities.

FUTURE STEPS

We will implement this same online course in Spring 2021 (January-April). During and after this second implementation, we will conduct a study for exploring how students perceive their own learning of applied phonology in a virtual environment and the extent to which they believe that the individual course components supported their learning. We will seek feedback on the efficacy of kinesthetic activities when performed by students alone in their own settings while following the activities modeled on the lesson video. We will examine whether the online teaching of applied phonology to language teachers is facilitated when "integrated with greater bodily awareness, movement, and sensation" (Chan, 2018, p. 63), such as is the case for the teaching of pronunciation to language learners. According to Acton et al. (2013), this "focus on embodiment as a balance to contemporary, highly cognitive instruction holds real promise" (p. 241). We want to explore that promise. We also want to explore aspects in our new virtual classroom that are related to the Community of Inquiry, specifically the teaching presence, social presence, and cognitive presence. To that end, our upcoming study on reimagining kinesthetic activities in a redesigned applied phonology course offers potential for filling a gap in the literature on kinesthetic activities for teaching pronunciation as well as in the literature on Community of Inquiry.

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