

Shaping the “Habits of mind” of diverse learners in early childhood teacher education programs through powerpoint: An illustrative case

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Abstract: This study examines the use of PowerPoint as a teaching tool in a workplace-embedded program aimed at bridging immigrant/refugee early childhood educators into post-secondary studies, and how, in the process, it shapes students’ “habits of mind” (Turkle, 2004). The premise of the study is that it is not only the bodies of knowledge shaping teacher education programs which must be interrogated, but also the ways in which instructors and programs choose to represent and impart these understandings to students. The use of PowerPoint to advance an authoritative western, linear, rule-governed form of logic is analyzed based on McLuhan and McLuhan’s (1988) and Adams’ (2006) tetrads. The findings demonstrate that PowerPoint enhances western authoritative ways of being through its modes of communication and representation, means of organizing information, forms of representing content and pedagogical approaches, thus obsolescing or displacing immigrant/refugee students’ own indigenous ways of knowing. Since learning always involves the development, integration, and reorganization of tools, and the medium is an extension of the self (McLuhan, 2003), the students should have multimodal opportunities to engage with and represent knowledge. When such opportunities are not provided, the life experiences and cultural knowledges of immigrant/refugee students are silenced. Expanding communicative and representative forms in early childhood teacher education programs is necessary to promote a more inclusive environment.

Keywords: early childhood teacher education (ECTE), diverse early childhood educators, power point as pedagogical tool, technology use in ECTE, technology and western epistemology.

The changing composition of the populations of many OECD countries has drawn attention to the ways in which teacher education programs attend to social and ethnic diversity (OECD, 2013). In Canada, where this study took place, the ethnocultural diversity is projected to increase dramatically by 2031 with one in three people anticipated to be a visible minority, disproportionate numbers of whom will be children (Statistics Canada, 2010). Therefore, it is critical to recruit and retain educators who represent these groups (Souto-Manning & Dice, 2007) as they stand to possess the life experiences, cultural bridging skills, and knowledges needed for working with students, children, and families from similar backgrounds (Adair, Tobin & Arzubiaga, 2011; Bernheimer, 2003; Guyton, Saxton & Wesche, 1996; Wilgus, 2013). In the Canadian context, immigrant/refugee women do often choose child care as a point of entry into the workforce as these positions are perceived as being accessible to newcomers (Service Canada, 2011) and they can draw on their prior experiences teaching or caring for young children (Massing, 2015).

Due in part to the low wages earned in assistant level positions that only require the completion of a 58-hour orientation course, many immigrant women are motivated to advance their training, but are unable to enter teacher education programs because of their English language skills (Citizenship and Immigration Canada, 2010) and the cost of tuition (CCHRSC, 2010). Those who are able to overcome these obstacles and enrol in Early Childhood Teacher Education (ECTE) programs are confronted by a well-established body of knowledge and skills that permeate the field. Framed by western child development theories, this dominant discourse promotes the notion of a universal, decontextualized childhood and privileges western normative values and practices. In spite of the growing body of critical literature that challenges the status of developmental psychology as “normal science” (Kuhn, 1962/1996), knowledge of child development theories and developmentally appropriate practices (Bredenkamp & Copple, 2009) are still seen as central to teacher preparation (Lobman & Ryan, 2007). Students who come from different cultural backgrounds are expected to accept the western child-development theories on the authority of instructor and text. They are led to believe that such (authoritative) knowledge will transform them into professionals. Thus, such ‘scientific’ approaches to child-development “necessarily eliminate culturally-based understandings about teach-

ing and learning that teacher candidates bring to their teacher preparation” (Montecinos, 2004, as cited in Wilgus, 2013, p. 7). Teaching then becomes a technical endeavour whereby a prescriptive set of regulated practices is applied “to produce pre-specified and measurable outcomes” (Moss, 2006, p. 35).

While previous studies have enquired into aspects of immigrant/refugee women’s studies in ECTE programs (e.g. Gupta, 2013; Langford, 2007; Massing, 2015; Wilgus, 2013), little attention has been given to the modes of delivery in the program (Exposito & Bernheimer, 2012). We contend that the immigrant/refugee students in such programs are not only confronted with the dominant discourse of ECTE, but also with thoroughly established technological ways of conveying the (western/scientific) knowledge and skills they are expected to acquire. Technologies “embody a *form of thinking* that orients a person to approach the world in a particular way” (Apple, 1991, p. 75); that is, in accordance with western epistemological traditions. In this article, we illustrate how the use of PowerPoint, as a medium or tool of instruction in a workplace-embedded ECTE program, advances an authoritative western, linear, rule-governed form of logic which in turn “affects our habits of mind” (Turkle, 2004, p. 102).

About the Study

In recognition of the unique challenges immigrant/refugee women face when pursuing studies in formal settings (Bernheimer, 2003; Blank, 2010), the Alberta government piloted a community-based, workplace-embedded ECTE program for immigrant/refugee early childhood educators. This program constitutes the Canadian site in our ongoing comparative ethnographic study of ECTE programs in Canada, Colombia, and Namibia (eg. Prochner, Cleghorn, Kirova & Massing, 2014) Nineteen students, nineteen volunteer mentors, and two instructors participated in the research. The students were immigrants or refugees originating from nine different countries (Ethiopia, Eritrea, Morocco, Senegal, Somalia, El Salvador, Sri Lanka, Nepal and Vietnam) who were employed in seven different child care centres. In a weekly three-hour class over a period of two years, this cohort of students was introduced to the content from four first-year university courses. In the first year, students were exposed to the dominant ECE discourse and asked to critique it in order to identify tensions between their cultural beliefs and practices and the western conceptualization of appropriate ECE practice. The primary instructor in the first year of the program did not use PowerPoint in her teaching. Since the second year was intentionally de-

signed to bridge students into a conventional post-secondary program, the instructor, Sandra¹, was asked to teach in the same manner as she would in that program. She used PowerPoint extensively. This article focuses on the use of PowerPoint in the course entitled *Communications 1* that covered topics such as identity, self-esteem, factors affecting communication, non-verbal communication, and various communication techniques to be used with young children. The course textbook was *Powerful interactions: How to connect with children to extend their learning* (Dombro, Jablon & Stetson, 2011).

Consistent with participatory research methodology, data were co-constructed and generated collectively through casual and focused ethnographic observations and collection of field notes during classes, individual interviews and casual conversations, meetings, and document or artifact collection including textbooks/readings, PowerPoint presentations, hand-outs, policy documents, and assignments. One or two researchers observed in every class meeting. Students were each interviewed a minimum of two times. Researchers and instructors met regularly in order to discuss and analyze the data. After an analysis of each of the data sources, significant items of information were identified and shared among the co-researchers. Clustering of the similar items in categories and themes allowed for the identification of group-similar items which serve to guide a group decision-making process leading to concrete solutions of identified practical problems (Creswell, 2005). For the purposes of this article, we will focus only on the tensions between the content presented in a format imposed by PowerPoint and students' culturally formed ways of learning and knowing.

Conceptual Frameworks – Tools and Material Objects as Mediators

The impact that material objects have had on our lives in general and learning in particular have been studied from a number of disciplinary perspectives (see also Dant, 1999; Harman, 2002)

Sociocultural theory of learning (Vygotsky, 1978) articulates the dialectical relationship between the development of the human mind and the invention and improvement of tools such as technological devices that, over time, transform thinking. Cultural tools are both a product and vehicle for the development of human cognition. More specifically, they contribute toward

¹ All names used in this paper are pseudonyms.

the construction of, and are inseparable from, higher psychological structures, altering the flow and structure of mental functions. Vygotsky (1981) regarded tools (i.e. symbolic systems such as language, diagrams, charts, art works, and counting systems) as linking and transforming the connection between an object and the "psychological operation toward which it is directed" (p. 139). As cultural and historical products, tools reflect the values and beliefs of the culture, exist only through continued use within the culture, and constantly evolve in use (Cole & Gaidamaschko, 2007). Consistent with the concept of the zone of proximal development (Vygotsky, 1978), experts guide learners in understanding and using culturally-specific tools which are then utilized to mediate human activity, linking individual actions to the context of learning in the institutional setting (Wertsch, 1995). Since mediated action is transformed by new tools, tools might also introduce affordances or constraints into the classroom (Wertsch, 1998).

Writing specifically about media and communication, McLuhan (2003) argued that new technologies, or ways of using technologies (such as PowerPoint), also function as tools, introducing new patterns and possibilities into our lives and shaping our actions and interactions with others. Accordingly, these are never neutral and passive, but rather act as an "an active logos or utterance of the human mind or body that transforms the user and his ground" (McLuhan & McLuhan, 1988, p. 99). They become "ways of translating one kind of knowledge into another mode" (McLuhan, 2003, p. 85). Therefore, users both modify and are modified by the technologies they use. As Adams (2008) has explained: "things gather (assemble) and stay (stabilize and sustain) human practices. Each new thing congregates us differently, involving us in new practices and ways of being and knowing the world" (p. 171). Cultures attach value to specific forms of communication, based on the means or artifacts available to them, and these "offer differing potentials, both for representation and for communication" (Kress, 2000, p. 194). Cultural training conditions us to be more receptive to certain modes; therefore PowerPoint may constrain immigrant/refugee students' construction of meaning.

Use of PowerPoint in Post-Secondary Contexts

Although originally designed for the corporate use, PowerPoint, Microsoft Corporation's presentation software has become an ubiquitous feature in the landscape of post-secondary teaching and learning (Apperson, Laws & Scepanisky, 2008; Hill, Arford, Lubitow & Smollin, 2012) and, accordingly, has been the topic of mostly quantitative and mixed-methods studies in

fields such as psychology, sociology, business, history, biology, and teacher education. PowerPoint has been described as accessible, widely available, and time-efficient especially when working with larger classes (Parker, Bianchi & Cheah, 2008; Walker, 2007). As Adams (2006) has limned, PowerPoint enhances the instructor's ability to point out significant images, concepts, and words, both literally and metaphorically, from his/her own point of view. In lecture-based courses students found that this particular feature of PowerPoint permitted them to easily identify the key points, retain content, and prepare for their examinations (Amare, 2006; Bartsch & Cobern, 2003; Clark, 2008; Hill et al., 2012; Susskind, 2005). However, the inherent structure of PowerPoint guides the student from one slide to the next in a linear, sequential manner, often leading to superficiality and oversimplification of complex ideas and, as a result, critical analysis and thought are impeded (Hill et al., 2012; Kinchin, 2006; Selwyn, 2007; Tufte, 2004). This structure might also "impose a simplifying logic on our thought processes" emphasizing a particular worldview and way of thinking (Wagman & Newman, 2011, p. 1760). Without infusing interactive, dialogical, constructivist learning opportunities such as questions (Gier & Kreiner, 2009; Valdez, 2013), narration (Walker, 2007), or concept maps (Kinchin, 2006) into lectures, the bulleted text may "leave critical relationships unspecified" (Shaw, Brown & Bromiley, 1998, p. 44).

Several researchers have argued that use of PowerPoint is concomitant with Freire's (1970) banking model of education whereby the instructor transmits key points to the passive learner who, in turn, believes that information is all which is "worth knowing" (Adams, 2006; Harris, 2011; Yilmazel-Sahin, 2009). PowerPoint's structural and organizational rigidity homogenizes pedagogical approaches, thus failing to attend to the growing diversity of the post-secondary student population (Kinchin, 2006), or the minutiae of the local classroom context. However, there is a dearth of research focusing explicitly on the impact of PowerPoint on culturally and linguistically diverse learners in post-secondary programs. While we concur with Craig and Amernic (2006) that it is imperative to consider the "culture, customs, and behavior that are dragged along with PowerPoint and how they affect the way we think" (p. 158), we also believe that it is imperative to fill the gap in the literature concerning examples of possible tensions created by the way of thinking PowerPoint promotes and culturally constructed ways of knowing diverse learners bring to post-secondary programs.

A PowerPoint Tetrad

In order to examine the effects of technologies or tools, McLuhan and McLuhan (1988) proposed a set of laws “intended to provide a ready means of identifying the properties of and actions exerted upon ourselves by our technologies and media and artefacts” (p. 98). These principles are presented as four questions that could be asked about any artefact, technology or medium: What does the medium *enhance* or make possible? What does it *obsolesce* or displace? What does it *retrieve* that may have been previously obsolesced? What does it *reverse into* or produce when pushed to an extreme? These questions or processes are visually represented in the form of a tetrad comprised of two figures and two grounds in proportion. The figure—concept, content, or idea—reflects a western orientation to the world, while the ground—culture or context—resonates with a non-western view (McLuhan & McLuhan, 1988). The authors further postulated that these principles illustrate concurrent rather than sequential or linear processes. Building on this concept, Adams (2006) constructed a PowerPoint tetrad to analyse these relationships in post-secondary classrooms. In what follows, we draw upon and apply her model in the context of the ECTE program for immigrant/refugee women; emphasizing the synergistic interplay between the dimensions of *enhancement* and *obsolescence* as exemplified in the specific modes of organizing information, forms of representing content or knowledge, and pedagogical approaches.

Illustrative Examples – Means of Organizing and Communicating Information

Traditionally, in many ECTE programs, material objects or tools have allowed the instructor to convey ideas in a non-linear manner. Increasingly however, tactile and olfactory exploration of concrete material objects is obsolesced by PowerPoint. This form of organization and communication of information presumes that all students, regardless of their cultural backgrounds, are adept at interpreting information presented in a linear, written, and summarized or outline form. Since many cognitive processes associated with higher mental functioning are not universal but culture-bound, shared by individuals who have undergone similar socialization experiences (Nisbett, Choi, Peng, Norenzayan, 2001; Rogoff, 1990), foregrounding the virtual instead of the actual (Adams, 2006) may disadvantage immigrant/refugee learners. The organization of PowerPoint is consistent with a rule-governed formal logic characteristic of individuals schooled in the western tradition

(i.e. European-North American) and belonging to low-context cultures (Hall, 2013). In low-context cultures, meaning is conveyed in an explicit, linear manner that “marches through point *a*, point *b*, and point *c*, establishes links from point to point, and finally states an explicit conclusion” (Bennett, 2013, n.p.). In contrast, high-context cultures (Hall, 2013), from which most of the students in the program came, adhere to a holistic, rather than analytic, approach oriented toward the context or field as a whole, rather than parts of the whole such as discrete objects or points (Nisbett et al., 2001). Hence a linear organization of ideas may create a dissonance that is deeply rooted in the culturally-valued technical and symbolic tools that were part of students’ own socialization processes and through which their higher mental functions developed (Nisbett et al., 2001; St. Clair & Jia, 2004).

In the ECETE course that was the focus of our study, *Communications 1*, the hierarchical, linear, seemingly logical form of organization of course materials in binders for example, was an unremitting struggle for students. In terms of PowerPoint, students were expected to use and interpret graphs, tables, and other unfamiliar graphic organizing tools with a form and content that was alien to them. Students were asked to make sense of visual icons that were (western) culture specific, sometimes metaphoric, with abstract textual features. As illustrated in the examples which follow, these were often embedded within PowerPoint slides.



Figure 1: What is your mental static? (Source: PPT slides, September 25, 2013)

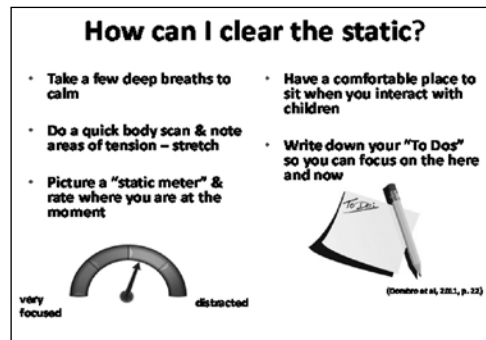


Figure 2: How can I clear the static?

The instructor, Sandra, asked the students to reflect on their own mental static (things which distract them from being present with children) and reduce it to short informational clips:

I want to give you a moment or two. What is your mental static? Do you need more little bullets? You can have them. Maybe you need

more little bullets? Maybe there are more things? (All students are laughing.) So what you are doing in those little balloons is you are writing what are the things which distract you from being fully present with children (September 25, 2013 FN).

While the class discussion that followed had a conversational quality, which was less structured and linear, the linearity of bullets, or balloons in this instance, imposed a fixed structure on ideas. Moreover, the students were asked to engage in linear, sequential, and classificatory explorations and analyses of the phenomena of 'mental static' through the use of written words that aimed at establishing organization and continuity of thought (Ong, 2001). The students, wholly unaccustomed to using such organizational devices found the task meaningless (i.e. they were laughing when asked to complete the task).

Forms of Representing Content or 'Knowledge'

By its very nature, PowerPoint forces the instructor to break up the information into discrete chunks of text in order to fit it on the slide, often succumbing to the entreaty to 'click to add text' appearing on many of the default slide templates (Adams, 2006). The processes involved in the creation of PowerPoint also include evaluation of the materials, and making pedagogical decisions about what information is most important and must be included. Moreover, PowerPoint "risks squeezing out the provider of process – that is to say, the rhetorician, the storyteller, the poet, the person whose thoughts cannot be arranged in the shape of a PPT slide" (Nass cited in Parker, 2001, p. 6). This procedure operates to separate the means from the end, in which the process of constructing the PowerPoint presentation—the instructor's "knowledge-in-action"—is obscured from student view and they see only the final product (Adams, 2006, p. 401). Eventually this reductive process becomes a habit of the mind, reshaping the instructor's own thought processes.

For example, Sandra, the instructor in this program, synthesized complex ideas into mere fragments of text, which could be slotted on the slide, as seen in the examples below:

Although the slides were intended to provide an overview of the content; 'pointing' to specific ideas which were then augmented by oral explanation, the students had no connection to the context from which these ideas emerged.

The immigrant/refugee students in the program had little experience with summarizing that involves abstracting key parts out of the whole, which is discordant with an experience-based epistemology that considers objects and events to be fundamentally interrelated (Nisbett et al., 2001). Although summarizing is a skill that these students needed to acquire in order to be successful learners in a western context, the fact that they had access only to the PowerPoint itself and not to their instructor's intentional and reasoned process of evaluating and translating the content into a succinct form, was not helpful in achieving this goal. When the PowerPoint slide was projected, the students resorted to their learning habits built through their prior education marked by a teacher-centred and directed approach coupled with patterns of rote, repetition, memorization of texts, and an uncritical stance towards the content of 'the text.' It was habitual for the students to try to write down each word on the slide so that they could revisit it and learn the content later on. Once words are made visible as text, they have enduring power and authority; promoting a specific knowledge and way of knowing which "forecloses on other forms of knowledge" (Adams, 2006, p. 81). When information was summarized in bullets, the effects of decontextualization were further amplified.

Being from high-context cultures, the students struggled to ascertain the meanings behind the points on the slides. More specifically, the first two slides (Fig. 3 & 4) amplify specific cultural values based on a Western philosophy of self-actualization and individualism (Smith, 2003). "Each of these theories assumes motivation with an ultimate goal of maintaining or enhancing self image" (Batson, 1990, p. 337). However, culture plays a role in how selfhood is constructed (Smith, 2003), and given the countries of origin of the immigrant/refugee students in the program, they likely have developed their sense of self in relation to others and their social responsibilities to the family (Kağıtçıbaşı, 2007). With respect to the third slide (Fig. 5), while Sandra showed sensitivity to norms around eye contact (Rogoff, 1990),



Figure 3: Identity (Source: PPT slide, September 11, 2013)



Figure 4: Self esteem (Source: PPT slide, September 11, 2013)

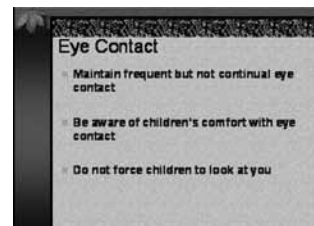


Figure 5: Eye contact (Source: PPT slide, October 30, 2013)

in students' countries—children do not look adults in the eye—the bullets exclude this contextual variation. When the points are stripped of meaning in this manner, the complexity of these concepts is lost and the PowerPoint eventually reverses into pointlessness and incoherence (Adams, 2006).

To compensate for the rigid and sequential nature of PowerPoint, Sandra attempted to include narratives. The slide on Figure 6 depicts one of the very few 'stories' Sandra was able to inscribe on a PowerPoint slide:

For example: I grew up as an only child and my house was pretty quiet. When I first began working with children, I often stopped play with musical instruments quite quickly because it was too loud. I was meeting my own need for quiet rather than children's need to experiment. My inexperience with noisy play, children in groups and lack of child development knowledge caused me to react in this way.

Figure 6: For example (Source: PPT slide, October 23, 2013)

As Adams (2006) points out, narratives must either be oversimplified and fragmented or distributed across several slides thus disrupting the flow and coherence. Sandra's brief story and explanation lacked much of the context for the childhood experience; presenting only a snapshot of her experience and perspective. Sandra negotiated the shift from slide to story by moving from an authoritative stance situated next to the projector more distant from students and desks, which were arranged in a large horseshoe shape, to more relational stance within the students' space. As she moved from one side of the room to the other in an invitational manner, she drew their gazes to her with animated re-enactments of events replete with voices, facial expressions, and actions to enliven the telling.

However, since the PowerPoint adroitly 'points out' the most significant information to students, many students had the impression that the oral narratives imparted by Sandra were peripheral to the written words on the slides as evidenced when they ceased taking notes. In the absence of written text, Sandra's stories were fleeting and transitory, existing only in the students' memories. Using PowerPoint as the authoritative text marginalized the rich, oral narratives that allowed students to form meaningful connections to the materials.

Pedagogical Approaches

The inherent structure of PowerPoint, as enacted in the classroom, foregrounds monologue at the expense of dialogue. Gee (2008) emphasized the impossibility of engaging in dialogue with written text “because of its illusory quality of seeming to be explicit, clear, complete, closed, and self-sufficient, i.e. ‘unanswerable’” (p. 51). The PowerPoint presentations ultimately pointed to the authoritative discourse of early childhood —developmentally appropriate practices and western normative developmental theories—as mediated and interpreted by the instructor and textbook authors. An authoritative discourse, according to Bakhtin (1981), is infused with historically derived power and authority; inscribed with the tradition of theory and practice of the field as well as of the specific institution or program. This discourse is frequently operationalized as a binary between ‘appropriate’ and ‘inappropriate’ teaching and assessment practices arranged in juxtaposition on the same page. Mirroring this format, the following slide (Fig. 7) affirms prescriptive ways of speaking to children and guiding their behaviours:

Descriptive Feedback ☺	Praise ☹
<p>...is specific “You picked up all the puzzle pieces!”</p> <p>...focuses on behaviour “You cleared the table all on your own!”</p> <p>...emphasizes process “You’ve been working hard building that fort all morning!”</p>	<p>...is vague “Good job!”</p> <p>...evaluates the person “Good boy!”</p> <p>...evaluates product “That is a great fort!”</p>

Figure 7: Descriptive Feedback and Praise (Source: PPT slide November 6, 2013)

Although the ‘descriptive feedback’ as a way of speaking to children was foreign to students, only one, Hasna (from Somalia), directly challenged the authority of the slide:

Hasna: I don’t know about other people but for me, because this is a second language for me, it’s easier for me to shorten the thing instead of sitting there and explaining to the kid all of this. It’s slow but

if I say good job, good girl it's short. (Classmates are agreeing with her.) But to explain is so slow. (Classmates laugh.)

Sandra: I'm going to encourage you Hasna to add a little bit more.

Hasna: But in my country, my mother always said oh you're such a good girl, I feel so happy, so good.

Sandra: Okay, okay, so there's the reason why that may be what you say.

Rigidity is implicit in the layout (Fig. 7) as there is one right (and one wrong) way and the happy and sad faces communicate this to students. While Hasna contested the authority of the text, during the ensuing discussion the other students argued in favour of the preferred/appropriate practice, eventually leading Hasna to acquiesce and say she, too, would practice.

Dialogically constructed understandings were often sacrificed in favor of adherence to the authoritative discourse and efficient, time-oriented delivery. Even though Sandra was open to oral discussion, students quickly learned not to deviate from the format outlined on the PowerPoint or they would face judgment from classmates.

Implications

It is not only the bodies of knowledge shaping ECTE programs which must be interrogated, but the ways in which instructors and programs choose to represent and impart these understandings to students. While immigrant/refugee ECTE students experience challenges related to academic skills such as writing and reading (Gupta, 2013; Kennedy, 2008), these are not only language-related. Since learning always involves the development, integration, and reorganization of tools, immigrant/refugee students may experience this process differently (Iddings, Haught & Devlin, 2005) in part because access to tools is often unequal within a society (Bruner, 1985). Cultural variations in cognitive processes, and the culturally-specific tools used to shape those processes, cannot easily be taught to individuals outside of that particular culture (Nisbett et al., 2001). PowerPoint, for instance, enhances western authoritative ways of thinking through its modes of communication and representation, means of organizing information, forms of representing content, and pedagogical approaches, thus obsolescing or displacing immigrant/refugee students' own orientations.

The study from which the illustrative examples presented here were drawn, demonstrated that the use of PowerPoint inhibits dialogue that affirms and

honors the students' own holistic orientations to the world (Nisbett et al., 2001). Moreover, it imposed a particular way of thinking about the world that is perceived by the students as being professional. PowerPoint presentations, along with the authoritative text reflecting the dominant discourse in ECE affirmed in the students' minds that unless they learn how to use the concepts presented in both modes, they would not become professionals. As a result, when asked to work in groups to read a chapter in the text, summarize, it, and present the content to the class, all of the groups chose PowerPoint as the medium of presentation. The analyses of their completed PowerPoint presentations indicated that, with the exception of one group, all drew their points verbatim from the text, often reproducing the textbook's format, headings and subheadings precisely. Although this strategy was consistent with their experience 'back home' of memorizing rather than altering or paraphrasing the words of the 'expert' author (Bharuthram, 2013), it also indicated that the use of the scientific vocabulary was seen as the only way of becoming a professional as required by the dominant discourse in ECE.

If the medium is an extension of the self (McLuhan, 2003), students should have multimodal sensory opportunities to engage with and represent knowledge in a variety of media forms. If such opportunities are not provided, the life experiences and cultural knowledges of culturally and linguistically diverse students are silenced. Ryan and Grieshaber (2005) believe that instructors must assist students in situating knowledge within the various contexts in which it has been (re-)produced, in part by examining the knowledge base. When the course content is reduced to fit the PowerPoint slide, the context—the western values, beliefs, and knowledges—underpinning the authoritative discourse is reduced to an abstract, simplified, bulleted form requiring interpretation and explanation. This context needs to be made visible to students and negotiated in relation to their worldviews to bring it into a coherent, comprehensible form, particularly when students come from high-context cultures. Sharing stories or narratives assists culturally and linguistically diverse learners in forming connections between the course content and the realities of their own experiences (Exposito & Bernheimer, 2012). A narrative mode structures understanding differently than a paradigmatic or logico-scientific mode (Bruner, 1986), which compartmentalizes, sequences, and categorizes information much like a PowerPoint presentation. Unfortunately, as the present study demonstrated, the written texts on the slides ultimately exerted supremacy over these narrative ways of knowing. The PowerPoint format reduced complex concepts to words that these students copied verbatim, and they later struggled to

find their own words to represent their knowledges when developing their own PowerPoint presentations. In the context of the program we studied, the use of PowerPoint demonstrated that "direct instruction in concepts is impossible. It is pedagogically fruitless. The teacher who attempts to use this approach achieves nothing but mindless learning of words, an empty verbalism" (Vygotsky, 1987, p. 170). Following Vygotsky, Edwards (2014) suggested that there must be continuity between the ECTE students' own common-sense knowledge (spontaneous concepts) and the more theoretical and abstract knowledge (scientific concepts) of the program. Only then can they become part of hierarchical thinking only in the contextual richness of everyday thought (Vygotsky, 1987). We do, however, take even more radical stands in support of Wilgus' (2013) call for the development of "alternative canons" (p. 177) that must become a task the field of early childhood teacher education must tackle if students' cultural, historical, social and political knowledges and experiences are to be incorporated as legitimate 'texts' in ECTE programs.

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