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Embodied and arts-integrated languages and literacies education in primary teacher education: Becoming-teachers' diffractions of opportunities-*and*-challenges

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Embodied learning and arts integration have recently gained more attention in research on languages and literacies education. Researchers have stressed that teacher education can act as a catalyst for bringing new perspectives on teaching languages and literacies to school practices. This study builds on a workshop series about embodied and arts-integrated languages and literacies education implemented in primary teacher education in Finland. Engaging with posthumanist and rhizomatic theories, the study explored becoming-teachers' diffractions of opportunities and challenges in using embodied and arts-integrated teaching approaches in languages and literacies education. The study was methodologically conducted as arts-based research, specifically by creating poems with data as an analytical approach. The opportunities and challenges created friction between each other and became intertwined as opportunities-and-challenges. As such, the becoming-teachers recognized their value and adopted a critical perspective on the teaching approaches. Illustrated with four poems, the analysis indicates that the becoming-teachers' engagement with these approaches set in motion thoughts about opportunities-and-challenges concerning (un)learning conceptions of teaching and learning languages and literacies; balancing pedagogical acts and realities; the friction of differentiating the teaching; and a mixture of (un)certainties regarding future teaching practices. In conclusion, implications for languages and literacies education, as well as teacher education, are discussed.

Keywords: language education; literacy education; embodied learning; arts integration; primary teacher education; arts-based research; posthumanism; rhizome

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Introduction

Teacher education plays an important role in preparing student teachers to understand and teach languages and literacies (e.g., Bomer et al., 2019; Kanakri, 2017; Maloch & Dávila, 2019). In Finland, teacher education is research-based, and its research orientation is important for supporting student teachers' future professional actions (Hansén et al., 2015; Malinen et al., 2012). To integrate teaching and research into teacher education, we introduced embodied and arts-integrated languages and literacies education in primary teacher education at Åbo Akademi University (ÅAU), Finland.

The interest in studying embodied approaches to language education increased toward the end of the 2010s (e.g., Guerrettaz et al., 2022; Sila & Lenard, 2020). Research shows that they can promote language skills and add emotional and motivational benefits to language learning (Jusslin et al., 2022). Likewise, research attention to literacies as embodied processes has increased in the 21st century, with researchers acknowledging how literacies are produced in and by bodies (e.g., Johnson & Kontovourki, 2015; Leander & Boldt, 2012; Thiele, 2015). Moreover, research in arts-integrated languages and literacies education—where languages and/or literacies are integrated with the use of an art form, such as music or dance—is another trend gaining recognition (e.g., Jusslin, 2022; Korpinen & Anttila, 2022; Makopoulou et al., 2021; Sharma et al., 2023). Previous research on these topics stresses that teacher education can act as a catalyst for renewing educational practices, and researchers have called for more research in teacher education (Buck & Snook, 2020; Guerrettaz et al., 2022; Jusslin et al., 2022; Møller-Skau & Lindstøl, 2022; Sanz-Camarero et al., 2023).

We implemented a workshop series across language and arts education courses at ÅAU. The embodied and arts-integrated teaching approaches introduced were new to nearly all students. Throughout the workshops, they discussed the opportunities and challenges associated with using embodied and arts-integrated teaching themselves. They often revisited their previous experiences of studying languages and literacies in school, which we perceived as their understandings and practices—or "toolboxes" (Lenz Taguchi, 2007)—of what languages and literacies are, as well as how they should and could be taught. Researchers have discussed the potential benefits and risks of relying on previous school experiences and beliefs about learning when becoming a teacher (e.g., Bomer et al., 2019; Darling-Hammond, 2014; Morgan & Pytash, 2014). However, we agree with Lenz Taguchi (2007), who stated that students do "not come here [teacher education] with an empty toolbox needing to be filled with educational theories and methods, but rather with a toolbox already filled (and continuously refilling itself), with tools needing to be unpacked, investigated, and reformulated" (p. 279). In the workshops, we strove to unpack and reformulate such tools collaboratively.

When the students discussed and wrote about the workshops' contents, their embodied participation in the workshops, the associated theoretical perspectives, their previous school experiences, and their conceptions of themselves as future teachers affected each other. We understand this as diffraction to emphasize that these insights are being read through to one another (Barad, 2007; Haraway, 1992; Moxnes & Osgood, 2018). Additionally, we refer to the student teachers as becoming-teachers, which emphasizes a nonlinear perspective of be(com)ing and growing as a teacher, always transforming, never actually ready (Adams, 2021; Deleuze & Guattari, 2013; Strom & Martin, 2017). These concepts derive from

posthumanist and rhizomatic theories, which we discuss in the next chapter. The becoming-teachers' diffractions of opportunities and challenges caught our attention, and in this article, we study them in-depth. More specifically, this study aims to explore the becoming-teachers' diffractions of opportunities and challenges in using embodied and arts-integrated teaching approaches in languages and literacies education. Our analytic questions were: What did engagement in embodied and arts-integrated languages and literacies education set in motion for the becoming-teachers? What opportunities and challenges did such teaching approaches enable them to think?

2 Theoretical engagements

This study engages with posthumanist (Barad, 2007; Haraway, 1992) and rhizomatic (Deleuze & Guattari, 2013) theories, which align with a relational ontology, and stresses how students, educational realities, and knowledges are constantly produced in relations to each other. Next, we unpack the notions of diffraction and becoming-teachers in the context of teacher education and our understanding of an embodied approach to languages and literacies.

2.1 Diffraction in teacher education

Recently, researchers working with posthumanist theories have explored and elaborated on diffraction in teacher education. The notion of *diffraction* was first proposed by Haraway (1992) as an alternative to reflection, suggesting that "diffraction does not produce 'the same' displaced, as reflection and refraction do" (p. 300). She used diffraction as a metaphor for making a difference in the world, and this metaphor has been applied as an alternative to reflection in teacher education (Lambert, 2021; Lanas et al., 2017; Moxnes & Osgood, 2018). While many researchers have highlighted the importance of reflection—both individual and collective—in teacher education, the concept has been subject to some critique, partly because there is no shared consensus on how reflection should be theorized or conceptualized (e.g., Beauchamp, 2015; Collin et al., 2013; Kinsella, 2008; Leigh & Bailey, 2013; Mälkki, 2011). In historicizing the term reflection, Fendler (2003) stated that reflection "has become a catchall term" (p. 20) and argued that a major criticism is that reflection seems to reinforce existing beliefs instead of challenging them. In a more recent literature review, Beauchamp (2015) noted that several researchers have questioned whether reflection in teacher education improves professional practice. However, a key reason for our engagement with diffraction is that reflection has mostly been understood as a cognitive, disembodied process (Beuchamp, 2015; Hill, 2017; Lambert, 2021; Mälkki, 2011). Researchers have argued for an embodied understanding of reflection that encompasses emotions and in which the mind and body are seen as integrated (Erlandson, 2006; Kinsella, 2008; Leigh & Bailey, 2013; Mälkki, 2011; Mälkki et al., 2022). Such an understanding resonates with the relational and embodied approach underpinning the current study, yet from other philosophical perspectives (e.g., phenomenology and transformative learning).

Haraway's (1992) notion of diffraction offers a way to understand how diffraction produces differences. She stated that "diffraction is a mapping of interference, not a replication, reflection, and reproduction. A diffraction pattern

does not map where differences appear, but rather maps where the *effects* of differences appear" (Haraway, 1992, p. 300, original emphasis). As such, our analytical interest lies in attending to where the effects of differences appear in the becoming-teachers' diffractions of opportunities and challenges. Moreover, Barad (2007, 2014) took the notion of diffraction further by proposing it as a methodology, still echoing Haraway's emphasis on how differences are made in our knowledge-making practices and what the effects of differences are. A diffractive methodological approach refers to reading insights (e.g., theories and data) through one another and responding to the relations and effects of differences. It can be metaphorically explained as waves of water, sound, or light that "combine when they overlap and the apparent bending and spreading out of waves when they encounter an obstruction" (Barad, 2007, p. 28).

The theoretical notion of diffraction has been put to work in different ways in teacher education research, with researchers discussing frictions between diffraction and reflection. Lambert (2021) stated that, "as a predominantly cognitive and linear practice, reflection is disconnected from the affective and material encounters that are valuable ways of engaging with the complex, relational, multiplicitous, and non-linear encounters that make up contemporary teaching" (pp. 421–422). She suggested that diffraction offers ways to read teaching practices through, for example, theories, policies, memories, and sensory responses, acknowledging its emergence from messy, embodied, and material encounters of teaching. Lanas et al. (2017) explored theoretical reflections in teacher education, which led them to realize that there are, instead, theoretical diffractions. They noted that a diffractive approach enabled the teacher educators to re-evaluate their frustration with students' disinterest in theory as their insufficient means of recognizing diffractions of theory. Further, Moxnes and Osgood (2018) argued that "diffractive thinking holds greater potential to explore unforeseen, not-yet-known possibilities than critical reflection allows for" (p. 298), suggesting that diffraction has the potential to expand and change views on professionalism in teacher education. Aligning with this body of research, we argue that diffraction, as thinking insights through one another, provides an intriguing alternative to reflection, especially as it emphasizes embodiment, sensory responses, and non-linearity in teacher education.

Our theoretical movement toward diffraction was fueled by a curiosity about, and a sensation of, something more-than-reflection happening during and after the workshops. The workshops' contents shook the becoming-teachers' understandings of how languages and literacies can be taught. The becoming-teachers' insights from the embodied participation in the workshops, the discussions of theoretical perspectives, their previous personal school experiences, and future teaching profession became diffracted and read through one another. When these aspects became diffracted, they overlapped, bent, and spread in new ways and formed patterns of difference (Barad, 2007; Bozalek & Murris, 2022) regarding opportunities and challenges in embodied and arts-integrated languages and literacies education.

2.2 Becoming-teachers in teacher education

A multitude of concepts have been used when referring to the development of teachers in initial teacher education and teaching practices—such as the notions of professional learning and professional development and the labels of pre-service teachers, student teachers, teacher candidates, and in-service teachers. The field has been described as conceptually contested (Adams, 2021; Olin et al., 2020). Researchers have critiqued the labels with, for example, Adams (2021) arguing that they unsuccessfully convey teachers' temporal and discursive complexities. She maintained that "linearity permeates models of professional teacher preparation and reinforces the idea that teaching is a matter of reproduction and replication, 'a copying or tracing of the already-known'" (Adams, 2021, p. 392). Aligning with this critique, we use the notion of *becoming-teacher*, as elaborated by researchers working with Deleuze and Guattari's (2013) rhizomatic theory. For example, in their conceptualization of becoming-teacher, Strom and Martin (2017) argued that rhizomatic theory provides a more nuanced perspective on the learning that takes place in teacher education, suggesting that the notion of becoming-teacher permeates an "ongoing view of transformation that is non-linear, non-directional, and never quite actualized" (pp. 8–9). *Becoming* is a core concept of Deleuze and Guattari (2013), pointing toward a rhizomatic process of constantly shifting and changing. The concept is closely connected to the *rhizome,* which, in nature, refers to a tuber growing unpredictably, shooting lines in different directions. The rhizome rejects linearity, hierarchies, and dualisms, and it can have multiple entry and exit points. Its focus lies on both/and instead of either/or. As a rhizomatic process, becoming has neither beginning nor end.

In relation to teacher education, this rhizomatic understanding suggests that there is no departure or arrival—one is never "finished" as a teacher—because it is an ongoing, never-ending, always changing rhizomatic process (Adams, 2021; Deleuze & Guattari, 2013; Marble, 2012; Strom & Martin, 2017). Deleuze and Guattari (2013) maintained that "becoming is certainly not imitating, or identifying with something… Becoming is a verb with a consistency all its own" (p. 279). Hence, becoming-teachers do not imitate or reproduce what they learn about teaching languages and literacies in teacher education, but become with it. Strom and Martin (2017) argued that becoming-teacher involves relational, contextual, and collective processes. In this study, the workshop series provided a specific context in which relations between humans, materialities, actions, and events functioned collectively. The processes of becoming were profoundly related to unpacking understandings of how languages and literacies can be understood and taught.

2.3 An embodied understanding of languages and literacies

Posthumanist and rhizomatic theories contribute to an understanding that languages and literacies are distributed across humans, spaces, and materials (Toohey et al., 2020), thus radically shifting how languages and literacies have long been understood. These theories highlight that languages entail more than abstract systems to be acquired, and literacies entail more than merely reading

and writing alphabetic text1 (Kuby, 2017; Leander & Boldt, 2012; Pennycook, 2016). The use of these theories is more recent in research on applied linguistics and language education (e.g., Bangou et al., 2020; Ennser-Kananen & Saarinen, 2023; Pennycook, 2016; Toohey, 2019; Toohey et al., 2020) in comparison to literacies research (e.g., Ehret et al., 2016; Kuby et al., 2015; Leander & Boldt, 2012; Leander & Rowe, 2006), where the theories have already been used for some time. Therefore, applied linguists and language education researchers often draw inspiration from the closely related literacies field (Bangou & Waterhouse, 2021).

This study turns interest toward how learning languages and literacies is embodied, with two important points of departure. First, grounded in the rejection of the mind being separate and superior to the body (e.g., Barad, 2007), we understand bodies as the ontological sites of becoming and knowing in doing, learning, and teaching languages and literacies. This understanding resonates with MacLure's (2013a) statement that "language is in and of the body; always issuing from the body; being impeded by the body; affecting other bodies" (p. 663). Second, embodied learning is not restricted to visible, physical movements, but equally entails doings such as thinking, feeling, and sensing (Anttila, 2018; Jusslin et al., 2022; Ulmer, 2015; Zhang, 2022). With this emphasis on the body, attention is turned toward the processes and changes in bodies that always exist in relation to other bodies, human and non-human bodies alike (Anttila, 2018; Johnson & Kontovourki, 2015; Schmidt & Beucher, 2018; Thiele, 2015). As such, learning languages and literacies are embodied processes (Johnson & Kontovourki, 2015; Leander & Boldt, 2012; Lenters, 2016; MacLure, 2013a; Toohey et al., 2020) —an understanding that fueled our work in the workshops.

3 Previous research on embodied and arts-integrated languages and literacies education

Previous research has highlighted the various benefits of the embodied teaching of languages (Jusslin et al., 2022). In teacher education2, Guerrettaz et al. (2022) implemented a language teacher education pedagogy of embodiment and found that it could increase preservice teachers' empathy toward English language learners. Zhang (2022) indicated that embodied approaches can support linguistically and culturally diverse preservice teachers in grappling with disciplinary knowledge during their teacher education. In a recent literature review on embodied learning and teaching approaches in language education, Jusslin et al. (2022) revealed that arts-based activities (drama and dance) can generate subjective language learning experiences, facilitate peer scaffolding, and yield emotional and motivational benefits. Given these promising gains, our study focused on embodied learning through arts integration.

Arts integration presents novel opportunities for teaching a subject in combination with an art form, striving for co-equal emphasis on all included subjects (Bresler, 1995; Buck & Snook, 2020; Höglund & Jusslin, 2023; Sanz-Camarero et al., 2023; Svendler Nielsen, Samuel, Vadim et al., 2020). Arts integration is by no means new (Sanz-Camarero et al., 2023), but it remains an

1 There are also other theoretical orientations that share this understanding (e.g., a social semiotic approach to multimodality; Kress, 2010).

2 In reviewing previous research, we use the concepts that the researchers themselves use to refer to what we understand as becoming-teachers.

unfamiliar approach in educational practices. Also, student teachers often have a limited background and lack confidence in the arts (Møller-Skau & Lindstøl, 2022). Consequently, researchers have argued that teacher education plays a vital role in introducing arts integration to future teachers (Buck & Snook, 2020; Jusslin, 2020; Sanz-Camarero et al., 2023). Møller-Skau and Lindstøl (2022) reviewed research on arts-based learning and teaching in teacher education—including studies about arts integration—and found that student teachers' learning is characterized by emotional turns, often starting with skepticism, nervousness, fear, and uncertainty, which transform into excitement, joy, and appreciation. Participation in arts-based teaching can develop skills and confidence, empowering student teachers with the ability and desire to use arts-based teaching themselves while simultaneously recognizing the challenges afforded by external conditions (e.g., lack of time). However, researchers also recognize the risk that knowledge gained about the arts in teacher education will not be brought to future teaching practices (e.g., Bamford, 2006). Buck and Snook (2020) stressed, that for arts integration to gain a foothold in school, it needs to be driven by generalist teachers. This rationale guided the implementation of the workshops in primary teacher education, in which we worked on integrating dancing3 with languages and literacies.

Previous research has shown that dance can support children's reading skills and comprehension (Keinänen et al., 2000; Makopoulou et al., 2021; McMahon et al., 2003), oral language skills (Greenfader & Brouilette, 2017), and phonological awareness and vocabulary learning (Sila & Lenard, 2020). It has also been demonstrated to have positive effects on reading for children with special needs (Sharma et al., 2023). While these studies focus on language and literacy skills, studies applying posthumanist and sociomaterial perspectives have suggested that dance can broaden and deepen reading and writing processes (Jusslin & Höglund, 2021), become entangled with reading and writing (Jusslin, 2020, 2022), contribute to supporting dialogues and exploring alternative ways of communicating (Korpinen & Anttila, 2022), and activate children in languaging through exploring words, phrases, complex verbal constructions, and developing a sense of grammar (Korpinen, 2024). Students also experience embodied and arts-integrated teaching of languages and literacies as more enjoyable than "conventional" teaching methods (Jusslin & Forsberg, 2021; Sila & Lenard, 2020).

In several studies discussed above, the teaching was implemented by a dance teacher or in collaboration between dance teachers and primary school teachers (Jusslin, 2020; Jusslin & Forsberg, 2021; Jusslin & Höglund, 2021; Korpinen, 2024; Korpinen & Anttila, 2022; McMahon et al., 2003; Sharma et al., 2023; Sila & Lenard, 2020). However, the argument for sustainable arts integration is ideally that generalist teachers should be able to teach the lessons themselves (Buck & Snook, 2020). Dance teaching is often unfamiliar—even expressed as uncomfortable—to generalist teachers (e.g., Zhang et al., 2021), and researchers have argued for the value of multi-professional collaboration where teachers and artists can benefit

3 Dance is a culturally shaped art form that uses the body and its movements to perform cultural knowledge, emotions, and belief systems (Sklar, 1991). It is a historically and geographically embedded activity and, as such, can take various forms and styles. Dancing is not only about learning steps or a particular technique. It neither means solely performing to an audience (Koff, 2021). Noë (2015) describes dancing as a "spontaneous physical response to rhythm, or to music, or to movement […] We display our sensitivity to what we hear, or to what our partner is doing, or to what we are doing or have done in our movements" (p. 11).

from each other's personal expertise (Cun, 2024; Jusslin & Østern, 2020; Korpinen & Anttila, 2023). The fact that dance is not an independent school subject in Finland often leads to a discussion about the available resources, especially regarding external artists and teachers. Other challenges mentioned in the research literature are allocated time (for planning and teaching) and available spaces (Buck & Snook, 2020; Jusslin, 2020; Jusslin & Østern, 2020; Møller-Skau & Lindstøl, 2022; Sharma et al., 2023; Svendler Nielsen & Vedel, 2021). Researchers have acknowledged that, despite careful planning, it is impossible to foresee how learning processes will unfold, and that teachers are challenged by the unpredictable and open-ended learning processes in arts-integrated teaching (Höglund & Jusslin, 2023; Møller-Skau & Lindstøl, 2022; Waterhouse, 2021; Wiebe et al., 2007).

Taken together, the research literature addresses several opportunities and challenges regarding embodied and arts-integrated languages and literacies education. However, more knowledge is needed about becoming-teachers' encounters with such teaching approaches, particularly concerning languages and literacies education, which is an understudied area. Such knowledge is imperative if teacher education is to act as a catalyst in renewing language and literacies educational practices.

4 Methodological engagements

We engaged methodologically in arts-based research (ABR; Leavy, 2018), which has recently attracted increased attention within applied linguistic research (Bradley & Harvey, 2019). We actively used different art forms in both the processes and products of our teaching and research, such as dance and visual arts, during teaching and poetry in our analysis and reporting of the study. Our ABR approach is further positioned within a performative research paradigm (Bolt, 2016; Haseman, 2006; Østern et al., 2023), which aligns ontologically with the theories that we engage with in this study. The performative approach helps us understand that doing research entails the creation of something new that would not exist without our involvement as researchers, teacher educators, and artists (Østern et a., 2023). Our research was practice-led, and the focus of this study emerged from our engagement in the workshops and with the data.

4.1 The structure and contents of the workshop series

The study was conducted within the research project *Embodied Language Learning through the Arts* (ELLA; 2021–2024). The workshop series was initiated by Sofia (author 1), who works in teacher education at the Swedish-speaking university, ÅAU. She invited ELLA members to collaborate in the workshops, which aimed to build on previous and ongoing research in the ELLA project and create opportunities for becoming-teachers to learn about, participate in, and experience embodied and arts-integrated languages and literacies education. After having assembled the ELLA team, Sofia invited teacher educators at ÅAU to collaborate with them in implementing the workshop series across courses in the primary teacher education program in the spring of 2023. Figure 1 presents the team that implemented the workshops.

WORKSHOP SERIES TEAM					
ELLA team members				ÅAU teacher educators	
Sofia Jusslin (author 1)	Kaisa Korpinen (author 2)	Riina Hannuksela (author 3)	Charlotte Svendler Nielsen (author 4)	Marina Bendtsen	Johan Vikström
Ed.D., Docent (Associate Professor) in Literacy Education; and University Lecturer in Swedish (L1) and literature education, Åbo Akademi University	Doctoral Researcher in Language Education, University of Turku	Dance artist and Doctoral Researcher in Dance, University of the Arts Helsinki	PhD, Associate professor in educational studies focusing on embodiment, culture, and creativity, University of Copenhagen	PhD, University Lecturer in Foreign Language Education, Åbo Akademi University	University Teacher in Visual Art Education, Åbo Akademi University, and Upper Secondary School Teacher in Visual Arts, Vasa övningsskola

Figure 1. Overview of the team teaching the workshop series

The team collaboratively planned the workshop series (Table 1), which started with a video lecture that presented a literature review on embodied learning and teaching approaches in language education (Jusslin et al., 2022). Three practical workshops were then held within mandatory courses in primary teacher education. All workshops were held in a drama room.

Table 1. Overview of the workshops.

Course	**Teacher educators**	**Content**	**Language of instruction**
Pre-school and primary level education	Sofia	Video lecture about embodied language learning	Swedish
Didactics in visual art education	Charlotte Sofia Johan	Workshop I on embodied and arts-integrated pedagogy (dance and visual arts) with a focus on conceptual learning	Danish (and Swedish)
Pre-school and primary level education	Sofia	Workshop II on arts integration (dance) in early literacy education in theory and practice	Swedish
Language didactics for class teachers	Kaisa Riina Sofia Marina	Workshop III on arts integration (dance) in (early) language learning	Finnish (and Swedish)

Workshop I introduced embodied and arts-integrated pedagogy, focusing on dance, visual arts, and conceptual learning, and was conducted by Charlotte in collaboration with Johan and Sofia. Figure 2 presents visual examples from the workshop (examples 2.1–2.6). Five central elements of embodied and arts-integrated pedagogy (Svendler Nielsen, Samuel, Wilson et al., 2020) were incorporated, drawing inspiration from dance pedagogy (Smith-Autard, 1994): warm-up, theme exploration, product composition based on the theme, presentation/performance, and appreciation and reflection (example 2.2). The warm-up involved moving various body parts while naming them in Danish and Swedish, and exploring choreographic and visual devices (example 2.4) in pairs (examples 2.3 and 2.6). The exploration element featured an obstacle course (e.g., chairs and tables). First, the becoming-teachers moved individually along the obstacles, exploring prepositions verbally and bodily (e.g., over). Second, the pairs moved together along the course (example 2.1). Third, while one becoming-teacher moved along the course, their pair drew lines of the moving person on a long piece of paper beside the course (example 2.5). Fourth, based on a reflective exercise, the becoming-teachers wrote words and drew pictures on the paper. The composition element included creating movement phrases of three selected words/drawings in groups. In the performance element, the groups performed their phrases. Finally, the becoming-teachers discussed their experiences and observations from the workshop.

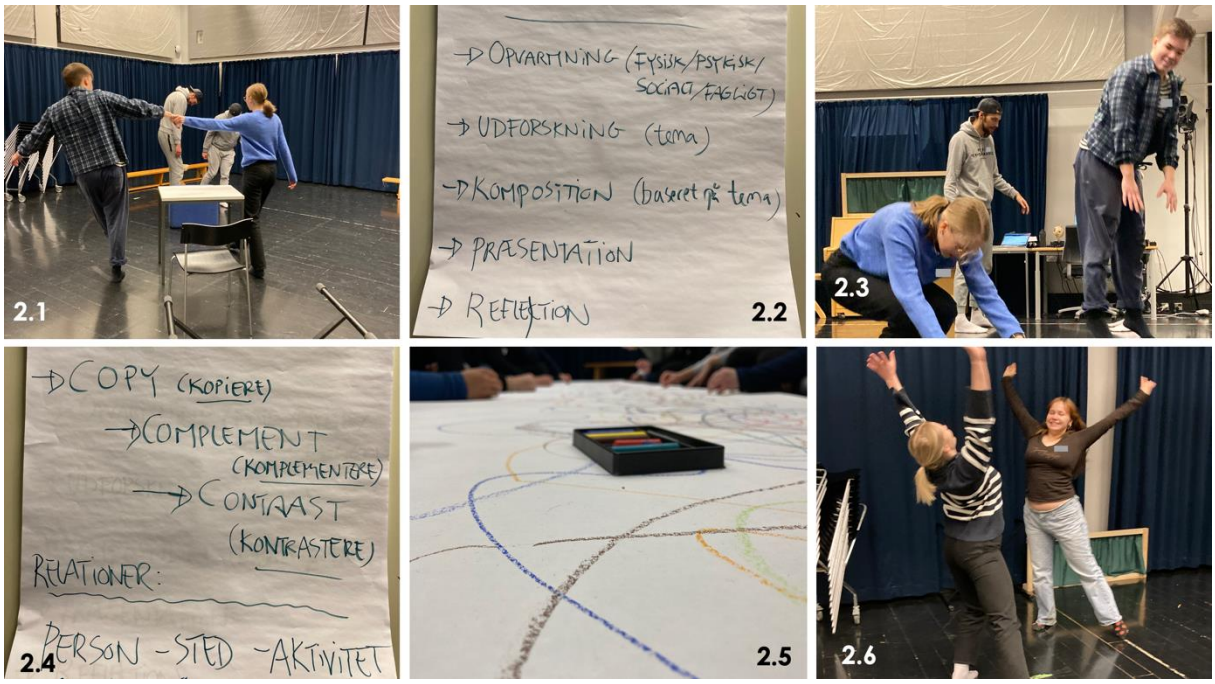

Figure 2. Examples of activities from workshop I

Workshop II focused on integrating dancing and early literacy, building on activities that Sofia had implemented with six-year-olds within another ELLA subproject, together with a dance teacher and a pre-primary schoolteacher[4]. Figure 3 presents examples of some of these activities (examples 3.1–3.4). The first part included various practical activities. The warm-up exercise involved everyone introducing themselves and proposing a movement or statue pose for the first letter of their name and creating an alphabet chain through movements and statues in groups (example 3.4). Next, the becoming-teachers created letter statues with one becoming-teacher as "the artist" and another as "the clay" (example 3.3). After, they improvised movements to letter sounds and words beginning with that letter (e.g., *e* and *elefant* [elephant]) and listened for sounds and wrote letters being danced by others. Finally, they created and performed a group choreography based on words that rhyme (e.g., *katt, hatt* [*cat, hat*]; examples 3.1–3.2). The second part included discussions about the experiences of participating in the workshop, interwoven with a theoretical discussion about arts integration in literacy education.

Figure 3. Examples of activities from workshop II

Workshop III on integrating dancing and early language education drew on Kaisa's and Riina's previously developed teaching practices in ELLA-related projects. The workshops, conducted in collaboration with Marina and Sofia, encompassed instructor-led joint activities, and creative, task-based activities in small groups. Figure 4 illustrates some of the activities (examples 4.1–4.5). The workshops started by introducing oneself to others verbally and with movement and activating the body tactically while naming body parts. The following activities focused on relations between the body, others, and space: moving to music and greeting with body parts (e.g., *Hei polvet, mitä kuuluu?* [Hello, knees,

4 The workshop was planned together with dance teacher Lina Winberg, who had to withdraw from the workshop series before it could be implemented.

how are you?]; example 4.1); changing positions and relations on clap (e.g., *ylhäällä-alhaalla* [up-down]), and enacting a movement composition on spatial relations (e.g., *olen edessä,* [I am in front of you]; example 4.3–4.4). The following creative, task-based activities built upon the verbal elements of the previous exercises and involved creating movement compositions (examples 4.2 and 4.5), photographs, and group statues with theme-related verbal phrases. To end, the becoming-teachers discussed their experiences of the workshop, which combined practical and theoretical perspectives on dance in additional language learning contexts.

Figure 4. Examples of activities from workshop III

As indicated in Table 1, we used different languages of instruction in the workshops to provide various experiences of participating in embodied and arts-integrated languages and literacies education. Charlotte spoke Danish during workshop I, as Danish is a neighboring language to Swedish, and Sofia repeated important instructions and questions in Swedish to aid the becoming-teachers' understanding. In workshop III, Kaisa and Riina spoke Finnish[5] during the activities to provide them with a learner's perspective of embodied language learning, and they intermingled Finnish and Swedish during the workshop introduction and discussion at the end to support comprehension.

4.2 Participating becoming-teachers and data generation

Altogether, 85 becoming-teachers participated in the workshops, and 59 becoming-teachers gave informed consent to participate in the research. This study followed the ethical guidelines of the Finnish Advisory Board on Research

5 The participating becoming-teachers will become certified to teach Finnish in primary education.

Integrity, and the becoming-teachers shown in the visual examples presented above have given their consent for the photographs to be published. The participating becoming-teachers attended different study programs in teacher education: primary teacher education, language immersion primary teacher education, and special education teacher education. Most of the becoming-teachers (52) were studying in their first year of the five-year teacher education, while the rest (7) were in their second or third year of studies or participated in the courses as part of their Master's in education. They participated in one to three workshops. Attendance varied depending on study programs, previously completed courses, and whether they were unable to attend for any reason (e.g., illness). The becoming-teachers were divided into six workshop groups in the courses.

Altogether, 49 becoming-teachers participated in the survey. Examples of survey questions are as follows: What opportunities and challenges do you see with embodied language learning through the arts? If you put yourself in the role of a student participating in embodied language learning through the arts, what do you think teachers need to consider? At the end of each workshop, we documented questions that the becoming-teachers asked about teaching languages and literacies through embodied and arts-integrated approaches. We made memory notes based on our participation in the workshops (Gunnarsson & Bodén, 2021). Our participation in and experiences with the workshops also act as embodied data (Ellingson & Sotirin, 2020). The embodied data include emotional and response data (St. Pierre, 1997); emotional data of our engagement in the workshops and response data include our and the becoming-teachers' responses given throughout the workshop series.

4.3 Creating poetry with data

Our performative, practice-led approach (Østern et al., 2023) indicated that we let the practice and data lead us into how we would work analytically. When reading the data, certain aspects stood out in relation to opportunities and challenges in using embodied and arts-integrated teaching approaches in languages and literacies education. We sensed that the opportunities and challenges created friction in-between each other. They stood out as opportunities-*and*-challenges. There were multiple frictions in the becoming-teachers' diffractions of opportunities-*and*-challenges, which we wanted to give justice to in our analysis. This led us to create poetry with the data.

The use of poetry in research has increased in recent decades and offers an alternative way of analyzing and presenting data (Charteris et al., 2019; Faulkner, 2018; Leavy, 2020; Lupton, 2021). Working with poetry as a method is often referred to as *poetic inquiry* in ABR (Leavy, 2020; Prendergast, 2009, 2020), and posthumanist approaches to poetic inquiry are relatively unexplored, partly because of the humanistic roots of the method (Lupton, 2021; Prendergast, 2020). However, several researchers working with posthumanist theories have created poetry with data, sometimes referring to poetic inquiry (e.g., Lupton, 2021; Müller & Kruger, 2022; Wallace et al., 2021), poem-like writing (Hohti, 2016), poetry as diffractive research (McKnight 2020), or simply as poetry (Charteris et al., 2019). We recognize that poetry as an art form resonates well with the theories with which we engage, partly because of its relational and embodied connections and its potential to voice fluid and multiple meanings. Creating poetry offers an

approach to discovery, analysis, and presenting the analysis, in which multiple diffractions are at play. As such, poetry constitutes our analytical process and the product of the ABR (Faulkner, 2018; Østern, 2017).

Our analysis was collaboratively performed through experimenting with the data, intrigued by our initial sensation of opportunities-*and*-challenges. We read the data multiple times and discussed aspects that had glowed and awakened a sense of wonder in our readings. These glowing aspects are moments of *wonder* that stood out in the data (MacLure, 2013a, 2013b). In our discussions about moments of wonder, we had "chosen something that has chosen [us], and it is that mutual 'affection' that constitutes 'us' as, respectively, data and researcher[s]" (MacLure, 2013b, p. 229). Through our discussions and with fuel from the analytic questions, four perspectives awakened a sense of wonder and were developed into four poems.

Multiple languages were at play in the analysis. Most of the data (surveys and questions from workshops) were in Swedish, but the shared language in the author group was English (all could read and understand Swedish). This meant that the analytical work occurred across Swedish and English. When reading the data, certain words (e.g., *kreativitet* [creativity]), phrases (e.g., *rätt eller fel* [right or wrong]), or metaphors (e.g., *toppen av isberget* [the tip of the iceberg]) expressed by the becoming-teachers stood out, and some phrases were impossible to translate verbatim to English without losing the meaning. We used these glowing aspects of the data, but we did not create "found poetry" (e.g., Faulkner, 2018) using only the words of the becoming-teachers. Since we, as embodied researchers, teachers, and artists, are part of the data (Østern et al., 2023), we are neither outside nor inside of the becoming-teachers' diffractions, but we are "*of* the diffractive pattern" (Barad, 2014, p. 181; original emphasis). Therefore, we experimented with and translated data and developed it poetically (e.g., *skräckblandad förtjusning* became *blended with fright and delight*) to voice the fluid and multiple meanings of the opportunities-*and*-challenges.

We wrote the poems in English, a challenging process since English is an additional language of ours. This led us to use thesauruses, dictionaries, and ChatGPT to find suitable words, synonyms, antonyms, phrases, rhythms, metaphors, and idioms in English (cf. Leavy, 2020). In the creation of the four poems, we (Sofia, Kaisa, and Riina) wrote individually and collaboratively, engaging in read-aloud of the poems "to look, feel, and listen for rhythm, shared meaning, and significant moments" (Wallace et al., 2021, p. 413). Charlotte and our English-speaking ELLA colleague, Rose Martin, acted as constructive readers of the poems, helping us develop them.

5 Opportunities-*and*-challenges

Next, we present four poems and related analytical discussions. In response to the analytic questions, the becoming-teachers' engagement in embodied and arts-integrated languages and literacies education set in motion thoughts about opportunities-*and*-challenges in four aspects: (un)learning conceptions of teaching and learning languages and literacies; balancing pedagogical acts and realities; the friction of differentiating the teaching; and a mixture of (un)certainties for future teaching practices.

5.1 (Un)learning conceptions of teaching and learning languages and literacies

Yes, but...

Diving deeper into language
Creating actively with it
Sensing words, grasping meanings
Getting into language, getting it
when on the move

But, zooming in on language
working mechanically
with what is written, what is abstract
while sitting still,
isn't that also needed?

Remembering better
through experiencing with the body
Not as serious,
still efficient and inspiring
when learning is embodied

But, forgetting language
when involving the body?
Just for fun,
only fun
with the body?

Playfully
twist and turn the words
Let language loose
in the realm of play
Learning in disguise

But, only playful?
Words, letters, sounds
hidden in the shadows
Does play cast a grander light,
not language?

There's no right or wrong
Children might flourish
with the freedom to
show their knowledge
with more than words

But, there's no right or wrong
and if there's neither right,
or wrong:
What do we assess?
How do we evaluate?

Liberating for children
Communicating together
with bodies, movements, arts
Outlets for imagination
Unleashing creativity

But, chaotic for children
Fleeing concentration
Standing in the spotlight
Will everybody muster the bravery
to communicate openly?

The becoming-teachers seemed to (re)formulate their conceptions of teaching and learning languages and literacies. Such a (re)formulation was an effect of diffracting their previous experiences of participating in languages and literacies education with their embodied engagement in the workshops, the related theoretical perspectives, and their future teaching profession. In a way, they engaged in processes of (*un)learning* (Zhao & Murris, 2022), both shaking off previous and creating new understandings and experiences of languages and literacies education. More specifically, learning new ways to teach and understand languages and literacies encouraged and required some degree of unlearning of what languages and literacies are and how they can be taught. In relation to such (un)learning, participation in the workshops gave rise to several opportunities, such as an embodied understanding of languages and literacies and playful approaches. However, the opportunities were permeated by an articulated cautious undertone indicated by the questions in the "Yes, but..." poem. For example, the becoming-teachers found the open-ended approach with neither right nor wrong as an opportunity for creativity, imagination, and liberty, but also a challenge for assessment and evaluation of languages and literacies. As such, (un)learning conceptions of teaching and learning languages and literacies emphasized a both/and perspective regarding the opportunities-*and*-challenges; the becoming-teachers appreciated the opportunities that embodied and arts-integrated teaching can bring to languages and literacies education, while simultaneously considering related challenges.

5.2 Balancing pedagogical acts and realities

Matters of concern

I.
A need for structures
and instructions crystal clear.
Sufficient guidance.

Creativity?
And not too strict instructions.
Create a balance.

II.
Moving as teacher,
together with the students,
not as outsider.

Entangled in mess,
sensing the undercurrents.
Trusting the process.

III.
Build, seek, and create
a safe and supportive space,
let everyone thrive.

Small, tiny classrooms,
with desks, chairs, many students.
No space for dancing.

IV.
The planning takes time,
consumes energy and time.
Do I have the time?

Let teaching take time.
We flourish, learn, grow, with time.
I can make the time.

The becoming-teachers voiced several matters of concern regarding the school contexts where embodied and arts-integrated languages and literacies education would be conducted. Diffractive patterns were created when their new insights from participating in the workshops were read in relation to their future teaching practices. Their concerns involved dealing with the pedagogical realities regarding instructions, teacher roles, and spatial and temporal aspects. For example, the becoming-teachers emphasized the need for providing clear instructions. This was required to ensure that the children knew what to do and what was expected when languages and literacies were taught in new ways. Simultaneously, the instructions should not be too strict because of the risk of

limiting children's creativity. Dealing with the pedagogical realities also involved the becoming-teachers acknowledging how stressful working in school can be—a recent discussion in Finnish media. They wondered how and if these teaching approaches would work within the current pedagogical realities in schools. For example, planning embodied and arts-integrated teaching was experienced as time-consuming but still seen as worthwhile due to the opportunities that the teaching approaches can bring. Taken together, dealing with the pedagogical realities calls for *balancing pedagogical acts and realities* to be able to enact embodied and arts-integrated languages and literacies education.

5.3 The frictions of differentiating teaching

For all of you?

In the air, a hesitation lingers.
To act or refrain?

My toolbox includes:
- alternatives and modifications; options to choose from
- no expectation that everyone can or will do the same
- body-neutral language
- artfulness, excluding right and wrong

I seek to offer something suitable for you, and for you, and you.
But does this still work for all of you?

A crucial matter for the becoming-teachers was *differentiation*[6] and how embodied and arts-integrated teaching of languages and literacies could be done to include all children. This matter arose as an effect of diffracting their embodied participation in the workshops, the associated theoretical discussions about the teaching approaches, and their future roles as teachers. Notably, differentiation was imbued by *frictions*. On the one hand, the becoming-teachers experienced that differentiation was easily achieved with dance in allowing everybody to participate based on their own bodies and abilities. On the other hand, the becoming-teachers acknowledged that children have different knowledge and skills in languages and literacies. They wondered how they could differentiate teaching to reach all children, regardless of their skills and levels in languages and literacies. Another friction was evident in relation to inclusion. The becoming-teachers acknowledged the imperative to include all, regardless of background, physical or cognitive abilities, or interests. While inclusion was deemed achievable in these teaching approaches, concerns simultaneously surfaced regarding how to include children using assistive devices (e.g., wheelchair, communication aids) when the teaching builds largely on movements. For instance, during the workshops, the example of including

6 Differentiation recognizes the multiplicity of students within a class and adapts the teaching to students' individual needs and levels, so that all students can participate in the teaching (Lindner & Schwab, 2020).

children using wheelchairs in the teaching was (un)folded and (re)formulated with examples from the teacher educators' teaching practices (e.g., using body-neutral language of saying *move slow* or *fast* instead of *walk* or *run*). Thus, differentiation stood out as a simultaneous opportunity-*and*-challenge in several ways.

5.4 A mixture of (un)certainties for future teaching practices

a whole new world

feelings
blended with fright and delight
never experienced
never tried
never even heard of

it's easy to revert to
what I learned in school
what I have tried before
what I'm already familiar with
but this is
    a whole new world
    the tip of the iceberg

feelings
of excitement and discomfort and inspiration
of skepticism dissolved
    feelings blended with fright and delight

I want to teach like this in the future
pedagogical tools have been presented to me
    but my knowledge falls short
    the uncharted territory of teaching dance
    can I accomplish this alone?
I want to teach like this in the future

what does it take?
if not courage and belief and engagement
    all it takes
    my own will
    give it a chance

feelings blended with fright and delight
    a whole new world
    the tip of the iceberg

The becoming-teachers diffracted their past school experiences, their present doings in the workshops, and their future teaching practices in relation to languages and literacies education. The workshops seemed to contribute to creating *(un)certainties* among the becoming-teachers. Several emotional aspects

were at play when imagining themselves teaching in embodied and arts-integrated ways in the future. The teaching approaches introduced were new, inspiring, radical, even weird and uncomfortable for some. A whole new world had unfolded before the becoming-teachers, but they perceived that their knowledge was confined to a mere fraction of the vast knowledge about embodied and arts-integrated teaching. They expressed certainty since many of the becoming-teachers were excited about the teaching approaches and said that they want to teach languages and literacies in such ways in the future. However, they also expressed uncertainty since many simultaneously felt caution and doubted whether they could accomplish the teaching. As such, imagining themselves as future teachers of embodied and arts-integrated languages and literacies education involved a mixture of (un)certainties.

6 Discussion

In this study, we have explored becoming-teachers' diffractions of opportunities-*and*-challenges in using embodied and arts-integrated teaching approaches in languages and literacies education. The analysis indicated that the becoming-teachers simultaneously recognized the value of and adopted a critical perspective on the teaching approaches. Although it is advantageous that the becoming-teachers saw the potential of the teaching approaches, critically scrutinizing the teaching approaches is equally crucial for their future teaching practices. Most of the opportunities-*and*-challenges have surfaced in previous research in teacher education and school practices. For example, echoing previous research, the becoming-teachers experienced emotional turns (Møller-Skau & Lindstøl, 2022), considered how to deal with temporal and spatial aspects of the teaching (e.g., Buck & Snook, 2020; Jusslin, 2020; Møller-Skau & Lindstøl, 2022; Sharma et al., 2023), and recognized that planning and instructions need to be simultaneously open and structured (Höglund & Jusslin, 2023; Møller-Skau & Lindstøl, 2022; Waterhouse, 2021; Wiebe et al., 2007).

Adding new insights to this body of research, the current study contributes knowledge of how participation in embodied and arts-integrated teaching sets in motion new conceptions of languages and literacies as embodied processes. It involved processes of (un)learning how languages and literacies can be understood, problematizing a dualistic and hierarchical perspective on mind and body in languages and literacies education (e.g., Toohey et al., 2020). In the workshops, the becoming-teachers personally experienced how languages and literacies happen in, through, and with the body (MacLure, 2013a). Participation in the workshops also set in motion new conceptions of how languages and literacies can be taught and differentiated. The becoming-teachers wanted to use the new practical tools that were introduced to them, but they remained particularly uncertain how to assess and evaluate children's learning because of the open-endedness of the teaching approaches. Also, the becoming-teachers' consideration of differentiation highlights the opportunities-*and*-challenges of inclusion in the teaching, both in terms of varying skills and levels in languages and literacies and children using assistive devices. These results concerning assessment, evaluation, and differentiation point to areas that have not been explicitly explored in previous research on embodied and arts-integrated languages and literacies education. Consequently, there is a need for future research to delve into these aspects.

Given that embodied and arts-integrated languages and literacies education was new to nearly all of the becoming-teachers, we contend that it was especially important that they actively explored the teaching approaches with their own bodies. Merely theoretical information may not have given them a similar understanding of teaching approaches. Accordingly, this study is an example of how combining theory and practice seems to have worked for the becoming-teachers; a combination that previous research has highlighted as challenging (e.g., Darling-Hammond, 2014; Malinen et al., 2012). However, our intention is not to unquestionably endorse the workshop series or the teaching approaches; we must subject them to critical scrutiny. The workshop series was short, connected to already existing learning goals in the three courses, and partly dependent on external resources and teacher educators/researchers from the ELLA research project. A short workshop series can be seen as better than nothing (which the becoming-teachers would otherwise have received regarding this topic), but the becoming-teachers felt that they needed more knowledge—it was the tip of the iceberg. Admittedly, we only scratched the surface, and ideally, we would want to extend the timeline of the workshop series and give the becoming-teachers the possibility to try these teaching approaches with children in practice. Working with children could give them a deeper understanding of the teaching approaches and their respective opportunities-*and*-challenges. Although the workshop series unpacked and reformulated how languages and literacies can be taught, we cannot know whether becoming-teachers fall back on their own school experiences or even use what they have encountered in teacher education in their future teaching practices (e.g., Bamford, 2006; Morgan & Pytash, 2014). Therefore, future studies could research whether and how generalist teachers work with embodied and arts-integrated languages and literacies education. However, our hope is that the becoming-teachers will make the workshops contents their own, become with it. This points to the importance of teacher education introducing and preparing becoming-teachers for new ways of teaching languages and literacies, especially since the becoming-teachers in this study recognized a value in the teaching approaches and wished to teach in such ways in the future.

Consequently, this study has implications for teacher education and its content and structure. These teaching approaches—or any others, for that matter—hinge on teachers developing knowledge about and experience of them, or at the very least, being aware of their existence. Therefore, it is imperative to focus directly on the content addressed in teacher education. If certain content, such as embodied and arts-integrated teaching of languages and literacies, is not addressed in teacher education, it signifies the prioritization of specific—other—knowledge in teacher education and highlights what is worth investing in as a teacher in school. If teacher education is to function as a catalyst for changing pedagogical practices (e.g., Buck & Snook, 2020; Jusslin et al., 2022; Møller-Skau & Lindstøl, 2022; Sanz-Camarero et al., 2023), changes need to happen already in teacher education programs. As previously mentioned, we connected the teaching approaches to existing learning goals in the language and arts courses. However, to establish a solid, sustainable foundation, the course syllabi need to explicitly mention embodied and arts-integrated teaching approaches. We acknowledge the potential risk that implementing these teaching approaches may be confined to specific teacher educators who have personally worked with or researched them. This underscores the importance of teacher educators being given the possibility to learn about and experience this type of teaching. Just as teachers and becoming-teachers can feel uncomfortable and unfamiliar with this type of teaching (e.g.,

Zhang et al., 2021), the same applies to teacher educators. If the goal is that generalist teachers—not only arts teachers—implement these teaching approaches in school (Buck & Snook, 2020), then non-arts teacher educators also play a pivotal role. However, the implementation of embodied and arts-integrated teaching in teacher education can benefit from multiprofessional collaboration that transcends subject boundaries (cf. Cun, 2024; Jusslin & Østern, 2020; Korpinen & Anttila, 2023), aligning with the curricular emphasis on trans-disciplinary teaching in Finland and other countries.

In conclusion, this study contributes knowledge about becoming-teachers' diffractions of opportunities-*and*-challenges in using embodied and arts-integrated teaching approaches in languages and literacies education and presents implications for teacher education. In addition, the study has also contributed insight into how the notion of diffraction can be put to work in teacher education, and we believe that the posthumanist and rhizomatic theories have added value to understanding how becoming-teachers' pasts-presents-futures, from practical and theoretical perspectives, became read through each other in the workshop series. Embodied and arts-integrated teaching is one suggestion of how to do languages and literacies education otherwise, contributing to (re)imagining how the teaching of languages and literacies can be done in new, alternative ways.

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