Duoethnography:
Enriching Experiences in Teacher Education

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Abstract: We employ duoethnography, a conversational method of data collection and analysis, to examine how ongoing dialogue between a new adjunct instructor and a former student, employed for the first time as a classroom teacher, fostered a collaborative, research-oriented culture in Mathematics Education. Duoethnography positions both instructor and student to deepen professional insight into teaching as a way to empower learners and educators. Incorporating duoethnography into action research Education courses could provide pre-service and novice teachers with valuable first-hand instructional experiences. Partnering students for duoethnographic work with clinical coaches, mentor teachers, peers, professors, students, etc., can revitalize teacher preparation programs by complementing traditional autoethnographic approaches with trust-building conversations. Duoethnography encourages meaningful collaboration and practical application, enriching the Teacher Education experience by bridging the gap between theory-oriented coursework and realities of classroom teaching.

Faced with the challenges and successes associated with transitioning from high school Mathematics teaching to becoming an adjunct instructor in a Teacher Education program, Seoyeon (the first author of this article) realized that mere narrative approaches, such as self-reflection or autoethnography, were insufficient to fully capture the depth and subtleties of the transition. A more detailed investigation was needed to analyze past teaching experiences, learn from student reflection on their own coursework, and promote sustained empowerment of students in Teacher Education programs even after graduation. Reflection on her teaching experience sparked in Seoyeon an interest in exploring shared teaching and learning experiences through a collaborative and reflective lens. Interest in collaborative research into her work with students lead Seoyeon to adopt duoethnography as a methodological approach to study her teaching. Duoethnography, a conversational method of data collection and analysis, provides a platform for meaningful reflective, collaborative, and continuous learning by enabling discussions between an instructor and a student (Breault, 2016). Without directly hearing from students about their experiences, instructors often rely on self-reflection, which may not fully capture nuances of student responses to instruction. Motivated by a desire to explore student perspectives on learning experiences in her classes and student progress after completing coursework, Seoyeon initiated a duoethnography with a former student, Liam (the second author of this article), in his first year as a public-school teacher. The guiding research questions for our (Seoyeon and Liam's) study are: 1) How do conversations like the ones in this case study about application of college coursework to classroom practice held between a new adjunct instructor in Teacher Education and a new classroom teacher in Mathematics support mutual improvement in teaching and learning in both pedagogical contexts? 2) How do conversations on teaching experiences between a novice Education instructor and a novice classroom teacher help develop the identity of each as a researcher and as an educator?

Duoethnograpy Is Strong Action Research

Duoethnography's dynamic approach to constructing mutual understanding takes scholarly and scientific studies on duoethnography, not as foundational works upon which to build, but, rather, as voices of rigor to consider in developing and carrying out shared ethnographic

experiments that are optimally informative (Norris & Sawyer, 2012). Dialogic understanding of relevant literature as but one more set of participants in a duoethnographic study expresses duoethnography's deep commitment to *pláticas*, an approach to qualitative research that is conversational in its orientation, iterative in its operation, and cumulative in its findings (Fierros & Bernal, 2016). Use of *pláticas* to collect and interpret data connects duoethnography to the idea of action research, especially as the idea of action research has evolved into more collaborative forms of study, most notably participatory action research (PAR). Unlike traditional research models that draw a hard line between scientists and subjects in a study, PAR involves active collaboration between researchers and participants. For example, use of action research in educational studies has, over the years, demonstrated a growing emphasis on incorporating students' voices into the research process, enriching the meaning and impact of educational improvement (Stoudt et al., 2012; Kemmis & McTaggart, 2000). PAR, in turn, easily connects to CAR (Critical Action Research), action research aimed at addressing systemic inequities and empowering marginalized voices (Esposito & Evans-Winters, 2007). Considering CAR and PAR as related forms of action research highlights the adaptability of action research to serve diverse educational goals — from improvement of classroom practice to instigation of broader social transformation. However, beyond shared aims and activities, *pláticas* and action research also share a deep, principled connection, a connection completed in the idea of duoethnography as a research methodology and a theory of social science.

The idea of action research finds its origins in the work of social-psychologist Kurt Lewin (1946, p. 40). Lewin coined the phrase "action research" when describing the need for a method of social scientific study supportive of "comparative research on the conditions and effects of various forms of social action and research leading to social action" carried out in "a spiral of steps, each of which is composed of a circle of planning, action, and fact-finding about the result of the action"(p. 38). This iterative model of data collection, analysis, assessment, and continuously refined data collection, etc., (Known as the Lewinian spiral.) is a common pattern in action research (Kemmis & McTaggart, 2000). Lewin's untimely death in 1947 due to heart failure left his ideas about action research relatively undeveloped. Commentators have attempted to systematize Lewin's recommendations along two divergent lines: a methodology for social research — the weak version of action research — and a theory of social science — the strong version of action research. Neither the "weak" version nor the "strong" version has achieved full paradigm status, and advocates for weak action research as well as advocates for strong action research have expressed dissatisfaction with the state of the field (Peters and Robinson, 1984). Reason and Bradbury (2001) advise viewing action research both as a methodology that guides how data is collected and interpreted, and as an ideology grounded in democratic values that emphasize promoting individual well-being in a humanistic manner. But an ideology does not a theory make. Dewey (1987/1938) explained the logical difference between ideology and theory by noting that ideologies are value-based and describe a preference for how the world *should* work. Theories, on the other hand, describe how the world *does* work. If we are to have a theory of action research, then, we must get beyond ideological preferences to theoretical reasons for research practice. *Pláticas*, we argue, supplies theory able to support both strong and weak interpretations of action research, resolving the differences between the two types of action research. Duoethnography is the result of using *pláticas* to reconceptualize action research as both a methodology for social research and as a theory of social science.

Action research and *pláticas* already operate on a similar set of methodological principles. Working out the principles of weak action research, that is, action research considered as a

methodology, Bargal (2008, p, 19) derived eight action research principles from Lewin's original remarks about the idea. According to Bargal, action research requires:

1. Systematic study of social problems.

2. A spiral process of
a) collection of data about a social problem,
b) data-guided intervention to solve the social problem,
c) assessment of the results of the intervention, and,
d) when helpful, modification of the intervention.

3. Feedback of the results of intervention to all parties involved in the research.

4. Continuous cooperation between researchers and practitioners.

5. Decision making to be mutual and carried out in public.

6. Taking into account values, objectives, and power needs of parties involved.

7. Developing instruments for selection/training of participants and researchers.

8. Support of researchers and participants as change agents.

Working with systematic intentions similar to Bargal's, Fierros and Bernal (2016, p. 115) describe principles involved in transformation of *pláticas* from a conversational method of interpersonal interaction into a methodology of social research:

> *Pláticas* move from method to methodology when [1] they are embedded within the rich, analytical theory of Chicana feminism, [2] engage contributors as knowledge creators essential to the meaning making process, [3] draw on life experiences, and [4] provide a potential space for healing. Perhaps most important, *pláticas* are part of a methodology that is relational and [5] holds the researcher responsible to the contributors. In other words, the space we create with *pláticas* requires that we, too, be open to sharing our own stories and be vulnerable as we are asking of contributors. The Chicana/Latina feminist *plática* methodology allows for this, in fact, it necessitates it.

Overlap between Fierros and Bernal's five principles and Bargal's eight principles is easy to discern. Both share an interest in making the world a better place, both promote trust between researchers and participants in research studies, both demand co-construction of research findings, and both take lived experience as the primary data of social research. However, of greater interest to development of a theory to make action research strong is the point at which Fierros and Bernal's list diverges from Bargal's.

The first item on Fierros and Bernal's (2006) list of *plática* methodological principles is not a methodological principle at all. The first item offers a theoretical principle that states a fact about the way the world works: identities are intersectional, multiple, and malleable. Each and every one of us is an amalgam of identities continuously (re)forged and (re)formed by social factors. This *Principle of Intersectional Identity* underpins the methodology shared by action research and *plática* research not with an ideology; but with a theory, a true statement about the way of the world: to repeat, identities are intersectional, multiple, and malleable. This fact about how the world works provides the theoretical principle action research needs to become strong,

that is, to count as a theory of social science. Its theory centered on the Principle of Intersectional Identities; action research becomes scientific examination of identity formation in study-relevant circumstances. As such, action research requires the methodology laid out by Bargal (2008) and Fierros and Bernal. Articulating *pláticas* as a theory-based, methodological format akin to action research describes optimal circumstances for trusting data collection, data analysis, research findings, and study results. Based as it is on recognition of the fact that identities develop as people engage in research together, duoethnography fully embodies the methodological rigor of *plática*-based action research. Duoethnography's inclusive, theoretically-based approach to social research increases the likelihood of raising awareness about real-world problems and fostering sustainable change in communities. Just as Ladson-Billings (1995) identified culturally responsive pedagogy as "just good teaching" because of the validity of its data and the reliability of its results, so do we, for the same reasons, present duoethnography as sound social science.

We (Seoyeon, a doctoral student, who served as the instructor in a graduate-level Mathematics Education program, and Liam, a first-year, in-service teacher at a public school who is Seoyeon's former student in a secondary-level Mathematics Education course and a course in teaching Math to English Language Learners (ELLs) offer our duoethnography as an example illustrative of the usefulness of *plática*-oriented action research for teacher identity development. Our collaboration began during two consecutive Math Education courses and continued via email after the courses were completed. The initial focus of the study was to revisit the courses that Seoyeon taught and Liam completed by engaging in reflexive inquiry to explore ways to improve Mathematics Education coursework for future preservice and in-service teachers. Data for the study originally included email exchanges between the authors in the roles of teacher and student and instructor feedback on Liam's completed coursework. As more personal experiences were shared, the conversation naturally expanded, fostering a more open dialogue about our profession. At this point, the primary data for the study transitioned to transcriptions of six Zoom conversations held between October 2024 and June 2025. Each Zoom call lasted between 50 and 80 minutes. Although Seoyeon did some preparation for the first Zoom call, care was taken from the outset to move away from a conventional interviewer–interviewee format with pre-written questions. Instead, the Zoom talks together intentionally followed the format of *pláticas* (Fierros & Bernal, 2016), which was deliberately chosen for its strengths in fostering open and meaningful dialogue. These rich discussions have provided us with therapeutic and empowering spaces that we can rely on outside our daily professional environments; and not only shaped but also strengthened our identities as researchers and teachers. We use our experience as *plática*-oriented action researchers to argue that room needs to be made in teacher education programs for student work involving duoethnography. We also recommend follow-up sessions with first-year teachers to aid in development of professional identity during a most demanding stage in a teacher's career.

Describing Our Duoethnography's Conversational Context

While setting up the courses about which she and Liam would later talk, Seoyeon adopted Kolb's (1984) Experiential Learning Theory as a conceptual framework for course development. Fully embracing Kolb's four learning styles — diverging, assimilating, converging, and accommodating — Seoyeon started from the assumption that students approach learning differently. For instance, some begin by observing others, while others start by reading. Some prioritize problem-solving through applications of ideas to contexts of study, while others prefer first-hand engagement without detailed plans. Kolb also outlined a four-part continuous learning

process: concrete experience, reflective observation, abstract conceptualization, and active experimentation. However, Kolb's theory allows that learning may occur in any combination of styles rather than following a fixed sequence. While learners may prefer different starting points — such as reading versus first-hand activities — all students eventually engage in other styles and stages to reinforce learning. Guided by these principles, Seoyeon intentionally designed course activities to address diverse learning preferences. For example, students were tasked with observing instructors or peers, reading carefully, solving problems using prior knowledge, and engaging in unfamiliar activities. Weekly tasks were structured to prioritize different parts of Kolb's learning process, ensuring varied sequences and comprehensive engagement.

As Seoyeon developed her courses and composed lesson plans she had no intentions of conducting further study of pedagogical practice with one of her students. Her and Liam's duoethnography emerged much later when they discovered a shared belief that grounded their conversations about teaching: just as students approach learning in diverse ways, teachers also bring different perspectives to teaching. For instance, educators may have varied ideas about what makes teaching effective. Being open to these differences, the ultimate goal of our dialogue was to support one another in developing our identities as instructors and researchers. Through this collaborative process, we worked to better understand who we are as teachers and the kind of researchers we aspire to become. Culturally Sustaining Pedagogy (Paris & Alim, 2017) remained central throughout the conversations and analysis as we explored how educators can express their unique perspectives and identities in their teaching practice. Recognizing the value of diverse approaches to teaching and learning, our study investigates how teachers can use culturally sustaining practices not only to better serve their students but also to empower themselves as they develop professionally.

Our conversations comprise a duoethnography about our views on teaching and learning. Duoethnography, a relatively new research method, emphasizes dialogue and mutual reflection to uncover new insights into shared experiences. As Breault (2016, p. 6) notes, in duoethnography "two researchers come together with their own current understandings of a problematic issue and then, through conversation and the sharing of their lived experiences of that issue, their understanding is transformed, or new dimensions of the issue are uncovered and explored." Unlike autoethnography, "duoethnography is autobiographical in nature, but the focus is on how the researchers experienced and gave meaning to a given phenomenon and how those meanings were transformed over time." Duoethnograpy's focus on individual interpretation of the shared research is "mutual and reciprocal" (Norris & Sawyer, 2012, p. 49). Analysis of the data followed a two-cycle process. Seoyeon reviewed and summarized all documents related to the courses she taught. These summaries were referenced as needed throughout the data analysis process, particularly after Zoom meetings. An open-ended, qualitative approach was used for analysis, beginning with *in vivo* coding, followed by a second cycle of descriptive coding. A third round of coding was conducted to organize the data and identify emergent themes (Saldaña, 2021).

What We Learned about Each Other and about Teaching Mathematics
We Are Both Career-Change Teachers: Surprisingly, there were numerous similarities between us. Both of us are career-changers who transitioned into Mathematics Education after pursuing careers in other fields or disciplines. Seoyeon initially studied Bilingual Education before transitioning to Mathematics Education. Liam received a bachelor's degree in Sociology before

eventually choosing to pursue a career in Mathematics teaching. We both admitted our decisions to major in Mathematics were driven by extrinsic motivations. For Seoyeon, as an international student, Mathematics offered better job opportunities in the United States. For Liam, a U.S. citizen, the decision was influenced by the belief that Math teachers earn higher salaries than Social Studies teachers, which his father advised. However, while their choice of Mathematics as a discipline was largely extrinsically motivated, their decision to pursue teaching was rooted in intrinsic motivation. Diverse motivations prompt career-change teachers to embark on a new professional path (Laming & Horne, 2013), and intrinsic motivation is identified as a key factor in such career decisions (Baeten & Meeus, 2016). Extrinsic factors significantly contribute to individuals leaving their previous work (Chambers, 2002; Haggard et al., 2006; Tigchelaar et al., 2010), but intrinsic motivations carry greater significance for choice of new career (Berger & D'Ascoli, 2012). Both of us believe building relationships with students and watching them get excited about learning are reasons to stay in the classroom. We both had prior teaching experiences outside traditional public-school settings, which reinforced our passion for teaching prior to enrolling in a Teacher Education program. Seoyeon taught English classes to adults in her home country of South Korea before coming to the U.S. Liam worked for seven years at a Math tutoring center, teaching middle and high school students. Although both of us held other jobs before taking teaching-related positions, our teaching experiences solidified our belief that teaching was our true passion.

Math Is More than Just Problem-Solving; It Is Full of Stories, Too: We frequently used the words "story" or "stories" during our Zoom conversations, underscoring the narrative-driven nature of our teaching approaches. Both described mathematical problems and memorable lessons in terms of the stories behind them, rather than focusing solely on solving problems or demonstrating procedures. For instance, Liam shared a story about the t-test, which he learned from his Greek teacher. The story highlighted William Sealy Gosset's statistical contributions while working for the Guinness Brewery in Ireland, where he developed the t-test to address small sample sizes and unknown population standard deviations. This story resonated with both of us. We agreed that incorporating stories into math lessons fosters a communicative and engaging classroom environment. We also discussed the importance of culturally relevant pedagogy, using examples such as the historical connections between algebra and Arabic languages to motivate and engage some of our Arabic language-speaking students. We agreed that communicative math teaching is more accessible for students than project-based learning.

Math Teachers Can Enjoy Writing, Too: Liam has recently published his second book of poems (Sullivan, 2025). Liam said, "I love writing. I don't want to just be known as an author, though I like it. I love my work as a teacher. … It improves my ability to do research and find connections between ideas." He said, "I'd much rather have the idea of having both of those things tied to my name rather than just be an author or just a Math educator." He also pointed out that developing an identity as a writer is closely connected to his career as a math teacher: "I think there is a stereotype that writing and math are not connected, but whenever you're solving a math problem, you're doing, you're writing. Sometimes, you can solve math by just talking or using visuals, but I think writing is also a part of the solving process. ... They [writing and solving a Math problem] are two sides of the same coin; they reinforce each other." Liam feels that things have been better, but he was surrounded by people who tend to believe that one should focus on one thing and cannot excel at many things. He added that he now has more supportive people around him.

Liam's identity as a writer also influences how he pictures an engaging Math class. Both of us recognized that a significant portion of the Mathematics classes we've observed were lecture-based or teacher-centered Math instruction. We both commented that we lack experience observing other subject areas, such as ELA or Social Studies, and we both anticipated and hoped those classes would be more student-centered. However, many students are still experiencing learning Math in a setting where the teacher talks significantly more than the students. Liam commented that he was fortunate to have observed an excellent Math teacher at his school, who was more like a mentor or supervisor. Interestingly, Liam described teachers like his supervisor as high-energy people, while he referred to himself as "Type B." "Type A" is a style where a teacher shows great enthusiasm and asks students to do things all together at the same time, for example, using gestures together to describe a Math concept, saying some words all together, or chanting as a group. Those are not Liam's typical methods. He prefers a calm learning environment. In another Zoom session, Liam shared how much he loved and enjoyed his in-person classes at a nearby college, which he attended to fulfill certification requirements. He expressed appreciation for his professor's calm teaching style, noting how valuable it was to have moments to pause, reflect, and take notes. He especially enjoyed the opportunity to think deeply about what was just said and to engage in collaborative problem-solving during Math lessons. He hoped to create a similar experience for his students.

Visual Art in Math Is an Exciting Addition: In addition to his work as a writer, Liam has a strong interest in the arts, particularly painting. In Zoom meetings and emails Liam often included images of his recent paintings or artwork he encountered at museums, along with the names of the artists and brief contextual information. The email exchange inspired us to explore how math educators incorporate art into their teaching, an exploration we plan to utilize in a future collaborative project. Such interdisciplinary approaches might benefit all students, especially those who have had negative experiences with traditional Mathematics instruction. We reflected on a memorable presentation in a summer Mathematics Education course, which Seoyeon taught and in which Liam was enrolled. A student in the class was an experienced Art teacher. For her final project, she presented a compelling exploration of how Mathematics and Art can be taught together to enhance student engagement and learning. She emphasized the intentional effort to find similarities between Mathematics and Art, and her work stood out due to its high quality, rooted in her years of experience and her genuine effort to connect her Art class with grade-level Mathematics standards. We both vividly remembered her work, which became a shared reference point in our ongoing conversations about effective interdisciplinary teaching.

The first time Liam mentioned his paintings in an email; they were introduced primarily as a personal outlet for relaxation and a strategy for stress relief. However, during a subsequent Zoom conversation, it became evident that the artwork also held potential as a powerful pedagogical tool. We both recognize the potential of visual art as an engaging entry point into mathematical dialogue, especially for young learners. For example, Seoyeon used to think about how her young daughter seemed to intuitively connect artmaking with mathematical ideas. However, after a few additional conversations over Zoom and via email, Seoyeon raised a question about whether such connections are truly intuitive for the child or whether they are being interpreted and constructed by adults. While her daughter can engage in conversations about Math and Art, it is often her mother, Seoyeon, who initiates and frames these connections. This recognition became another turning point for Seoyeon. Although she does not equate young children with pre-service teachers, she noticed a parallel in how both groups benefit from guided support in making interdisciplinary connections. Her daughter, for instance, explores mathematical ideas

through playful and artistic experiences when scaffolded appropriately. Similarly, pre-service teachers often have untapped strengths and interests outside of mathematics. With intentional guidance, they, too, can learn to draw meaningful connections between Mathematics and their other areas of expertise by engaging students in mathematical dialogue through personally meaningful entry points.

At the same time, realization that other disciplines provide entry to meaningful study of Mathematics brought both excitement and concern. Seoyeon recognizes the transformative potential of helping teachers integrate their unique strengths into Mathematics instruction. However, she is also aware of her own limitations, particularly her lack of expertise in the non-mathematical domains that her pre-service teachers may bring into the conversation in Seoyeon's classroom and, later, when working at their own jobs, into their classrooms. With her daughter, Seoyeon feels confident engaging in interdisciplinary conversations because the level of Art involved is accessible even for non-artists and non-aesthetes; and the related Mathematics falls within Seoyeon's area of expertise. In contrast, engaging with educators whose backgrounds or interests differ significantly from hers, Seoyeon finds herself hesitant to initiate conversations about interdisciplinary connections that lie outside her area of expertise. Despite these challenges and vulnerabilities, Seoyeon remains hopeful that continued dialogue with Liam, along with the steady co-creation of tangible examples with her students, will strengthen her confidence in guiding pre-service teachers with interests divergent from her own. She hopes that these collaborative efforts may help her move beyond hesitation and embrace the richness that varied knowledge and experiences can bring to Mathematics Education.

Parenting Led to a Deeper Reflection on the Meaning of Teaching Math: Seoyeon and her husband often engage in extended conversations about how their child's seemingly playful art projects evolve into objects with intentional design and practical function. One example involves a folded paper creation that began as a whimsical hat and was later repurposed into a tool — according to the child — that could help cool down hot soup more efficiently, allowing her to begin eating immediately without discomfort. While the tool's effectiveness in reducing cooling time remained debatable, and specific design limitations were pointed out during family discussions, the tool remained in use at the dinner table for several weeks. The child continued to revise the design, demonstrating an iterative process of experimentation and refinement. Although it was unclear to what extent these modifications were influenced by adult commentary, she appeared to make deliberate efforts to improve the tool's performance. While such activities may seem trivial, they reflect sophisticated cognitive processes, including planning, hypothesis testing, and problem-solving. At one point, the child's father commented the iterative revisions resembled aspects of engineering design, a comparison that elicited visible enthusiasm from his daughter. Seoyeon notes numerous Mathematics lessons — ranging from measurement and data collection to reasoning and spatial understanding — are conceptually linked to this experience, along with science topics related to heat transfer and airflow.

Family discussions during this period often centered on practical inquiries, such as whether blowing on soup or channeling air through a straw-like tool was more effective for cooling. Although the child lacked formal knowledge of scientific principles, she nonetheless employed logical reasoning to argue for the effectiveness of her tool. She posed her own questions — How many times should the soup be blown on? For how long? Did the focused airflow make a difference? — and used those questions as the basis for further revision. At one point, she declared that regardless of whether the tool worked objectively, she would continue to use it

because she liked it. This moment highlighted the importance of ownership in learning: having designed and created the tool herself, she remained invested in refining and using it. The purpose of these family conversations was not to determine the "right" answer but to foster rich, open-ended dialogue. The child's inquiries prompted deeper exploration for everyone involved, and these moments became meaningful reference points for future conversations and learning. Such experiences demonstrate how authentic, everyday contexts can naturally support the development of mathematical and scientific thinking, especially when learners are given the space to explore, question, and refine their ideas. Seoyeon's experience with her family while raising her child strengthened her belief in the value of exposing learners to new ideas and providing space for open-ended dialogue, regardless of whether the content is familiar or unfamiliar. Often, well-written lesson plans with clearly defined objectives leave little flexibility for teachers to adapt or respond to student curiosity, which can unintentionally strip joy and creativity from the learning process. When learners are not given the opportunity to ask questions or share their thinking, meaningful learning is diminished. This reinforces the need for more dialogical Mathematics classrooms — spaces where student voice, inquiry, and conversation are central to the learning experience.

Although Seoyeon and her husband deliberately chose not to introduce formal Mathematics instruction before it was introduced in school, they also recognized the rich, implicit learning that occurred through conversation and exploration at home. This prompted Seoyeon to reflect on what it truly means to "teach" Mathematics. Without formal lessons, the child began to grasp foundational concepts such as division. For example, when dividing a single croissant or cookie between or among others, she intuitively understood the core ideas underlying fractions. Although unfamiliar with terms like "measurement" or "partitive division," she could articulate the logic behind sharing with others, comparing different contexts, such as putting the same number of cherry tomatoes in a zipper bag for snacks versus sharing a single cookie with friends. As a Mathematics educator, Seoyeon found it striking how a young child could explain her understanding of these situations, identify which felt more straightforward or more complex, and even express emotions connected to her mathematical reasoning — all without knowing formal vocabulary. These experiences led Seoyeon to believe that incorporating more conversation into Math classrooms would deeply benefit students.

All math teachers are ELL teachers: Regarding teaching strategies for English Language Learners (ELLs), Seoyeon emphasized the importance of integrating ELLs into mainstream classrooms to promote collaboration and engagement, without segregating them from classmates who are heritage speakers of English. Although Liam's current teaching environment does not include students with limited English proficiency, he observed the positive impact of pairing or grouping students from similar ethnic backgrounds. These groups demonstrated high levels of confidence and trust, which enhanced their comfort and performance. However, Liam intentionally mixes groups at times to foster a classroom environment where all students can collaborate effectively. He strongly recommended that all teachers, regardless of their current demographics, take courses on teaching ELLs, given the increasing diversity in U.S. classrooms.

Duoethnography Enriches Teacher Education

As Breault (2016) stated, trust between researchers is a prerequisite in duoethnography, enabling the disclosure and exploration of personal stories. While the initial aim of this study was to reflect on experiences in reading, active discussions, and communicative approaches in

Mathematics Education, the mutual trust and respect between the authors allowed for deeper self-reflection. Both researchers shared personal stories, including childhood experiences and family influences on career choices, uncovering how their identities and perceptions have been shaped and challenged over time. We both concluded that this study marks the beginning of a longer professional dialogue rather than the end of our duoethnography. We expressed a shared commitment to extending our conversations and inviting additional voices into future discussions — perhaps expanding our duoethnography into a polyethnography (Arthur et al., 2017). Our reflections often returned to the joy and creativity in teaching, exemplified by Liam's anecdote about his brief experience as a postal worker. He shared how technological advancements in the postal system reflected societal changes and used this story to engage his students, demonstrating the value of narratives beyond the realm of Mathematics. This example underscored how his diverse experiences and identity as an artist and poet influence his ability to adapt pre-designed lesson plans, making them more meaningful and enjoyable for his students.

Although the study began with a focus on revising coursework and discussing challenges in Mathematics Education, the conversation naturally evolved into a passionate dialogue about empowerment for both educators and students. Seoyeon was particularly inspired by Liam's reflections on how action research in his most memorable coursework during his master's program shaped his teaching. Interestingly, action research was not something the authors initially planned to discuss; it emerged spontaneously as they shared their personal struggles. For Seoyeon, the transition from high school Mathematics teaching to teaching preservice teachers was a significant shift. Just as she began to feel confident in that role, she faced a new challenge: facilitating an action research course for non-Mathematics content teachers. During our conversation, Seoyeon began to reflect more deeply on her approach to teaching that course. The insights and enthusiasm shared by Liam prompted Seoyeon to explore the topic further through additional reading. This exchange inspired her with new ideas and increased clarity about how to guide her students through action research. Now, we are developing multiple potential action research projects — some collaborative, others individual — designed to improve our teaching by better engaging our future students. We are both beginning to view action research not only as a methodology, but as a framework that could eventually support theoretical exploration and social change. Our growing confidence reflects a shift from practical application toward a more philosophical and critical engagement in education.

A question was raised about whether Liam's previous experiences before teaching prepared him for his current teaching role. In response, he highlighted his Math tutoring experience and a class he took during his master's degree program. He elaborated, "When people say teaching is an art, action research gives it the necessary structure. I think that class was especially valuable in helping me evaluate teachers' practices and reflect on my own teaching methods." We both viewed action research as an integral part of teaching and expressed strong opinions about its inclusion in teacher education programs. Seoyeon, currently teaching an action research course, and Liam, implementing informal action research daily, agreed on its transformative potential. We both agree action research is a powerful tool in education, with reflection serving as a vital component enabling educators to understand, identify, value, manage, and foster their professional development and growth (Liakopoulou, 2012).

Both authors recognized that their life experiences and diverse academic backgrounds make them distinctive and engaging Mathematics educators. Reflecting on our inconsistent experiences with learning Mathematics, especially during high school, we both acknowledged

the critical role teachers play in shaping students' attitudes toward the subject. The quality of teachers and the connections they make with their students are paramount. The discussion also highlighted the widespread challenges students face in learning Mathematics, the persistence of Math anxiety among adults, and the lack of enthusiasm many feel for the subject. These issues call for a reevaluation of traditional teaching methods in Mathematics. While many educators and researchers have explored this topic, there is also a need to critically examine the qualities and preparation of Mathematics teachers to ensure that all Teacher Education students have positive learning experiences. A trusted and mutually respectful relationship, like the one that emerged from our duoethnography, empowers educators. Increased trust on the part of Education students in what they are learning as they develop professional identities is a good reason to include duoethnography in Teacher Education programs. Common practice in Teacher Education programs should be to pair teacher candidates with professors/instructors, clinical coaches, mentor teachers, or peers to conduct duoethnographic studies of their learning to be teachers. *Plática*-centered action research, that is, duoethnography, can foster a safe and intimate environment for preservice and novice teachers to express their thoughts and inquiries, enhancing development of their professional identities. Moreover, data generated from teacher preparation duoethnographies informs Teacher Education programs about strengths and developmental needs of their student bodies, enabling adaptation of coursework to meet the evolving needs of future educators. Finally, duoethographies with former students early in their careers as teachers optimizes continuity of learning during their transition from college student to classroom teacher.

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