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Member Checking Process with Adolescent Students: Not Just Reading a Transcript

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Abstract

This paper explores the way in which educational researchers created a member checking process with adolescent students during a study to uncover and understand female and male's dynamic mathematics identity in single-sex and coeducational mathematics classes within a public coeducational middle school in the United States. The authors developed a member checking process that included I-poems and Word Trees, which provided the youth with opportunities for self-reflection, enhancement of findings, examination of the students' learning, and as a way to shift some of the power from the researcher to the participants. This paper serves as an example for other researchers to begin thinking about the important process of member checking and participants' roles in the research.

Keywords

Adolescents, I-Poems, Listening Guide, Member Checking, Word Trees

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Member Checking Process with Adolescent Students: Not Just Reading a Transcript

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This paper explores the way in which educational researchers created a member checking process with adolescent students during a study to uncover and understand female and male's dynamic mathematics identity in single-sex and coeducational mathematics classes within a public coeducational middle school in the United States. The authors developed a member checking process that included I-poems and Word Trees, which provided the youth with opportunities for self-reflection, enhancement of findings, examination of the students' learning, and as a way to shift some of the power from the researcher to the participants. This paper serves as an example for other researchers to begin thinking about the important process of member checking and participants' roles in the research. Keywords: Adolescents, I-Poems, Listening Guide, Member Checking, Word Trees

There is nothing like looking, if you want to find something. You certainly usually find something, if you look, but it not always quite the something you are after. (J. R. R. Tolkien)

Our Story

As a recent doctoral student, Amber's first encounter with member checking was in a research course entitled Qualitative Inquiry in Education taught by the second author, Cassie. In the second week of this class, we discussed the ethical implications of member checking (Lareau, 2011)—the challenges and dilemmas we may encounter as developing researchers and will continuously face throughout our life passions in the field of educational research. The second encounter was again in this course, when we talked about ways to establish rigor and trustworthiness within our studies. As we discussed member checking, it we situated as a “best practice” in the field of qualitative research, a practice that as a graduate research assistant was never a part of any research project I¹ conducted involving children, adolescents, or even adults. It was not until my dissertation that I came face-to-face with *how* to conduct member checking as I felt it was not only important to check my interpretations (e.g., Lincoln & Guba, 1985; Tracy, 2010); but it was also as a vital part of my research agenda, which was providing adolescent students with a voice in an era when educational policies and other choices are made for them (e.g., single-sex classes or ability grouped tracking). Cassie, who also served as Amber's methodological advisor for her dissertation, suggested looking to other authors for guidance on this approach.

As the opening quote illustrates, I began searching for *how* other researchers have conducted member checking, but much of what I found simply defined member checking and “presented [it] as *should do's* rather than *must do's*” (Carlson, 2010, p. 1102; italics in original). For example, Glesne (2006) defined the process as “sharing interview transcripts,

¹ The use of “I” throughout this paper refers to the first author, Amber Simpson.

analytical thoughts, and/or drafts of the final report with research participants to make sure you are representing them and their ideas accurately” (p. 38). Similarly, Stake (1995) discussed participants’ role in the process as

the actor is requested to examine rough drafts of writing where the actions or words of the actor are featured. . . The actor is asked to review the material for accuracy and palatability. The actor may be encouraged to provide alternative language or interpretation but is not promised that that version will appear in the final report. Regardless, some of that feedback is worthy of inclusion. (pp. 115-116)

As another example, Richards (2003) defined member checking as a form of validation to “seek views of members on accuracy of data gathered, descriptions, or even interpretations” (p. 287). Even within the second edition of the *Handbook of Qualitative Research* (Denzin & Lincoln, 2000), a handbook of 41 chapters, 1065 pages, I found at most 10 pages dedicated to member checking (e.g., credibility, reliability, rigor); hence, there was not a full chapter dedicated to member checking, which I believe to be an important component of sound qualitative research methods. I recognize that this process extends the life of a study and may bring about negative reactions and emotions from participants; and in the end, do little to change researchers’ interpretations and final text (Lareau, 2011), which is why researchers may have chosen to not conduct member checks or write about their process. Additionally, I am not discrediting the work of these individuals as I believe their work is influential to the past, present, and future work of researchers, but I felt trapped in a box of frustration.

This frustration became more intense as the process of member checking was presented as a list of ways to conduct member checking. For example,

through a focus group discussion, by distributing copies of the draft manuscript to individuals for their written comments, in (formal or informal) one-on-one interviews, via e-mail discussions, or by presenting findings in a public forum with participants present and then recording or taking notes on the conversations that ensue. (Ellingson, 2009, p. 42)

I am not alone in expressing my frustration, as others have begun to write about their member checking process in direct response to the limited availability of researchers sharing their approaches to establishing the credibility of their insights and/or final results with participants (Doyle, 2007; Harvey, 2015; Reilly, 2013; Turner & Coen, 2008). Additionally, some have argued against post-hoc evaluations of the research findings (e.g., read final text) in favor of a member checking process re-envisioned as participant oriented; in other words, allowing participants to shape and re-shape the research and insights as an ongoing process or partnership (Bloor, 2001; Doyle, 2007; Harvey, 2015; Morse, Barrett, Mayan, Olson, & Spiers, 2008). For example, Harvey’s (2015) member checking process could be described as a back and forth conversation between her participants and herself as she invited and engaged participants in interviews around individual themes, participant themes, and finally, individual narrative case studies. Yet, my hope and excitement was quickly squashed as the member checking process of other researchers (e.g., Doyle, 2007; Reilly, 2013) were with adult participants at least 18 years of age and asked participants to spend a substantial amount of time reading transcripts and/or narratives. My intent in this paper is to add to the scant research on *how* to conduct member checking by discussing my approach with adolescent participants, as well as lessons learned from my experience. But before outlining my process, I provide a brief overview of the research study.

Synopsis of Research

Because I was not able to find details on the how-to's of member checking, I developed my own as part of my dissertation work, which was an exploratory study that sought to uncover and understand female and male's dynamic mathematics identity in single-sex² and coeducational mathematics classes within a public coeducational middle school in the United States. I grounded this work in the notion of "voice," one's physical voice as an instrument of expression, grounded in language (Bakhtin, 1981, 1986), and representative of one's "self" (Evans, 2013; Gilligan, 2011). As argued by Evans (2013), we, our identities, *are* not composed of our voices, but as individuals, we are continuously *becoming* our voices. We are shedding previous voices and establishing new voices. Through transformation of language into voices, we make our identities known. "[L]anguage becomes dialogue, and subjects become voices. In other words, voices are never merely persons talking to one another; rather, they are the vocal forces that provide us with our ever so clamorous lives [identities]" (Evans, 2013, p. 162).

Upon receiving approval from the university's Institutional Review Board, written consent from the parents and verbal assent from the students were obtained; hence, providing us with permission to collect data from the students, as well as disseminate results with students' self-selected pseudonym. The participants for this study were 12 seventh grade students—3 females in a single-sex class, 3 females in a coeducational class, 3 males in a single-sex class, and 3 males in a coeducational class. To highlight participants' voice(s) as "truth" (Clandinin & Connelly, 2000; Polkinghorne, 1988), the main data source for this study was semi-structured interviews with each of the participants. My intent was to render narrative accounts or the multiple voices as told by participants rather than to explain why something has happened (Polkinghorne, 1988). To analyze the multiple voices composing participants' mathematics identity as expressed in the interview, I utilized The Listening Guide (Brown, Debold, Tappan, & Gilligan, 1991), an approach developed to provide a safe space for marginalized and oppressed individuals to speak freely about their experiences (Brown & Gilligan, 1992; Sorsoli & Tolman, 2008). This is a 4-step process:

- a) read an entire interview, listening for the plot—the who, what, when, why, and where;
- b) construct I-poems;
- c) re-read the interview multiple times, each time listening for one of the participant's voices; and
- d) synthesize what has been learned into a coherent analysis.

For me, the Listening Guide allowed me to consider not only what "voices" were present, but also how participant's voices were in interplay with one another (Evans, 2008); similar to what one may glimpse at the end of a kaleidoscope.

My Approach to Member Checking

Specific to my study, I defined member checking as the process of asking each participant to confirm or disconfirm individual voices and the interplay of voices composing his or her mathematics identity gleaned from the narratives (Creswell & Miller, 2000; Lincoln

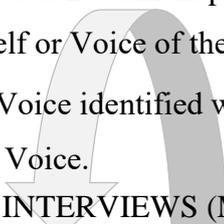
² We use the word single-sex in this manuscript because students were placed in these classes based on their biological orientation as opposed to performative acts (e.g., Butler, 2004).

& Guba, 1985). I used member checking after step three of the Listening Guide for three reasons:

- a) to relinquish my power as a researcher (e.g., Buchbinder, 2010; Lincoln & Guba, 1985; Ritchie & Rigano, 2001),
- b) to continue to include the missing perspective and the voices of students to inform my insights (Clark, 2011; Cook-Sather, 2002; Phillips, 2014), and
- c) to reflect on how the various voices fit together or what Saldaña (2014) termed as thinking connectively.

Table 1 outlines my analysis and member checking process, as the latter is elaborated below. The arrow within The Listening Guide indicates how I used the validation interviews to inform my findings.

Table 1: *Steps involved in my Analysis and Member Checking Process*

The Listening Guide	
<ol style="list-style-type: none"> 1. Listen for the plot & Document personal reactions and interpretations 2. Listen for the Self or Voice of the “I” 3. Listen for each Voice identified within student’s mathematics identity, as well as a possible “New” Voice. 	
VALIDATION INTERVIEWS (MEMBER CHECKING)	
<ol style="list-style-type: none"> 4. Interplay of the Voices 	
Member Checking Process	
I- poems	
<ol style="list-style-type: none"> 1. Read and reflected upon by participant 2. Titled I-poem 3. Highlighted any disagreements 4. Conversation around I-poem 5. Put in order and numbered from the one that represented them the most to the one that represented them the least; followed by an explanation 	
Word Trees	
<ol style="list-style-type: none"> 1. Read and reflected upon by participant 2. Highlighted any disagreements 3. Numbered each from 1 to 10 with 1 indicating the word tree did not represent them at all to 10 indicating the word tree represented them well 4. Conversation around word tree 	

Due to the age of my participants and out of respect for their time, I did not present them with the final results prior to obtaining their reactions and opinions (e.g., Lareau, 2011), but rather as an additional step in the Listening Guide. In this way, my participants could contribute to the analysis process and therefore, their interpretations became a step in my analysis. To do this, I conducted a two-step validation interview with each participant (Buchbinder, 2010). In the first part, participants read and reflected on their I-poems constructed by the researcher as part of the data analysis process (i.e., step two). Additionally, upon reading each I-poem, they were asked to title the poem and to highlight line(s) they disagreed with. This step allowed each participant to reflect on how he or she represented his or her *self* as a learner of mathematics in a single-sex or coeducation mathematics classroom. Participants concluded this first step of the member checking process by putting their I-poems in order from the one that they believed represented them the most to the one that represented them the least. The purpose of this was to understand which voice the participants believed to be their lead voice, which is the voice we “immediately and pervasively identify and the one the other voices within us have to *speak to*” (Evans, 2008, p. 193), in this case, the voice that most represents who they perceived themselves to be as learners of mathematics.

The use of I-poems are not limited to those who employ the Listening Guide. To construct I-poems, a researcher begins by underlining every participant’s use of “I” along with verbs and any pertinent words or phrases, and then positioning the I-statements on a separate line of a poem in the same sequential order of the text. I adapted this step when creating my stanzas to reflect each participant’s voice I heard in the narratives, therefore, composing a different I-poem for each voice. Below, I have provided an example of an “I” poem constructed from an excerpt from a coeducational female participant’s (Emmeline) response to a question about her involvement in the classroom, in particular, her hesitancy to volunteer working a problem out on the front whiteboard. The column on the left is from the original transcript with I-phrases in bold, while the column on the right is the I-poem.

Table 2. *Example of an I-poem Construction*

<p>If I get it wrong, I'm going to like be very embarrassed because she would be calling me out. Emmeline, you know this is not right. And I, half the time when she does that, I have to go back up and do it. And I keep on getting it wrong. And it just makes me get really frustrated at math.</p>	<p>I get it wrong I am going to be embarrassed I have to go back I have to do I keep on getting it wrong</p>
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I have also included an image of Emmeline’s I-poem associated with her Voice of Invisibility, a voice that expresses taking a passive role in the classroom, typically due to not being comfortable in one’s classroom. As can be seen, she titled this as “Would Not In Class” and disagreed with the statement, “I would go,” which confirmed her Voice of Invisibility. The two positioned in the top right hand corner indicated that she perceived this I-poem to represent her second out of six I-poems.

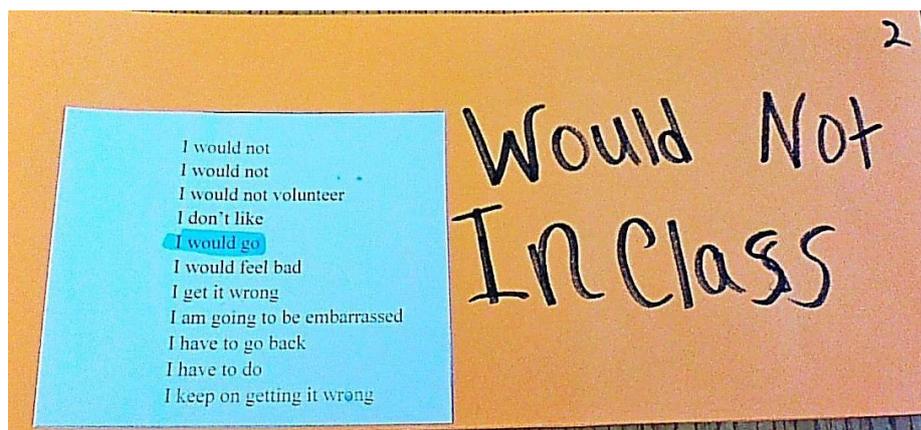


Figure 1. Emmeline’s I-poems for Voice of Invisibility

To provide an additional illustration, Table 3 represents the construction of part of an I-poem from Justice, a male participant enrolled in a single-sex mathematics classroom. This example stemmed from a conversation in which Justice was asked to elaborate on why he chose *willing* as one of three adjectives that described him as a mathematics student. Again, the original transcript is in the left column and the I-poem is in the right column.

Table 3. An Additional Example of an I-poem Construction

Because I’m willing to put forth the effort	I am willing to put forth the effort
to make good grades. Like sometimes I’ll	I will go home
go home and get on the computer websites	I will get on the computer
that help me learn for math and stuff like	I am willing
that.	I do the homework
Because normally I’m making pretty good	I spend a lot of time
grades in her class and I’m doing the	
homework like every day. Sometimes I	
spend a lot of time on it.	

This I-poem represents Justice’s Voice of Effort, a voice expressing working hard and efficiently in order to receive good grades, in most instances, a grade of A. I included this example for two reasons. One, notice I did not consider the phrase, “I’m making pretty good grades in her class,” because this statement was illustrative of another voice, namely, a voice expressing confidence in his mathematics abilities. This further illustrates how voices are in interplay with one another. Two, notice how I edited Justice’s words, such as “I’m doing the homework” to “I do the homework,” and added an additional line to the I-poem, “I am willing.” This decision is similar to found poetry in which researchers extract words and

phrases from participant's narratives to transform into poetic form by changing spacing within or between lines and/or by altering the text by additions or omissions (Butler-Kisber, 2010; Glesne, 1997).

Figure 2 was the I-poem as presented to Justice as part of the member checking process. As can be seen, he titled this I-poem as Extra Work.

Justice: Because I am willing to do extra work to get good grades.

I: Why?

Justice: Because I want to do better in school, so I can get a good job someday.

I: Why do you think there is a need for that?

Justice: Because you could end up with a really good job and make a lot of money.

I: Do you disagree with anything in this I-poem?

Justice: No.

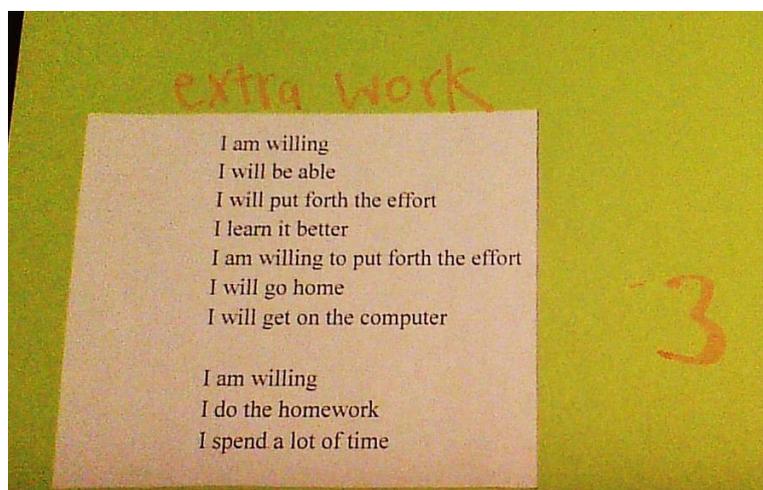


Figure 2. Justice's I-poems for Voice of Effort

Justice's agreement with this voice is also visibly supported as he did not highlight any phrases of the I-poem. Additionally, when placing his I-poems in order from the one that represents him the most to the I-poem that represents him the least, Justice considered this I-poem, or his Voice of Effort, to represent him thirdly out of the four I-poems utilized in his member checking process. This indicated by the number "3."

The second part of the member checking process included word trees, which are visual, spatial representations that allow one to examine the ways that a particular word or phrase are connected to other words and phrases narrated within their interviews, similar to a suffix tree (Wattenberg & Viégas, 2008). Figure 3 is an example of a word tree presented to Emmeline, which is representative of Emmeline's Voice of Outsider, a voice expressing being "picked on" by one's peers or feelings of being "the other."

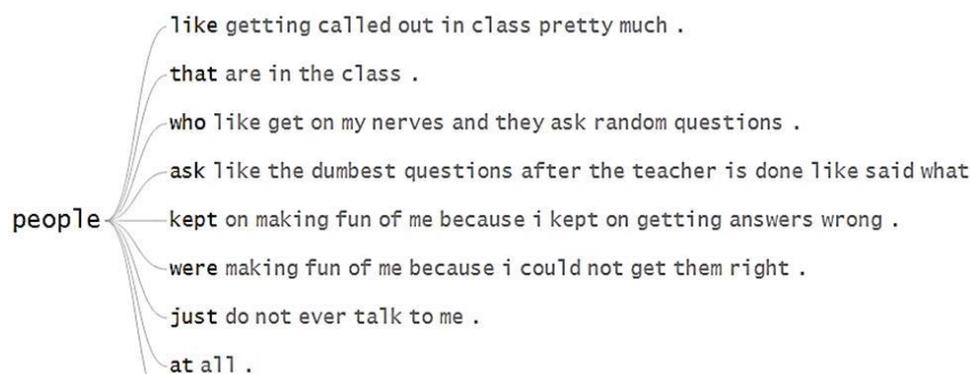


Figure 3. One of Emmeline's word trees entitled People

I constructed each word tree through the free website, Revelation, Inc. (2013). Participants were asked to reflect on word trees selected by the researcher and representative of their differing and cohesive voices not apparent in their I-poems, for instance, the participant's relationship with her or his teacher or with another peer in the classroom. Again, participants were asked to highlight any lines they disagreed with and to give the word tree a number between one and ten, with 1 indicating that the word tree did not represent them at all, to 10 indicating that the word tree represented them entirely. For this specific word tree, Emmeline did not disagree with anything and scored it a 9. "Most of this is me, but I only put nine because I don't get this one right here [people like getting called out in class pretty much]." The validation interviews were audio-recorded and transcribed. At the conclusion of each validation interview, I also documented my thoughts and reflections on the process, which were maintained in a research journal.

Lessons Learned

As part of the validation interviews, I asked each participant several questions regarding this process. What did you like and/or dislike about the I-poems? What did you like and/or dislike about the word trees? Which did you enjoy the most and why? Which one do you think represented you better as a math student and why? How do you feel about this process? The answer to these questions, as well as participants' comments throughout the validation interview and my own reflections on the process, informed what I learned from this particular member checking process.

Lesson 1: Enhance Rather Than Alter

By not asking participants to read the final text or rough draft of the final text, I was not faced with the dilemma of whether I should change the text based on their comments and feelings, or in this study, voices in opposition to one another (Jackson, 2009). On the other hand, I was able to utilize what they said within my results; therefore, enhancing my findings rather than altering my findings. In general, many of the participants' confirmed their voices, which built and maintained the trustworthiness of the study in that participants' voices were consistent between two data sources, semi-structured interviews and validation interviews (Creswell & Miller, 2000; Webster & Mertova, 2007). An example of this is Emmeline's Voice of Invisibility as confirmed in her I-poem.

There were also instances through this process in which a new voice arose from the participants' validation interviews and other instances in which a voice was silenced by the participants and hence, altered the interplay of their voices expressing their mathematics identity. For example, Matthew, a male in the single-sex class, contended that neither the I-

poems nor the word trees captured his reliability as a mathematics student to complete his classwork and homework. Therefore, the Voice of “Good” Student became an audible voice composing Matthew’s identity as a mathematics student. As an additional example, I omitted a voice from one of the coeducational male students, Trevor, the Voice of Distress, a voice expressing negative feelings experienced in the mathematics class. “Because now instead of like last time I was kind of scared that I might get embarrassed for answering something wrong. But now, I kind of get a little bit tickled whenever I get something wrong.”

Finally, there were instances in which a participant denied expressing a voice, but I retained the voice because of the participant’s use of hedge words throughout the validation interview, that is, words that indicate a level of uncertainty and doubt such as maybe and I guess (Rowland, 1995). To illustrate, Hannabell stated, “I am okay with math, I would disagree with that [statement]. And I am kind of good, I would say *I am good at math*.” Yet, on several occasions, Hannabell employed tentative language in regards to her confidence as a mathematics student. “It [I-poem] says I am good. I *guess* I would agree with that, but then again I’m just like I *guess* I would say that I’m good.” Or “...even if I am doing it right, I might also think I am doing it wrong sometimes,” which implies doubt in her mathematics ability.

Lesson 2: Opportunity for Self-Reflection

To my surprise, the adolescent participants in my study appreciated having this opportunity to see and reflect on how they represented themselves as mathematics students, and for some, they were glad to have this opportunity because they had perceived themselves as changing over the several months since the first interview. For example, Colin claimed that this process was cool as it allowed him to “change my answers after a few months. Because over a few months, you can change over a short time period.” In several cases, this process was a humbling experience in that they could not “believe I said some of the things that I said” (Cameron). Matthew stated that the word trees and the I-poems captured him as being cocky and mean. “Well, I was trying to tell the truth, but the truth is mean sometimes. I was just trying to tell facts about the classroom and on paper it makes me look like a jerk.” For others, the validation interviews created a therapeutic benefit (Harper & Cole, 2012) in that they saw a positive shift in themselves as mathematics students. For Hannah, “I think it makes me feel better at math and how I have gotten a lot better.” Likewise, Trevor stated that this opportunity made him “feel better because like I see what *I was* two months ago and see what *I am* now.” This process seemed to allow them to “evolve new levels of understanding and meaning-making about their lives” (Josselson, 2004, p. 7); understandings that were not recognized at the time (Quigley, Trauth-Nare, & Beeman-Cadwallader, 2015).

Lesson 3: Power of the I-Poems

The purpose of I-poems within the Listening Guide is to bring the researcher into a relationship with a participant, to form a connection because the researcher “encounter[s] not simply a text, but rather the *heart and mind* of another” (Brown & Gilligan, 1992, p. 28). Including I-poems as part of the member checking process allowed me to continue building a relationship with each of the participants beyond a body of text, and personally, invoked emotional states of empathy, compassion, and hilarity as we had a conversation around the I-poems and I reflected on my own experiences as a female adolescent in a coeducational mathematics class. For example, the manner in which Emmeline talked of her desire to be invisible reminded me of my own experiences as an adolescent in certain contexts and around certain people today. Or how Cameron danced around the notion that he excelled in mathematics because he is a male rather than a female. Additionally, allowing participants to

title each of their I-poems, or label their voices, provided further insights into their narrated mathematics identity. For example, Trevor titled an I-poem representing a Voice of Oscillation as “Sometimes.” Throughout Trevor’s initial interview, he voiced comments expressing contradictory statements in regards to his mathematics abilities (e.g., I am smart. I am bad.), which he confirmed: “I would probably say [I am] more like in the middle between all of that.” We were able to discuss further why this title was appropriate within the context of his mathematics classroom and particular content areas such as dividing fractions.

I-poems were also enlightening for some of the participants as the I-poems were perceived as explaining and capturing who they were as mathematics students (i.e., mathematics identity). “I-poems are great. They explained how I am...And helped me to open up” (Dottie). Or as stated by Emmeline, “It just sticks out to me like I, I, I. It’s a lot of stuff that I do.” For the majority of the participants, I-poems were preferable to the word trees: one, because the word trees were difficult to read, and two, because they were confusing to them at times, in which case, they would highlight the statement or branch as a disagreement. As stated by Colin, “the word trees are hard to read. Some of them don’t make sense, like *don’t do it*. It’s confusing how it works.” This was also apparent within the process itself as some participants voiced comments such as “I’m not really sure about that one” (Hannabell), “I don’t get it” (Katrina), or asking me “What does that mean?” (Colin). Personally, I noted in my researcher journal how the word trees oftentimes “mirror[ed] the I-poems, which is good for triangulation, but not so much in learning more about their mathematics identity.” Granted this is likely because I-poems were utilized first in the process. But also, the I-poems and the word trees seemed to invoke the same conversations; therefore, I would contend that the participants’ I-poems were enough to stand on their own.

Moreover, the open-ended nature of the I-statements afforded some participants the possibility to reconstruct and reinterpret the meanings of the subject-verb phrase from her or his initial interview. By way of example, consider the I-poem below entitled “working in quiet place” (Figure 4). Colin highlighted the phrase “I don’t care.”

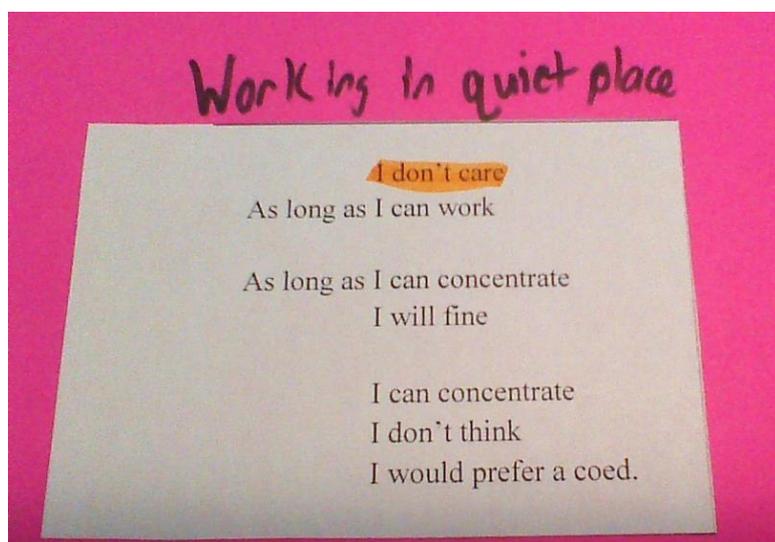


Figure 4. Colin’s I-poem

He defended his disagreement by stating, “I do care. If I am in a quiet place or not ‘cause if it’s not quiet, I get really frustrated and then I can’t work because I can’t concentrate on what I’m trying to do.” Originally, this I-statement was in a discussion about not caring who he sits next to in the classroom. Therefore, it seems that the open-ended nature of the I-poems may allow an individual to redefine who she or he is in a sense. I did not note such an occasion within conversations around the word trees, which I hypothesize is due to the manner in which

the branches of the word tree extend to the end of a sentence, therefore, being more inclusive of participants' words.

Lesson 4: Audibility of my Power as Researcher

I am not so naive to think that I could ever relinquish my power as a researcher within the member checking process with the adolescent participants in this study. Throughout the research study, I attempted to minimize the participant-researcher and adolescent-adult power dynamics by spending time with them in their natural setting in the classroom (Lahman, 2008), being mindful of the location and time of the interviews (Clandinin & Connelly, 2000; Freeman & Mathison, 2009), and allowing them to interview me at the conclusion of their interviews (Jossleson, 2007), to name a few. However, I never considered that a few of the female participants would verbally acknowledge and accept unquestionably my role as a researcher.

That it is okay because it is the way you want to write it and it's all right with me. I don't care the way you write it and all. I'm just the one who you are interviewing. I don't mind. It's the way things are. People change the way I say things sometimes. No, I said it that way. But it's okay if an adult does it because it's the way they want it. (Dottie)

This process was viewed as a way of helping me rather than a way to agree and/or disagree with how I had represented them, their identity, as a mathematics student. For example, the last statement made by Hannabell was "I hope it helps you."

Lesson 5: Permeable Boundaries

As with any study, this process was not without its flaws. I would argue that this process was limiting as the participants reflected on their own words and not my interpretation of their mathematics identity or specific voices beyond the construction of the I-poems around the voices that I labeled and defined through the use of the Listening Guide. To illustrate, Matthew expressed a Voice of Manipulation, which was a voice expressing actions he used to control or influence his teacher and/or peers. This voice was not explicitly voiced in Matthew's initial interview, but "hidden." Therefore, it was not possible to construct an I-poem using Matthew's words and hence, was not a voice that was confirmed or disconfirmed as part of the member checking process. So I ask, how did this process limit reflection on invisible voices or voices not explicitly expressed by participants in the initial interview?

Participants were also not able to reflect on my interpretations of how their multiple voices were in interplay one another (see Figure 5 for an example). The member checking process only allowed participants an opportunity to reflect upon their own words and meaning, and how one "voice" may have impacted or influenced the other(s), as opposed to my understanding as the researcher. How might participants have responded to my visual representation of their mathematics identity? The size of the circles? The direction of the arrows? The translucent color?

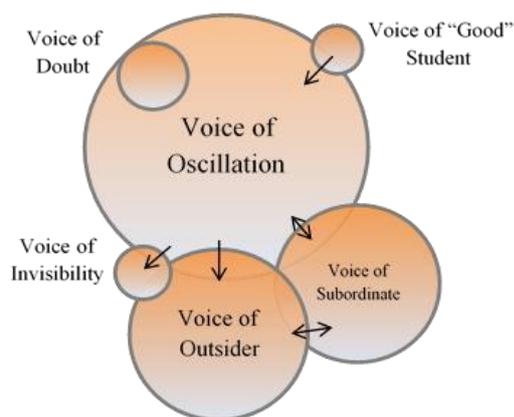


Figure 5. Visual representation of Emmeline's narrated mathematics identity, which I have termed a voice mapping.

I am also concerned that this process limited participants' ability to think beyond their "voices." Are they aware of other "voices?" How might the nature of the member checks and the selected I-poems and word trees in the validation interviews suppress or sanction particular voices? When asked if anything was missing, or if the I-poems and word trees captured them well, most agreed, and did provide further insights into their mathematics identity. At the time, I was ecstatic because it seemed that I captured most participant's multiple voices and I could move forward in completing my dissertation. However, I am now concerned how asking them to reflect on their voices in the moment may not have allowed for deeper reflection and additional meaning making. Yet, this presents a conundrum for me because I question the likelihood of adolescents taking their own time to reflect on their words.

Future Possibilities

One hope in describing my member checking process with adolescent students and what I have learned through this experience is that researchers will adapt the process to fit within their own research designs. Reflecting back on this experience, I would not have changed the inclusion of the I-poems as I have described the power of the I-poems for me and my participants. However, I would have omitted the word trees and instead utilized participants' voice mapping (see Figure 3) from the initial interviews as it was a visual representation of my interpretation of the interplay of voices composing one's mathematics identity. Thus, participants would not be reflecting back on their words as presented in the word trees.

I also see the potential to extend what I have presented here to be a transformative process for participants as they gain an understanding of oneself as a mathematics student (Harper & Cole, 2012; Reilly, 2013). Similar to that of Reilly (2013) who asked her participants to create poems from their individual transcripts, one possibility is allowing adolescents to pull out I-statements from their individual transcripts and rearrange them into I-poems that make sense to them about how they identify themselves as mathematics students. As stated by Dottie, this may allow participants to "open up like a book" because "[i]f you read these, you are kind of reading me. And if you're reading me, you know my math situation and you know how I'm doing it, and I'm just open." Participants creating their own I-poems builds upon this notion as it allows them the freedom to represent their selves in a manner that readers are able to "read" them or gain an understanding of who they are as mathematics students.

The process of member checking could potentially serve as a longitudinal study in which participants continually reflect on how they have or have not changed over a period of

time. As noted above, a few participants made such comments. In a way, this ongoing process would highlight how a participant's mathematics identity is emerging and evolving over a period of time. As we are *becoming* our voices, what voices become audible or more outspoken? What voices are silenced? Take for example, an I-poem created from Emmeline's validation interview from our discussion on an untitled I-poem (see Table 4). The original I-poem is on the left and the I-poem I created after this process is on the right. Imagine how an I-poem may read the following year when Emmeline is in 8th grade and in a classroom with different peers, a different teacher, and with different content. Might Emmeline still use words and phrases such as mad, confused, give up, or cannot do it?

Table 4. *Example of an I-poem Construction*

I get the question wrong	I think to myself
I feel embarrassed	I am getting mad
I didn't do	I got mad
I got confused	I erased so hard
I was confusing myself	I ripped
I am not	I cannot do it
I got it wrong	I get so confused
I got really mad	I said
I felt very embarrassed	I do not know
	I told her
	I told her
	I do not know
	I get mad
	I give up

Conclusion

The board is set, the pieces are moving. (J.R.R. Tolkien, Lord of the Rings).

This quote illuminates how member checking is defined as the final step in qualitative research; yet, the conversation should move to *how* to conduct member checks with participants, which should be dialogical and flexible. In this way, members contribute to the data analysis, and ultimately the knowledge construction, which is important especially when working with adolescents (Freeman & Mathison, 2009)

This paper is just one moving piece on the board as I have discussed and illustrated my member checking process with adolescents. For me, this process stemmed from my frustration in searching for how other researchers conducted member checks with participants, specifically, with adolescent participants rather than adult participants and a process that did not require readings of entire transcripts or narratives (e.g., Santoro, 2013). My hope is that this piece will serve as an example of one way to conduct member checking with adolescents and encourage other researchers to share their stories so that we can learn from one another in conducting this important work.

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