

Nurturing an Understanding of Trustworthiness in Cross-Cultural Doctoral Research: An Autoethnography Exploring Active Learning in Higher Education

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ABSTRACT

University leaders, researchers, students, and policymakers frequently call for increased active learning in higher education. Within this context, novice scholars grapple with how to meaningfully nurture an understanding of trustworthiness throughout the doctoral research process. This study addresses that gap by examining how an innovative reflexive binning system, grounded in the ICAP framework and informed by multilayered reflexivity, can help novice scholars develop an understanding of trustworthiness in cross-cultural doctoral research. Using autoethnography combined with visual vignettes, the study traces the author's development as a doctoral student learning to engage with qualitative inquiry in reflexive and relational ways. The study examines how developing a reflexive binning system served as a methodological tool for building an understanding of trustworthiness and how engagement with the system reflected progression across the modes of the ICAP framework. The reflexive bins system organizes data across literature, artifacts, experiences, and interviews while integrating structured generative questions and interactive dialogue. Multilayered reflexivity provides the analytic lens for examining how self, interpersonal, and collective dimensions of reflexivity shaped meaning-making across the research process. Two visual vignettes demonstrate how the system functions in practice, making visible the processes through which meaning is constructed, challenged, and refined. The manuscript suggests that reflexive bins foster a deeper understanding of trustworthiness by embedding active learning, reflexive engagement, and relational accountability throughout the research process. This study offers guidance to higher education professionals seeking to support doctoral students in strengthening their understanding of trustworthiness as they transition to independent scholars.

KEYWORDS: active learning, autoethnography, higher education, ICAP framework, reflexivity, visual vignettes

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Purpose and Positioning of the Article

Higher education continues to face increasing calls to expand active learning (Børte & Zeivots, 2026). These calls emphasize the need for educational experiences that move beyond passive engagement toward approaches that actively support knowledge construction and deeper understanding (Chi, 2021) through relational pedagogies (Gravett et al., 2024). Underlying these calls is the belief that without approaches that actively engage students in the learning process, they are less likely to develop the deeper knowledge and applied skills necessary to support meaningful practice beyond the university setting (McNally, 2026). Within this context, doctoral students are expected to develop complex research competencies (Pokidina, 2026), including the ability to nurture trustworthiness in qualitative inquiry (Olmsted, 2024). However, many novice scholars lack access to structured reflexive learning approaches that support the development of qualitative research competencies and epistemological understanding (Braun & Clarke, 2019; Pretorius, 2024), leaving them to navigate rigorous research practices with limited methodological guidance (Chaló et al., 2023; Creswell & Creswell, 2018; Skukauskaitė et al., 2018).

Braun and Clarke's (2021) reflection, beginning with the statement, "Of course we saturate, but..." (p. 201), illustrates how methodological concepts are normalized within research culture without students fully understanding their foundations. In recounting a postgraduate student's attempt to ask a question about saturation, one author interrupted the student before she could fully articulate her confusion, using the moment to challenge the assumption embedded in the question itself. Their discussion highlights how novice qualitative researchers may adopt methodological terminology and practices without fully understanding the theoretical assumptions that underpin them (Baker & Ahmed, 2025; Pretorius, 2024), reinforcing the need for structured, reflexive learning processes that support deeper methodological understanding rather than procedural replication (Braun & Clarke, 2019).

This manuscript addresses a gap between research on how students actively learn and its application in doctoral programs by translating active-learning principles into a structured, practice-based system. Drawing on the ICAP framework (Chi & Wylie, 2014), an innovative reflexive binning system operationalizes active learning by moving novice scholars beyond passive engagement with research toward deeper, more interactive forms of knowledge construction (Chi, 2021). For this project, active learning is defined as a process in which learners engage with content through progressively deeper levels of cognitive involvement, moving from passive reception to active processing, constructive meaning-making, and interactive co-construction of understanding, as articulated within the ICAP framework (Chi & Wylie, 2014).

Rather than simply organizing information, the bins require learners to engage in generative questioning, reflexivity, and interactive dialoguing, thereby aligning with the constructive and interactive modes of engagement central to active learning (Chi & Boucher, 2023). Thus, the study demonstrates how active learning can be embedded within everyday doctoral research practices (Chi, 2021). The reflexive bins function similarly to a High-Impact Practice (Schneider et al., 2026), integrating cognitive, relational, and reflective processes (Strauß et al., 2025), allowing doctoral students to construct understanding while making their analytic thinking visible. This approach addresses the research-practice gap by providing a concrete example of how active learning principles can be systematically enacted in higher education contexts (Posselt, 2018), particularly in developing complex research competencies such as understanding trustworthiness.

This autoethnography explains how I used elements of the ICAP framework (Chi & Wylie, 2014) to develop and implement a reflexive binning organizational system to nurture an

understanding of trustworthiness. I employed the reflexive binning system throughout multiple research cycles during my doctoral program (Clark, 2022a, 2022b, 2023, 2025, 2026; Clark & Miisamiinamska, 2026; Clark & Wylie, 2021). Cycle research, as implemented at Arizona State University (ASU), supports novice researchers in developing critical research skills while cultivating sustained habits of inquiry that underpin the doctoral dissertation (Buss, 2018; Vaughan et al., 2019).

Research Questions

RQ1. How does engagement with a reflexive binning system reflect progression across the passive, active, constructive, and interactive modes of the ICAP framework during doctoral research?

RQ2. How can the development of a reflexive binning system as a methodological tool nurture an understanding of trustworthiness for novice scholars performing qualitative inquiry?

Study Contributions

This study makes four contributions to the literature. First, it challenges the view of trustworthiness as a static methodological criterion by conceptualizing it as a learned research practice cultivated through sustained reflexive and relational engagement. Second, it bridges active learning research and qualitative methodology through an innovative reflexive binning system grounded in the ICAP framework, showing how a cognitive learning theory can be operationalized in doctoral research training. Third, it provides a transferable learning architecture to strengthen methodological competence and scholarly identity in doctoral education, offering a concrete model for programs seeking to support novice scholars as they develop the capacity to conduct rigorous, reflexive, and relationally accountable research. Fourth, it offers guidance to higher education professionals, doctoral faculty, and research mentors by illustrating how trustworthiness can be intentionally nurtured through structured opportunities for reflexivity, dialogue, and active engagement throughout the research process.

Method

This study employs autoethnography, visual vignettes, and multilayered reflexivity to examine how I developed an understanding of trustworthiness through a reflexive binning system grounded in the ICAP framework. These methods are integrated through a reflexive approach that critically examines how interpretations are constructed through relational and ethical engagement, ensuring that meaning-making remains attentive to context and to my evolving position within the inquiry.

Autoethnography

Autoethnography is a distinctive qualitative methodology that uses the researcher's autobiographical experiences as primary data to analyze and interpret sociocultural meaning (Cooper & Lilyea, 2022; King, 2019; Winkler, 2018). Drawing on traditions of narrative research, autobiography, and ethnography (Denzin, 2017), it situates the scholar within the social world being examined and invites sustained engagement with lived experience alongside broader contexts of inquiry (Denzin, 2019; Reed-Danahay, 2017; Sikes, 2022).

At its core, autoethnography positions the researcher as both subject and analyst (Adams et al., 2022), requiring a reflexive awareness of how personal history, assumptions, and experiences shape interpretation (Adams et al., 2017; Lyle, 2017). This dual role allows the researcher to move beyond summarizing existing ideas and instead generate knowledge from within the phenomenon itself, making visible the often-unspoken insights that emerge through practice and participation (Bochner & Ellis, 2022; Gannon, 2022). First-person writing becomes central to this process, as it opens access to nuanced understandings of context and meaning while tracing the evolving relationship between self and inquiry (Pithouse-Morgan et al., 2022; Lazard & McAvoy, 2020).

In tracing my development as an emerging scholar, autoethnography becomes the means through which I learn to produce trustworthy, reflexive research, moving from initial uncertainty toward a more confident and critically aware engagement with inquiry. I recall pausing over my early writing, unsure whether I was analyzing or merely describing my experience, and realizing that my hesitation revealed how deeply I had been conditioned to separate myself from the research. That moment marked a turning point, prompting me to reconsider how my voice, rather than compromising rigor, could strengthen it. Writing functions not simply as a way to present findings but as a generative process through which insight emerges in the act of composing itself (Pahl, 2019).

As ideas take shape on the page, analysis unfolds in real time, allowing reflection and interpretation to develop together (Miles et al., 2020). Writing becomes a way of thinking, where each sentence refines both the experience and my understanding of it. This process contributes to trustworthiness by making the analytical process visible, inviting readers to trace how interpretations form and engage with the narrative's resonance and transparency. Through this iterative engagement, learning about research and learning about oneself become inseparable, illustrating how knowledge emerges through the ongoing interplay of reflection, experience, and narrative meaning-making (Mozeley et al., 2025).

Introducing Vignettes

Just as autoethnography invites a deeper examination of lived experience and the environments individuals inhabit (Denzin & Giardina, 2024), vignettes offer detailed, expressive portrayals of life events that researchers observe and record (Miles et al., 2020). These narrative forms illuminate meaningful moments drawn from personal experience and offer focused representations of events considered representative or emblematic within a study (Saldaña, 2003). Within autoethnography, a vignette functions as a claim on meaning, revealing reflexive and self-forming dynamics as they unfold through writing (Huber, 2024).

When crafted with attention to detail, vignettes become concentrated, vivid, and compelling stories that demonstrate the researcher's presence and connection to context (Miles et al., 2020). Beyond description, vignettes serve as valuable tools for qualitative inquiry because they create space to examine the belief systems researchers bring into their work and how these shape their interactions with participants and settings (Jenkins et al., 2021; Kidd et al., 2022; Mathews, 2019). Their utility within autoethnography is well established, as demonstrated in studies that use vignettes to interrogate positionality and navigate complex relational dynamics, such as insider-outsider tensions and cross-cultural interactions (Haynes, 2013; Schuster, 2023; Pitard, 2016).

Building on this narrative capacity, visual vignettes extend vignette-based inquiry by integrating visual meaning-making with written reflection, thereby deepening reflexive engagement and expanding analytic possibilities (Becerra, 2026). Their effectiveness rests on the

central role of visual perception as a primary channel through which individuals interpret experience (Kristjánsson & Egeth, 2020; Mansell, 2020). Visual stimuli engage through an interplay of biological and social mechanisms. These mechanisms shape how images are interpreted and synthesized, engaging both conscious and unconscious pathways (Cohn & Magliano, 2020; Kress & van Leeuwen, 2020; Loschky et al., 2020).

Through this process, visual elements act as catalysts for exploring personal significance while also activating domain-specific knowledge shaped by context and experience (de Haas et al., 2019; Veale et al., 2017). Visual materials further evoke emotional responses, enriching interpretation and connection (Fox, 2021). By leveraging these perceptual and affective dimensions, visual vignettes allow researchers to craft representations that not only convey insight but also resonate with how individuals naturally see, feel, and make sense of the world, extending the analytic reach of this study through a more embodied and visually attuned approach (Kiefer et al., 2011; Shaw & Bagozzi, 2017).

Multilayered Reflexivity

Multilayered reflexivity provided the analytic framework for examining how my understanding of trustworthiness developed through the reflexive binning system. Drawing on Nicholls' (2009) framework, I attended to three interconnected dimensions of reflexivity that shaped meaning-making throughout the study. The first dimension focused on how my positionality, assumptions, and prior experiences influenced interpretation. The second dimension examined how understanding developed through dialogue and relational engagement with my cultural mentor. The third dimension situated these interpretations within broader cultural, historical, and ethical contexts. Together, these dimensions supported a systematic examination of how reflection, relational engagement, and co-constructed meaning nurtured trustworthiness.

Within this study, reflexivity functioned as a central practice of trustworthiness rather than a supplementary methodological exercise (Koopman et al., 2020). Trustworthiness in qualitative inquiry depends on transparent, deliberate practices that make visible how interpretations form, are challenged, and are refined throughout the research process (Stahl & King, 2020; Ahmed, 2024). Reflexivity supported this process by creating opportunities to examine how my assumptions, experiences, and relationships shaped both what I noticed and how I interpreted it. Rather than treating knowledge as objective or detached from the researcher, reflexivity encouraged ongoing scrutiny of the interpretive process itself and made analytic decisions more transparent and accountable (Braun & Clarke, 2019; Ide & Beddoe, 2024). In this way, reflexivity contributed to trustworthiness by allowing readers to trace how meaning developed across the study.

Reflexivity also strengthened trustworthiness by linking to relational accountability. Within cross-cultural qualitative inquiry, interpretations do not emerge in isolation but are produced through relationships that carry ethical responsibilities to people, communities, and systems of knowledge (Hughes et al., 2023). Through ongoing engagement with my cultural mentor, I was encouraged to reconsider assumptions, explore counternarratives (Chawla & Atay, 2018), and examine alternative interpretations. This relational process challenged the notion of a single interpretive authority and positioned meaning-making as a collaborative endeavor. As interpretations were questioned, clarified, and refined through dialogue, trustworthiness became linked not only to methodological rigor but also to accountability within relationships and to the responsibilities that accompany knowledge production (Wilson, 2008; Wildcat & Voth, 2023).

Data Sources, Analysis, and Trustworthiness

The reflexive bins served as the primary mechanism for operationalizing multilayered reflexivity. Across the domains, the bins provided structured opportunities to document observations, record reflexive responses, generate questions, and trace the evolution of interpretations over time. Reflexive prompts encouraged examination of positionality and assumptions, while cross-domain indexing facilitated triangulation across multiple evidence sources (Miles et al., 2020; Patton, 2015). Interactive dialoguing extended this process by allowing interpretations developed within the bins to be shared, questioned, and expanded through relational engagement. Consequently, the bins functioned as more than an organizational system. They became a visible record of how reflexivity, dialogue, triangulation, and relational accountability contributed to trustworthiness throughout the research process.

This study organized the primary materials analyzed within four interconnected domains of the reflexive binning system: literature, artifacts, experiences, and interviews. Each domain served as both an evidence repository and a site of active learning. Literature bins documented engagement with scholarly sources, artifact bins captured interpretation of documentary and cultural materials, experience bins recorded observations and place-based encounters, and interview bins preserved insights generated through interviews and relational dialogue. Across multiple research cycles, the reflexive binning system organized 381 evidence items across the literature, artifact, experience, and interview domains, creating a longitudinal record of reflexive engagement and analytic development.

Analysis of the 381 evidence items proceeded in two stages through a systematic, iterative coding process rather than a single sweep of the corpus. In the first stage, I read each entry across the literature, artifact, experience, and interview bins in full and evaluated it for evidence of movement across the ICAP framework's passive, active, constructive, and interactive dimensions. I used observable indicators drawn directly from Chi and Wylie's (2014) definitions: exposure to material was coded as passive; selection, recording, or organizing activity as active; generation of a reflexive response or inference not present in the source material as constructive; and documented exchange with my cultural mentor that visibly built upon, challenged, or extended a prior interpretation as interactive. In the second stage, I revisited each entry through the multilayered reflexivity framework, examining whether it also reflected self-reflexive, interpersonal, or collective dimensions of meaning-making and how engagement with the bins helped develop my understanding of trustworthiness. The two visual vignettes illustrate these broader analytic processes.

Cross-domain indexing followed a consistent structural convention across all four bin types. Each entry's index locator began with a letter indicating its domain, L for literature, A for artifact, E for experience, and I for interview, followed by a number reflecting the chronological order in which that entry was created within its domain. This numbering convention allowed entries to be tracked longitudinally within a single domain, while the letter prefix allowed immediate identification of domain across the full corpus.

The Bins Research Category, in this case Cultural Connectedness, was predetermined, like all categories within the reflexive binning system. At the same time, its definition emerged through engagement with scholarly literature. I applied this predetermined category consistently across all four domains as a deductive code (Bingham & Witkowski, 2022), ensuring that entries addressing the same underlying research focus could be identified and grouped regardless of their domain of origin. In practice, at each stage of analysis, I developed analytic memos (Chávez-Moreno, 2024)

informed by Nicholls's (2009) three-stage reflexivity model. These memos documented emerging insights, coding decisions, and reflexive considerations, supporting the transparent analytic work necessary to establish trustworthiness.

Each entry additionally carried a Bins Index, a set of cross-references linking it to related entries in the other three domains. For example, an artifact bin entry addressing the Carlisle enrollment application (A07) was directly linked to a corresponding experience bin entry (E03), interview bin entry (I01), and literature bin entry (L13), all of which engaged the same underlying research focus from a different evidentiary vantage point. This indexing structure allowed me to move quickly across the corpus to triangulate a single interpretation against evidence from multiple domains, rather than treating each bin as an isolated record.

Because this is a single-researcher autoethnography, no second coder independently verified these determinations. Instead, the design supported the coding process's trustworthiness through two internal mechanisms. First, every entry coded as interactive was, by definition, accompanied by a documented dialogic exchange with my cultural mentor, who reviewed, questioned, and responded to my interpretations in real time, functioning as a form of embedded collaborative reflection and relational checking rather than a retrospective validation step. Second, the cross-domain indexing system allowed me to trace whether an interpretation coded as constructive or interactive in one domain, for instance, an experience bin, was later corroborated, complicated, or revised by evidence in another domain, such as a related literature or interview bin, providing an internal form of triangulation across the corpus.

Across the full set of 381 entries, engagement was not evenly distributed across the four ICAP levels. The earliest entries in the corpus, particularly those developed during the first research cycle, were concentrated at the passive and active levels, consistent with my initial use of the binning system primarily as an organizational tool. Constructive and interactive entries increased substantially in later cycles, following the introduction of reflexive prompts and the beginning of sustained dialogue with my cultural mentor, a pattern that itself became part of the evidence supporting the developmental argument advanced in this study.

I selected the two visual vignettes presented here using three explicit criteria rather than general illustrative value. First, each vignette needed to contain a complete, traceable progression through all four ICAP levels within a single bin entry, rather than a partial or ambiguous progression, so that the mechanism being described could be shown in full. Second, each vignette needed to include a documented interactive exchange with my cultural mentor that was substantial enough to demonstrate co-constructed meaning-making, rather than a brief or superficial confirmation. Third, I deliberately selected the two vignettes to illustrate a structural difference in how relational accountability was engaged across bin domains. In the literature bins, engagement with Wilson's (2008) concept of relational accountability was prompted through the same two reflexive questions, applied identically across every literature entry regardless of the specific source under review, functioning as a fixed, repeatable instrument for entering the concept.

In the artifact, experience, and interview bins, by contrast, each entry began with a single generative question (Morris & Chi, 2020) tailored to that entry's specific content. Still, the dialogue that followed was not scripted in advance. Instead, each subsequent question emerged from my cultural mentor's response to the prior exchange, producing a chain of inquiry that could not have been planned before the conversation commenced. Visual Vignette 1, drawn from a literature bin, was selected to demonstrate this fixed, repeatable pathway to relational accountability. In contrast, Visual Vignette 2, drawn from an experience bin, was selected to demonstrate the tailored-opener-then-emergent pathway characteristic of the other three domains. Together, the two vignettes make

visible not only ICAP progression in isolation, but also this contrast between a standardized instrument and a responsive, dialogically generated pathway to the same underlying construct.

The following research journey provides the autoethnographic context for understanding how the reflexive binning system emerged, evolved, and came to function as a mechanism for reflexive learning. Tracing this developmental process helps illuminate how engagement with the bins contributed to my growing understanding of trustworthiness throughout the doctoral research process.

My Research Journey

My research journey began in a foundational course at ASU focused on reading and organizing academic literature. Early encounters with an article binning process (ASU, 2021) introduced in the course were marked by frustration, as the tool initially added complexity rather than clarity. Article binning is a structured practice designed to organize scholarly literature, yet in practice, it felt more restrictive than supportive. Working through this uncertainty independently, I began experimenting with the structure and gradually adapting it to support my understanding better.

The article bins were originally organized around five components: APA citation, connection to my problem of practice, summary, content, and codes. However, I found that this format limited deeper engagement. As I modified the bins by removing the summary and adding space to track additional authors and reflexive responses, the structure shifted from simple organization toward deeper analytic engagement.

Chi and Wylie's (2014) work further shaped this transformation by emphasizing deep cognitive strategies as central to meaning-making. Deep strategies involve connecting and integrating new information with prior knowledge while elaborating on the material. In contrast, shallow strategies rely on surface-level processing, such as repetition and memorization, without fostering deeper understanding (Chi et al., 2018). Their ICAP framework clarified how learning progresses through increasingly sophisticated forms of engagement, prompting me to move beyond surface-level processing and toward integrating ideas across sources (Chi, 2021). Accordingly, the bins became a space where my thinking developed in relation to the literature rather than apart from it.

Building on this foundation, I reimagined the article-binning approach as a comprehensive reflexive research binning process that expanded to include literature, artifacts, experiences, and interviews as interconnected research domains. Reflexive binning is a structured analytical practice that organizes diverse sources of research evidence into interconnected domains and supports reflexive meaning-making. Each domain contributed a distinct perspective while remaining relationally linked, enabling triangulation of evidence and a more comprehensive understanding of the research context (Miles et al., 2020; Patton, 2015; Suryani & Utami, 2020).

Learning to generate reflexive prompts did not come easily, and without a predetermined format, I struggled to know which questions would lead to deeper reflection. Gradually, I discovered that the most meaningful prompts emerged from the evidence itself rather than from a template. In practice, this meant generating reflexive questions as I engaged with each piece of evidence and refining my approach as my research skills and methodological understanding grew across research cycles.

Only after completing my doctoral program did I begin using generative AI to construct prompts directly from research artifacts. This practice falls outside the scope of the data and

analysis presented here, but it has continued to shape how I approach reflexive prompt generation in my ongoing scholarly work. This progression, from ad hoc questioning to a more deliberate manual practice, and eventually to AI-assisted prompt construction in subsequent work, itself reflects the developmental argument advanced throughout this study. The reflexive binning system was not a fixed instrument applied uniformly from the beginning, but a practice that matured alongside my growth as a novice scholar, with the evolution of the prompting process serving as additional evidence of that developmental trajectory.

Although my reflexive bins captured extensive research evidence, I came to recognize that they lacked a critical relational dimension required for Indigenist research (Wilson & Hughes, 2019). Recognizing this gap, I contacted a former student who had attended the school where I served as principal on the Blackfeet Nation (Clark & Miisamiinamska, 2026). Through our renewed connection, he became my cultural mentor.

This transition was particularly significant in my work with Indigenous students, where ethical accountability and relational responsibility are central (Hughes et al., 2023). Through ongoing dialogue with my cultural mentor, this approach challenged the notion of a single interpretive authority and created space for relationally grounded counternarratives (Ademolu, 2024; Chawla & Atay, 2018) to inform both interpretation and methodology. What started as a rigid framework gradually became more flexible, evolving into a lived practice. Through this practice, understanding was developed through interaction, relationship, and reciprocity (Pahl, 2020).

The relational engagement with my cultural mentor unfolded through a cross-cultural process of structured interactive dialoguing (Chi & Wylie, 2014). Grounded in a sociocultural perspective on learning (Jeong et al., 2022), this approach positioned dialogue not simply as a means of communication but as a primary mechanism through which cognitive and social development occurs via the co-construction of meaning (Heron et al., 2026). The dialogic exchange guided reflexive inquiry through sustained relational interaction and foregrounded collaborative meaning-making. Within these interactions, generative questions (Chi, 2021) served as openings (Halle-Erby, 2022), shaping dialogue that fostered collaborative reflexivity (Miyahara & Fukao, 2022).

For example, as part of the interactive dialoguing process illustrated in Visual Vignette 2, the question, “How might viewing these sites help you understand the holistic relationship Indigenous people have with living and nonliving entities?” functioned as a generative prompt because it required meaning to be constructed beyond surface-level observation toward a deeper, relational understanding of interconnected systems. In this way, a generative question requires learners to construct a response by generating new knowledge beyond the information immediately presented (Morris & Chi, 2020).

This approach aligns with Chi’s (2009) explanation that questioning becomes most powerful when learners pose questions that reshape existing ways of thinking, prompt inference, and foster reflection on their own learning processes (Roscoe & Chi, 2007). Adding reflexive prompts shifted the bins’ purpose from managing information to examining how my positionality shaped interpretation (Hernandez-Carranza et al., 2021; Ide & Beddoe, 2024).

As my work progressed, the reflexive bins grew into a substantial repository of research evidence, organized across multiple categories and linked by a structured system of identifiers that allowed me to trace connections across domains. Over time, the system became more than a methodological tool. It made the analytic process visible, revealed connections across data sources, and mapped the development of my thinking, offering a visible enactment of how knowledge, interpretation, and trustworthiness develop through inquiry.

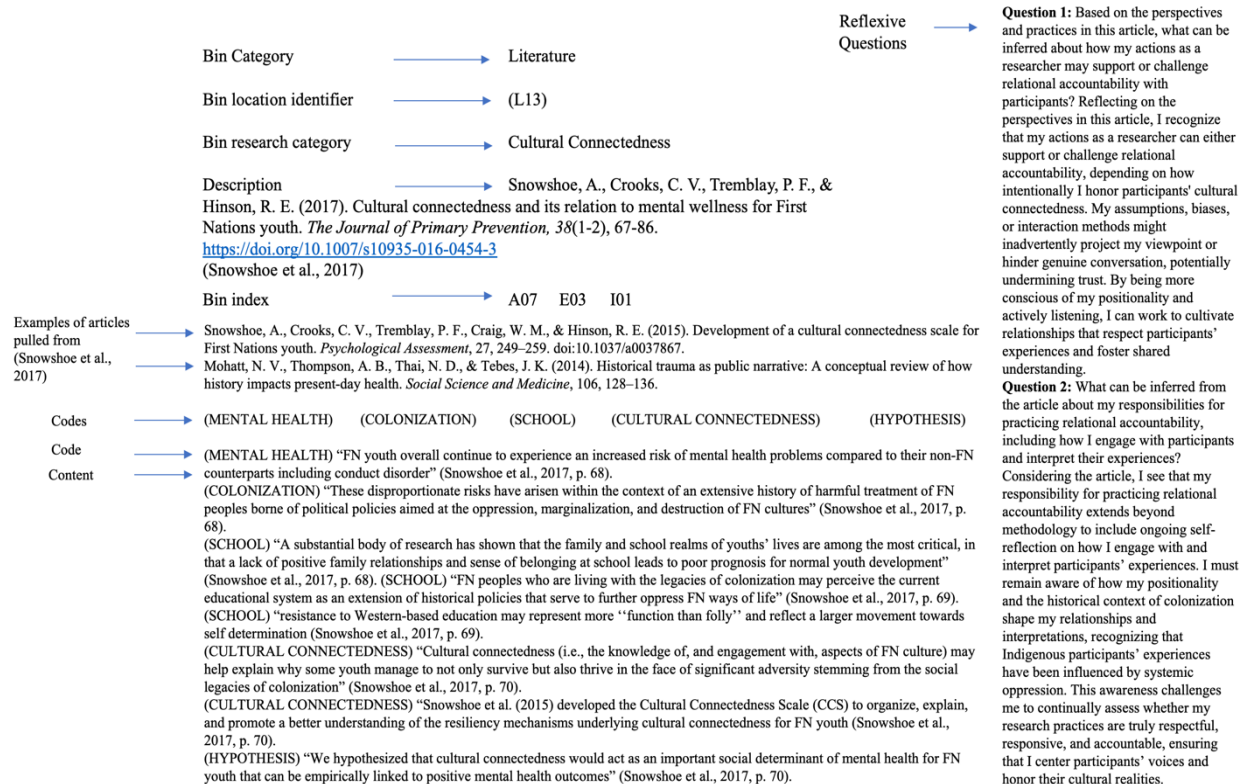
Visual Vignettes

To illustrate how this reflexive binning system functioned in practice, I present two examples drawn directly from my analytic work, labeled as Visual Vignette 1 and Visual Vignette 2. Visual Vignette 1 is drawn from the literature bin, while Visual Vignette 2 emerges from the experience bin. The vignettes are illustrative cases drawn from a much larger corpus of reflexive bins developed across the four domains, selected to make visible the processes through which understanding and trustworthiness emerged. These vignettes make visible how the bins operated as sites of meaning-making, where literature, experience, and reflection intersected to shape interpretation. Each example demonstrates how reflexive prompts, relational dialogue, and multiple sources of evidence came together to deepen my understanding while maintaining transparency in the analytic process.

By presenting these visual vignettes, I show not only what I came to understand but also how that understanding emerged through the evolving structure of the reflexive bins, making the analytic process visible and demonstrating how transparency, reflexive engagement, and the integration of multiple data sources nurtured my understanding of trustworthiness.

Visual Vignette 1

Partial representation of Literature Bins for Snowshoe et al. (2015)



Note. This visual vignette presents a partial representation of a literature bin from the reflexive binning system used during my doctoral research. The figure illustrates the broader analytic process described in the study. Engagement with this article contributed to the development of a cultural connectedness survey that was later used in the doctoral research, illustrating how the literature bin functioned as a site of constructive meaning-making, where engagement with scholarly literature informed subsequent methodological decisions.

Visual Vignette 1: Reflexive Literature Bin Demonstrating ICAP Progression

Visual Vignette 1 presents a structured example of a reflexive literature bin entry. It illustrates how engagement with a single scholarly article progressed across the levels of the ICAP framework, moving from passive exposure to interactive knowledge construction. The vignette is organized around a literature bin labeled (L13), categorized under Cultural Connectedness, and anchored by Snowshoe et al. (2015). The bin includes organizational identifiers, coded excerpts, reflexive responses, and cross-domain indexing, providing a traceable record of analytic development.

At the passive level, I began by reading the article and engaging with the authors' discussion of cultural connectedness and its relationship to mental wellness among First Nations youth. At this stage, I interacted with the text by receiving information without transforming it, focusing on key concepts such as colonization, school influence, and cultural resilience. This level of engagement is reflected in the inclusion of the full APA citation and initial familiarity with the article's central arguments.

Engagement progressed to the active level as I began extracting and organizing key excerpts from the article. This process involved selecting relevant passages, categorizing them under thematic codes such as Mental Health, Colonization, School, and Cultural Connectedness, and recording page numbers. Through this activity, I was physically and cognitively engaged with the text, yet my interaction remained largely focused on identifying and organizing information rather than transforming it.

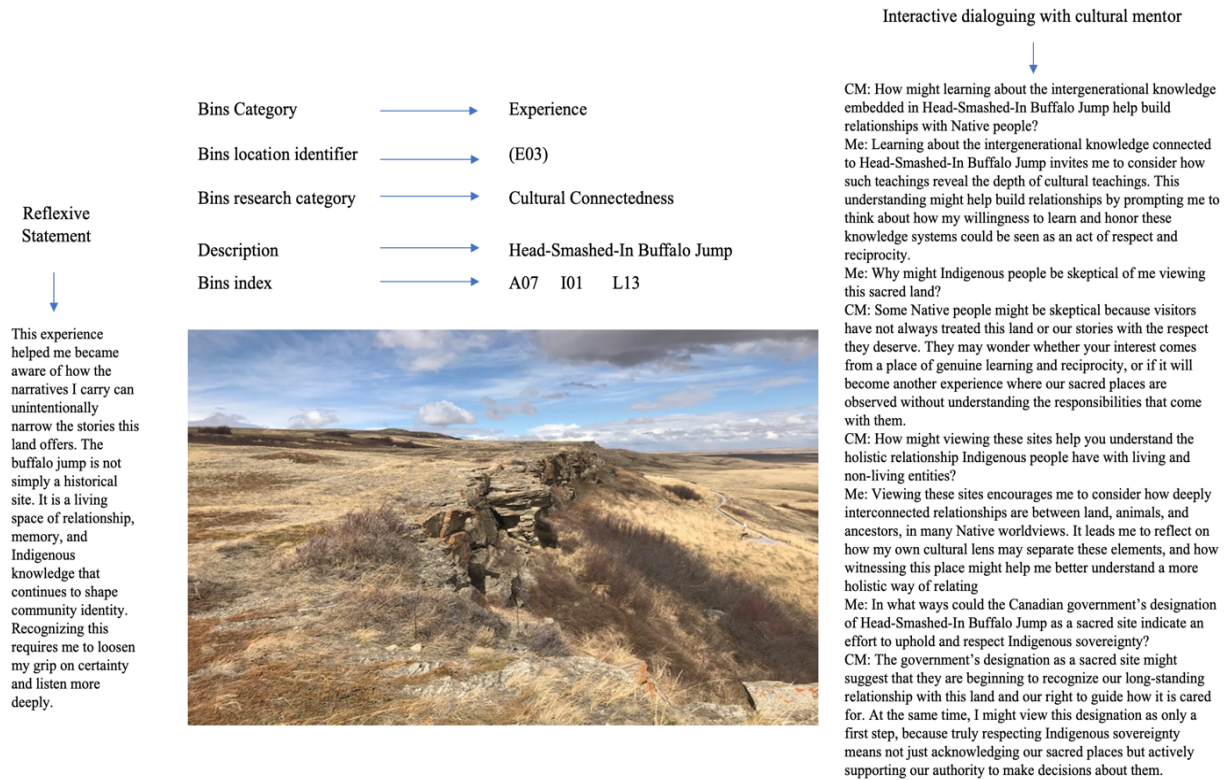
At the constructive level, my engagement deepened as I began generating meaning beyond the text itself. This shift is evident in my reflexive responses to structured prompts guided by Wilson's (2008) concept of relational accountability. In responding to questions about how the article supports or challenges relational accountability, I moved beyond summarization to infer implications for my own research practice. I examined how my positionality could influence interpretation and considered the ethical responsibilities involved in representing participants' cultural identities. This stage reflects self-explanation, which Chi (2009) characterizes as a constructive inferencing activity that enables learners to generate new understandings not explicitly provided in the original article.

Finally, the vignette demonstrates interactive engagement, in which self-explanations (Chi et al., 1989) were not confined to individual reflection but were shared, questioned, and expanded through dialogue. This process unfolded through relational conversations with my cultural mentor, who challenged my initial interpretations and introduced alternative viewpoints that extended our thinking. In this way, the self-explanations generated during the constructive phase served as a foundation for further inquiry, with each of us building on and elaborating on the other's ideas. Through this interaction, we co-constructed understanding rather than developing it in isolation. As ideas were exchanged, challenged, and refined, new meanings emerged that extended beyond those generated through individual self-explanation alone, reflecting the interactive process of collaborative knowledge construction described within the ICAP framework (Chi & Wylie, 2014).

This progression across ICAP levels illustrates how the reflexive binning system transforms engagement with literature into an active learning process. The bin not only documents what was read but also makes visible how understanding evolved through increasingly sophisticated forms of cognitive engagement. By capturing this progression, the vignette demonstrates how

trustworthiness is nurtured through transparent, traceable, and relationally grounded analytic practices.

Visual Vignette 2
Partial representation of Experience Bins



Note. This visual vignette presents a partial representation of an experience bin from the reflexive binning system used during the author's doctoral research. The figure illustrates the broader analytic process described in the study. The author took the photograph during a site visit, and it catalyzed reflexive inquiry and interactive dialogue.

Visual Vignette 2: Reflexive Experience Bin Demonstrating ICAP Progression

Visual Vignette 2 presents an experience-based reflexive bin entry and illustrates how engagement with a place-based encounter unfolded across the levels of the ICAP framework, moving from initial observation to relationally co-constructed understanding. The vignette is organized as an experience bin labeled (E03), categorized under Cultural Connectedness, and centered on a visit to Head-Smashed-In Buffalo Jump. The entry includes a visual image of the site, a reflexive statement, cross-domain indexing (A07, I01, L13), and a record of interactive dialogue with a cultural mentor, collectively documenting the evolution of analytic engagement.

At the passive level, engagement began through direct exposure to the site. I observed the physical landscape, including the cliffs, open plains, and environmental features, taking in the visual and spatial elements without yet transforming or interpreting them. At this stage, the experience functioned as an encounter, where meaning had not yet been actively constructed but was grounded in sensory awareness and initial perception.

Engagement progressed to the active level as I documented and organized elements of the experience. This included capturing a visual image, assigning the bin to a research category, and recording identifiers that linked the experience to broader domains of inquiry. I also began to describe the site as a historical location connected to buffalo hunting practices. These actions reflect active engagement through selection, recording, and organization, while remaining close to surface-level interpretation.

At the constructive level, engagement deepened through reflexive meaning-making. This shift is evident in the reflexive statement accompanying the vignette, where I moved beyond description to consider how my own assumptions shaped my understanding of the site. I recognized that the buffalo jump is not simply a historical location but a living space of relationship, memory, and Indigenous knowledge. This recognition required honoring Indigenous ways of knowing on their own terms rather than filtering them through Western epistemological assumptions (Smith, 2022). Through this process, I developed an understanding that extended beyond the immediate encounter.

Finally, the vignette demonstrates interactive engagement, where meaning was co-constructed through dialogue with my cultural mentor. The section titled Interactive Dialoguing captures a back-and-forth exchange in which we shared self-explanations (Chi et al., 1989), asked questions of one another, and built on each other's interpretations. These interactions, consistent with Chi and Wylie's (2014) conceptualization of interactive engagement, went beyond individual meaning-making as our self-explanations became objects of inquiry, questioned, elaborated, and refined through dialogue. This process challenged our initial interpretations and prompted us to reconsider the site through relational and cultural perspectives. Inference-generating questions guided the dialogue, encouraging deeper reflection on how knowledge is learned, interpreted, and situated within broader systems of meaning. Through the reciprocal exchange, new insights emerged that neither of us had fully articulated on our own, illustrating the collaborative knowledge construction characteristic of interactive engagement.

This progression across ICAP levels illustrates how the reflexive binning system transforms experiential encounters into an active learning process grounded in relational accountability. The vignette makes visible how understanding developed through increasingly sophisticated forms of engagement, moving from observation to reflection and ultimately to co-constructed meaning. By documenting this process, the experience bin demonstrates how trustworthiness is supported through transparency, reflexivity, and the integration of multiple sources of knowledge.

Together, Visual Vignettes 1 and 2 demonstrate how the reflexive binning system supports active learning through progression across the ICAP framework. The literature bin illustrates how engagement with scholarly texts moves from exposure to generative interpretation, while the experience bin shows how place-based encounters evolve from observation to relationally grounded understanding. Across both vignettes, learning advances through increasingly sophisticated forms of engagement, culminating in interactive processes where meaning is co-constructed through dialogue, reflexivity, and cross-domain connections. This parallel progression highlights how the reflexive binning system embeds active learning within the research process, making visible how understanding develops over time while simultaneously strengthening trustworthiness through transparent, reflexive, and triangulated analytic practices.

Throughout the reflexive binning system, each mode of engagement aligned with the ICAP framework (Chi & Wylie, 2014). Passive engagement was reflected in my initial exposure to literature and experiences through reading and observation. Active engagement occurred as I selected, recorded, and organized data within structured bins. Constructive engagement emerged

through reflexive writing and cross-domain comparison, where I extended meaning beyond the source. Interactive engagement was realized through dialogue with my cultural mentor, where interpretations were challenged, refined, and co-constructed through generative questioning. This mapping demonstrates how the reflexive binning system operationalizes active learning by embedding forms of engagement that move from individual to relational meaning-making directly into the research process.

Discussion

This manuscript presents a compelling case for how novice scholars, who often find the concept of trustworthiness in qualitative inquiry difficult to grasp (Cypress, 2017; Goodman et al., 2020), can nurture it through reflexive bins. Many early-career scholars lack methodological preparation and remain insufficiently aware of their epistemological assumptions, limiting their capacity to conduct nuanced qualitative research (Braun & Clarke, 2021; Pokidina, 2026).

In qualitative research, trustworthiness refers to the extent to which findings are credible, authentic, and well supported (Patton, 1999). Qualitative researchers strengthen trustworthiness through deliberate, transparent practices that allow readers to trust both the process and the results (Stahl & King, 2020). However, as qualitative datasets grow larger, maintaining this level of rigor becomes increasingly challenging because managing and organizing extensive data can threaten the study's coherence and transparency (Bingham, 2023).

Existing conceptualizations of trustworthiness in qualitative research have been articulated most influentially through Lincoln and Guba's (1985) four criteria of credibility, transferability, dependability, and confirmability, a framework that remains foundational across the field decades later. This criteria-based approach has often been operationalized through standards and strategies for evaluating whether qualitative studies demonstrate credibility, transferability, dependability, and confirmability, including practices such as member checking, thick description, and audit trails. Recent scholarship identifies reflexivity, prolonged engagement, thick description, and collaboration as strategies for strengthening trustworthiness in autoethnography (Andrzejewski et al., 2026). This approach has served qualitative research well, but it often positions trustworthiness primarily as a property to be demonstrated rather than a capacity to be developed. It offers little guidance on how a novice researcher actually comes to understand what these criteria require in practice, particularly in cross-cultural or relationally complex research contexts.

The reconceptualization advanced in this study does not replace Lincoln and Guba's criteria. Rather, it shifts the operative question. Where the criteria-based view asks whether a study demonstrates credibility or dependability, the developmental view advanced here asks how a researcher learns to recognize, enact, and sustain those qualities across a project's lifespan and what conditions make that learning possible for scholars encountering these expectations for the first time. This shift matters methodologically because it relocates trustworthiness from endpoint evaluators apply to finished work toward a competency that doctoral programs and research mentors can intentionally cultivate throughout training. It offers a concrete answer to a question the existing literature has left largely unaddressed, not simply what trustworthiness requires, but how novice scholars come to understand and enact it.

To understand how the reflexive binning system nurtured my understanding of trustworthiness, I came to see multilayered reflexivity and the ICAP framework as deeply connected rather than separate methodological ideas. Nicholls' (2009) multilayered reflexivity framework helped me see reflexivity unfold across self-reflexivity, interpersonal reflexivity, and

collective reflexivity, while the ICAP framework helped me understand how those reflexive movements reflected increasingly complex forms of active learning (Chi & Wylie, 2014; Chi et al., 2018). Together, these frameworks made visible how trustworthiness developed through a progression from exposure, to organization, to interpretation, and ultimately to co-constructed meaning (Stahl & King, 2020; Tracy, 2020).

At the level of self-reflexivity, my engagement with the bins shifted from passive to constructive learning. Initially, I encountered literature, artifacts, experiences, and interviews through reading, observation, and recording. These early actions reflected the passive and active levels of engagement described above, as I received information and organized it into structured categories. However, as I began responding to reflexive prompts, my engagement became constructive. I was no longer simply cataloging evidence. I was generating meaning by questioning how my positionality, assumptions, and prior experiences shaped what I noticed and how I interpreted it (Ademolu, 2024; Hernandez-Carranza et al., 2021; Ide & Beddoe, 2024). In this way, self-reflexivity became an active learning process through which I learned to examine my own role in knowledge construction (Berry, 2022; Gannon, 2022). This developmental arc extended even to the prompting process itself. What began as ad hoc questioning without a defined structure matured into a deliberate, consistent practice as my methodological understanding grew, showing that trustworthiness was not simply demonstrated within the bins but enacted through how I engaged with them.

Interpersonal reflexivity extended this movement further by shifting the bins from an individual analytic space into a relational one. Through ongoing dialogue with my cultural mentor, my interpretations were questioned, clarified, and expanded. This aligned with the interactive level of the ICAP framework because meaning was not produced through solitary reflection alone but through the exchange of ideas (Chi, 2021; Chi & Wylie, 2014). The self-explanations I developed during constructive engagement became starting points for dialogue (Chi et al., 1989; Roscoe & Chi, 2007). As my mentor and I shared interpretations, asked questions, and built on each other's thinking, the bins became a site of collaborative knowledge construction (Mafle'o et al., 2022; Miyahara & Fukao, 2022). This process deepened trustworthiness by allowing interpretations to be reviewed, challenged, and refined within the relationship (Coleman, 2021; Morse, 2015; Stahl & King, 2020).

Collective reflexivity expanded this process beyond individual insight and interpersonal exchange by situating meaning within broader cultural, historical, and ethical contexts. In this layer, the bins helped me see that trustworthiness was not only a matter of procedural rigor but also of relational accountability (Hughes et al., 2023; Wildcat & Voth, 2023; Wilson, 2008). Through this shift, I began to understand that knowledge is produced within relationships and carries responsibilities to the people, communities, and histories it is connected to, requiring researchers to honor Indigenous ways of knowing rather than subordinate them to dominant research paradigms (Smith, 2022).

The cross-domain structure of the bins, including literature, artifacts, experiences, and interviews, revealed patterns, tensions, and counternarratives that could not be understood from a single perspective (Ahmed, 2024; Denzin, 2012). This collective movement complemented the interactive engagement described above by extending interpretation across multiple sources of knowledge, allowing patterns, tensions, and counternarratives to be examined within broader cultural, historical, and ethical contexts.

The findings suggest that reflexive bins nurture an understanding of trustworthiness by making reflexivity, dialogue, triangulation, and analytic decision-making visible and traceable.

Trustworthiness did not emerge because the bins organized data more efficiently. Rather, it emerged because the bins created repeated opportunities for reflexive, constructive, and interactive engagement with evidence, interpretations, and relationships. The organizational structure provided the conditions for learning, but ongoing questioning, dialogue, and reflexive meaning-making nurtured my understanding of trustworthiness. Through repeated movement across passive, active, constructive, and interactive forms of engagement, reflexive binning may help novice scholars learn not only what trustworthiness is but how to enact it in practice.

The visual vignettes played an important role in making this learning process visible. Rather than presenting trustworthiness as an abstract methodological principle, the vignettes provided concrete illustrations of how engagement progressed across passive, active, constructive, and interactive levels. By visually documenting analytic development, they allowed both researcher and reader to trace how interpretations emerged, changed, and were refined through reflexive and relational engagement. In this way, the visual vignettes served not merely as representations of the reflexive bins but as evidence of the developmental processes through which trustworthiness was cultivated.

The holistic design of the reflexive bins organizational system, grounded in the ICAP framework, supports novice scholars in developing the skills needed to produce thick description (Geertz, 1973) and rich description (Johnson et al., 2020). This design-level support matters because doctoral programs typically assume students arrive with strong descriptive writing skills, leaving this tacit competency untaught until the bins make it visible and practicable (Morse, 2015). The bins achieve this by scaffolding deep cognitive engagement strategies that integrate reflexivity, self-audits, prolonged engagement, triangulation, and relational checking as interconnected trustworthiness practices (Adler, 2022; Braun & Clarke, 2023; Coleman, 2021; Morrow, 2005; Posselt, 2018; Stahl & King, 2020).

The iterative processes inherent in reflexive bins generate detailed, contextual information that allows qualitative researchers to craft dense descriptions throughout every phase of the study, providing the depth readers need to assess credibility, transferability, dependability, and confirmability (Enworo, 2023). Designed to remain coherent and transparent even as data volume increases, the reflexive bins system responds to concerns raised by Bingham (2023) about maintaining trustworthiness in extensive qualitative studies by making analytic organization, decision-making, and reflexive engagement explicit and traceable throughout the research process.

The bins foster reflexivity through a multilayered approach interwoven with interactive dialoguing. Within this structure, inference-generating questions functioned as external scripts that guided collaborative inquiry and supported movement through increasingly complex levels of reflexive engagement before co-creating new meaning through interactive dialogue (Chi et al., 2018; Fischer et al., 2013; Strauß et al., 2025). In my design, the dialogic process blended elements of joint dialogue, in which both participants made substantive contributions to the concept under discussion (Chi, 2009). This process closely resembles reflexive participant collaboration, which Motulsky (2021) introduced to describe approaches in which participants and researchers share in meaning-making and analysis. This interactive dialogue not only facilitated co-construction of meaning across different worldviews but also served as embedded collaborative reflection and relational checking, allowing my cultural mentor to review, clarify, and validate interpretations in real time (Coleman, 2021; Morse, 2015). Through this integrative process, the bins positioned dialogue as both a cognitive and relational mechanism that advanced reflexivity, reinforced relational accountability, and enhanced trustworthiness by contributing to truth value (Noble & Smith, 2015; Urry et al., 2024; Wilson, 2008).

Building on this foundation, the reflexive bins also incorporated systematic self-audits. Audit trails are widely recognized as a means of demonstrating qualitative rigor because they document decisions made throughout the research process and show how the phenomenon under investigation is represented and interpreted (Ahmed, 2024; Goodman et al., 2020; Hayashi et al., 2019; Leung, 2015; Noble & Smith, 2015). However, Morse and colleagues (2002) caution that audit trails can become little more than records of decisions if they fail to show why those decisions were made, how sound they were, or how attentively and sensitively researchers engaged with the data. To address these limitations, the reflexivity and interactive dialogue central to the bins built on traditional audit trails by cultivating a living practice of self-auditing that kept me attuned to relational and ethical dimensions throughout the study (Skukauskaite et al., 2022).

The bins also offered a way to catalog and validate deep immersion in the study context through prolonged engagement. Through sustained presence, researchers develop nuanced familiarity with the setting, contributing to the contextual depth necessary for rich description (Andrzejewski et al., 2026). Developed over time rather than through isolated encounters, this familiarity allowed the descriptions grounded in the bins to move beyond simple accounts of participants' experiences toward detailed, multilayered portrayals of the cultural and contextual settings in which those experiences unfold (Morrow, 2005). The richness of these portrayals provides the contextual depth readers need to evaluate transferability (Ahmed, 2024; Hayashi et al., 2019).

The systematic organizational structure of the bins facilitated triangulation by integrating multiple sources of research evidence across the four domains. Triangulation reinforces trustworthiness by demonstrating that findings are not the product of a single lens but emerge from a thoughtfully integrated and evolving process of meaning-making (Ahmed, 2024; Fusch et al., 2018; Leung, 2015; Stahl & King, 2020). By comparing and cross-referencing data points, I identified consistencies and contradictions, refined interpretations, and deepened my understanding of relational dynamics (Morrow, 2005). In this respect, the bins became more than a storage system. They became an analytic structure that supported the ongoing refinement of meaning.

Reflecting on the integrated use of the reflexive bins shows how these processes operate not only as methodological tools but also as relational and ethical practices that shape the quality and credibility of qualitative research. Each element of the system reinforced the others, creating a dynamic learning process in which reflexivity, dialogue, triangulation, prolonged engagement, and self-auditing worked together to deepen understanding. Engaging with these interconnected practices revealed how my positionality, assumptions, and interpretive choices influenced both the research process and the relationships I developed within it. Rather than serving as isolated techniques for demonstrating rigor, these practices became mechanisms through which I continually examined, refined, and enacted trustworthiness throughout the study. This integration shifted my understanding of trustworthiness from a set of procedural criteria to an ongoing practice of reflexive and relational accountability.

Before engaging in reflexive binning, my analysis remained largely descriptive, focused on organizing and summarizing information rather than interrogating how meaning was constructed. Through this process, I developed the capacity to generate and refine interpretations through interactive engagement, particularly as sustained dialogue with my cultural mentor shaped my thinking. These interactions introduced counternarratives that disrupted taken-for-granted assumptions and expanded my worldview, prompting me to reconsider how knowledge is situated within relational, historical, and cultural contexts (Wildcat & Voth, 2023).

Rather than treating data as neutral or self-evident, I began to recognize how my positionality influenced what I noticed, prioritized, and interpreted (Ademolu, 2024; Hernandez-Carranza et al., 2021). This shift deepened my understanding of trustworthiness beyond procedural validation, reframing it as an ongoing relational practice grounded in complex accountability (Starblanket, 2018). In practice, this meant slowing down when my initial interpretation diverged from my mentor's, treating that divergence as information rather than something to resolve quickly in favor of my own reading.

The implications extend beyond qualitative methodology. Doctoral programs often emphasize research products such as proposals, dissertations, and publications while offering limited guidance on how methodological understanding develops over time. The reflexive binning system suggests that learning architectures that intentionally integrate organization, reflexivity, dialogue, and iterative meaning-making may help novice scholars develop research competencies in more visible and systematic ways. As a result, reflexive binning may offer doctoral faculty a practical framework for supporting methodological learning while simultaneously nurturing trustworthiness. Generative prompts may provide faculty with a practical mechanism for enhancing graduate student socialization by creating structured opportunities for dialogue, reflection, and engagement within academic communities (Gardner, 2010; Abdul-Rahaman et al., 2022; Cameron et al., 2024; Yang & Xiangming, 2025). In this sense, reflexive binning may promote doctoral socialization by encouraging “active mentorship and support of students’ academic sense of belonging and self-concept, contributing to the successful completion of the doctorate” (Bahnsen et al., 2025, p. 308).

This study contributes to the literature by integrating the ICAP framework, multilayered reflexivity, and trustworthiness within a single organizational system that supports doctoral learning. By integrating cognitive engagement, reflexive practice, and relational accountability, the reflexive binning system illustrates how learning theories can inform doctoral research practices and support the development of more reflexive, methodologically aware scholars.

This study advances active learning research by demonstrating how the ICAP framework can be operationalized within doctoral research training through a structured, practice-based approach. In doing so, it directly addresses Chi’s (2021) concern that, despite a substantial body of research on how students learn, these insights have not been consistently translated into active learning practices in higher education. By embedding ICAP-aligned strategies such as generative questioning, self-explanation, reflexive writing, and interactive dialoguing within the research process, the reflexive binning system provides a concrete model for transforming learning theory into actionable practice. Thus, reflexive bins serve as a methodological bridge between learning how to conduct research and becoming a scholar capable of producing credible, transparent, and relationally accountable work.

Viewed through the combined lenses of ICAP and multilayered reflexivity, the findings suggest that researchers learn trustworthiness through practice, engaging with evidence, questioning assumptions, participating in dialogue, and revisiting interpretations across multiple sources of knowledge. From this perspective, methodological rigor is achieved through sustained engagement with the cognitive, relational, and ethical dimensions of inquiry. The reflexive binning system made this developmental process visible by documenting how understanding evolved through interaction and reflection and by showing how active learning and reflexive practice contribute to trustworthy qualitative research. Consequently, trustworthiness becomes not merely a standard for evaluating research but a developmental outcome of learning itself.

Limitations

This study has several limitations that stem directly from my role as the sole researcher and author, and readers should consider them when interpreting the findings. First, because I conducted this study as a single-researcher autoethnography situated within one doctoral program's cycle research model at Arizona State University, the findings reflect my own developmental trajectory within a specific institutional and methodological context. As the author, I developed the reflexive binning system in response to the expectations, structures, and research practices of that particular context. I therefore cannot assume its applicability to doctoral programs operating under different disciplinary, institutional, or epistemological conditions without further study.

Second, the visual vignettes I present in this article are necessarily partial. Although I selected them to illustrate key features of the reflexive binning system, they represent only a small portion of the much larger body of reflexive bins I developed across multiple research cycles. As a result, the vignettes I chose to include demonstrate the system's logic and function but cannot fully capture the complexity, depth, or variation I experienced over time.

Finally, because this is an autoethnography, my findings rely in part on my own memory work and retrospective interpretation. Although the reflexive bins and visual vignettes I created provided extensive records that supported reconstructing events and developing my analysis, my memories remain selective and are continually shaped by my present understanding. Consequently, readers should understand the narrative I present here not as an objective reconstruction of past events, but as my reflexive account of how I experienced, interpreted, and came to understand meaning over time.

Future research

Future research might examine how reflexive binning functions across disciplinary contexts, doctoral programs, and qualitative traditions. Comparative studies involving multiple doctoral students could help determine whether the developmental processes identified in this autoethnography extend beyond a single researcher's experience. Such research might explore how students at different stages of doctoral development engage with reflexive bins and whether similar patterns of movement across passive, active, constructive, and interactive forms of engagement emerge over time.

Beyond mapping these engagement patterns, researchers might also probe the underlying mechanisms that drive movement between them. Given this connection to Chi's ICAP framework, future work might also expand on Chi's related concept of self-explanation as an area ripe for study, examining whether the act of articulating rationale within reflexive bins functions as a self-explanation mechanism that drives researchers from passive documentation toward more constructive and interactive engagement with their data and decisions.

Finally, future research could examine the role of emerging technologies, including AI-supported organizational tools, in extending reflexive binning practices. Such work may help determine how technological supports can enhance rather than replace reflexive and relational engagement while maintaining the transparency, accountability, and trustworthiness essential to qualitative inquiry. Collectively, these lines of inquiry would help establish whether reflexive binning represents not only a personal methodological innovation but also a transferable framework for supporting advanced research learning and scholarly development across higher education contexts.

Conclusion

This study shows that trustworthiness in qualitative inquiry is not a final checkpoint but a practice embedded across the entire research process. Through the development and use of reflexive bins, trustworthiness becomes visible, iterative, and relational, grounded in ongoing reflexivity nurtured through interactive dialoguing. By turning abstract criteria into structured, traceable actions, the reflexive binning system offers novice scholars a practical pathway to build rigor while staying attentive to ethical responsibility and positionality. This suggests that reflexive binning can embed active learning within doctoral inquiry, turning the research process into a developmental space where novice scholars learn not only to demonstrate trustworthiness but to understand how it is built.

Conflicts of Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

N/A

Ethics statement

This autoethnographic study draws upon materials and experiences developed during my doctoral research, which received the required institutional and Tribal IRB approvals. My cultural mentor agreed to serve in that role throughout that research and was included in the Tribal IRB approval. I was the sole author of this manuscript.

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Notes on Contributor

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