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Understanding the Early Impacts of School Mentors' *Ethics of Care* on Filipino Gen Z Novice Science Educators' Informal Professional Learning

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Abstract

Care-centric mentorship plays a pivotal role in helping novice educators successfully adapt to the realities of academic institutions. As members of Generation Z begin to enter the teaching profession, they encounter a noticeable lack of formal mentorship and learning platforms tailored to their unique generational characteristics. Consequently, they turn to informal school mentors for guidance and support during this critical phase of their early careers. This study employed a Husserlian phenomenology to uncover the essence of the early impacts of the Ethics of Care provided by school mentors on the informal professional learning of Filipino Generation Z novice science teachers. Ten participants were purposefully selected from a strategic region in the Philippines, employing semi-structured interviews as the data collection method. The field texts were analysed using Colaizzi's procedural steps to distil the phenomenon's essence. The findings were validated through the member checking procedure and the critical friend technique. Based on the thematically analysed participants' interviews, the study introduces the *Typology of Ethics of Care-driven Informal Professional Learning*, which comprises three distinct learner personas: the *Mindful Member*, the *Grounded Inquirer*, and the *Utility Thinker*. Shaped by caring encounters with informal mentors, each persona encapsulates focal points, fostering antecedents and formative impacts, reflecting their dynamic takeaways. These insights can inform contemporary educational organisations and school mentors in implementing evidence-based mentorship strategies and professional development interventions, ensuring contextual support that empowers this cohort to navigate institutional roles effectively and contribute meaningfully to their educational communities.

Keywords: Ethics of Care, mentorship, informal professional learning, Gen Z, phenomenology

1. Introduction

The emergence of Generation Z, born between 1997 and 2012 (Dimock, 2019), as professional workers is increasingly felt across industries (Hendriana et al., 2023). Shaped by the advent of social media, this cohort exude neoliberal perspectives, unconventional work ethics, and distinctive institutional commitments (Gaidhani et al., 2019). In the academic milieu, talent capital shifts ignited by the impending retirement of the school administrators from the earlier generations, coupled with the projective studies that the millennials will begin to occupy the upper echelons of the hierarchy by 2025 (Omilion-Hudges & Sugg, 2019), brought changes on the dynamics of contemporary academic institutions. Consequently, educational scholars far and wide are now focusing on the legacy of outgoing school leaders and preparing millennial academic managers for future influencing roles (Obmerga, 2024), alongside exploring the psyche, attitudes, and behaviours of the youngest entrants into the education sector.

The professional inclinations of Generation Z (hereafter referred to as "Gen Z") call for flexible environments attuned to their authentic work needs. In education, longstanding onboarding programs often subscribe to a normative-functionalist approach, strategically inducting new teachers and leaders through transition programs and didactics to accelerate adaptation to school systems (Lumby, 2014). However, since the generation under the spotlight has been portrayed as unpredictable, reactive, and defiant (Lazăr, 2023), it is still uncharted if they will embrace the rigid pathways for professional learning that will be curated on their behalf.

1.1. Professional Learning and Gen Z

Compounding the concerns about Gen Z's adaptation to formal learning is the lacklustre professional development platforms among contemporary academic institutions, which only centre on brief job orientations, performative dialogues, and sporadic training borne out of clamour (Shanks et al., 2022). Professional learning, often used interchangeably with professional development, not only encompasses skill acquisition among teachers but also deepens their engagement with organisational citizenship (Bobis & Tripet, 2023). Its primary type, formal professional learning, focuses on regimented efforts to enhance competencies and prepare employees for expected roles (Barton & Dexter, 2020). While this learning mode may seem the logical method for helping novices acclimate to organisational life, recent research suggests that it may not ensure sustained acclimatization throughout various career stages (Burt & Jones, 2023).

Gen Z engages in freewheeling activities that resonate with their worldviews and sensibilities, helping them understand the nuances behind their work engagements (Martín-García & Dies-Álvarez, 2024). This deeply-seated inclination drives them toward non-formal and informal learning options to maintain professional growth and anchorage with organisational goals. Beyond the non-formal learning route through seminars, workshops, and training conducted outside of working hours, informal learning enables continuous and organic learning experiences, supporting professional growth as an inherent part of daily work interactions and routines (Kyndt et al., 2016). Due to its incidental occurrence, informal learning gradually contributes to the formation of professional *ethos* (belief) and *personae* (identity) among new teachers, which could shape long-term practices (Hager, 2012).

1.2. Informal Professional Learning, Mentorship, and Science Teachers

In stark contrast with their counterparts in humanities, science educators devote significant time and effort preparing for laboratory sessions, sensemaking technical lessons, and outsourcing teaching equipment. These steep learning curves are further complicated by the necessity of adapting to new school environments. School administrators often operate under the misguided assumption that university education alone adequately prepares novice teachers for the multifaceted demands of academic institutions (Mokoena & van Tonder, 2024). Considering the glaring instability in providing structured professional learning opportunities across schools, it is imperative to capitalize on available resources to ascertain novice educators' competence. As informal professional learning remains a consistently available avenue, academic institutions should position it as a critical pillar within the broader paradigm of professional growth, recognizing its pivotal role in imbibing well-rounded teacher development (Dogan et al., 2016).

Given that previous generations of science educators have profoundly influenced the standards for thriving in science education, even without organisational support, there is a dire need to assess whether Gen Z will demonstrate similar adaptability (Honeybun-Arnolda & Obermeister, 2019). During the initial phases of educators' careers, the lack of a consistent support system, including peer learning and mentorship, amplifies work-related stress and turnover intentions, emphasizing the urgent need for effective mentorship networks (Blonder & Vescio, 2022). With sufficient mentorship, these educators can establish a solid foundation for professional learning, enhancing their capacity to navigate complex instructional and organisational responsibilities successfully.

1.3. Mentorship and Ethics of Care

Whether inward-tending or outside-looking, professionals who engage in informal learning within the workplace often seek out a more knowledgeable other who can mentor them (Demirbilek & Keser, 2022). Given the critical nature of educators' novice years, typically the first three years (Curry et al., 2016), exposure to a caring mentor not only helps prevent '*praxis shock*' (Kelchtermans & Ballet, 2002, p. 105) but also instils enduring personal and professional values that support their advancement and success in the workplace. However, Gen Z's stereotypical notoriety for individualism and resistance to forging interpersonal connections may hinder their relationships with mentors, potentially derailing any promising partnerships.

By and large, to mitigate friction in interactions, scholars have pointed to Gilligan's (1987) *Ethics of Care* as a humanistic approach that could be applied implicitly or explicitly within organisations. In the context of mentorship, Ethics of Care emphasizes empathy and support, prioritizing relational factors over adherence to policies (Kim, 2023). This altruistic act is the antithesis of Ethics of Justice, which focuses on fair proceedings and compliance rates (French & Weis, 2000).

Mentors who embrace Ethics of Care cultivate meaningful interactions with colleagues, showing concern during challenging times and providing individualized support to assist them in hitting the ground running in the workplace (Oberhauser & Caretta, 2019). Considering the inconsistencies in the delivery of professional learning platforms within modern educational institutions, a supportive, care-driven environment may compensate for these shortcomings and

help new Gen Z teachers maximize their potential and derive meaning from their early organisational experiences.

1.4. Overarching Blank Spot and Central Question

Despite its relevance, the Ethics of Care remains underexplored in institutional and school mentorship study domains (Tomkins & Bristow, 2023), particularly in developing countries in the Southeast Asian region, such as the Philippines. Positioning it at the forefront of organisational scholarship signals a fertile ground for insights into understanding the layer of participants' experiences. Hence, this unresolved gap in the extant literature warrants a preliminary qualitative exploration into the influence of care-driven informal mentorship on the professional learning of a unique demographic within 21st century schools. Taking the emic perspectives into account, the Filipino mentors and mentees' communitarian values, such as *Pakikisama* (Social harmony), *Pagkalinga* (Nurturance), and *Malasakit* (Compassion) (Landa-Jocano, 2006), may further dictate a peculiarity with the Gen Z educators' informal learning experiences.

Cognizant of the foregoing premises, this phenomenological inquiry sought to answer the central question: *How do a select group of Filipino Gen Z novice science teachers collectively interpret the early impacts of their care-driven school mentor on their informal professional learning?* This organisational phenomenon, incarnated in their lived experiences, is a text that needs to be read.

2. Methods

2.1. Research Design

The nature of the blank spot noted in the literature, the understanding of the essence of the early impacts of the Ethics of Care extended by informal mentors to the professional learning among the Filipino Gen Z novice science educators, was effectively surfaced by utilizing a Husserlian phenomenological design. As a potent qualitative paradigm, the descriptive type of phenomenology centres on the "*direct exploration, analysis, and description of a particular phenomenon, as free as possible from unexamined presuppositions while aiming at maximum intuitive presentation*" (Spiegelberg, 1975, p. 57).

As the inquiry purported to surface the collective meaning behind the lived experience on the critical role that mentors' Ethics of Care assume in such a significant career phase of a progressive generation, utilizing the Husserlian phenomenology accorded the study with an impartial depiction of the participants' eidetic insights without the inherent biases of the researchers.

2.2. Research Participants and Locale

The depth and breadth of the layer of experience were gleaned from ten (10) participants. Eight (8) participants were initially recruited in the individual interview sessions. Upon reaching the saturation point of their responses, the researchers tapped two (2) additional participants to verify if such a condition had been attained. The participants were recruited using the purposive sampling technique with the following inclusion criterion: (a) natural-born Filipino citizen, (b) belongs to Gen Z (1997–2012), (c) a graduate of Bachelor of Secondary Education major in Science or a higher academic degree, (d) actively practising the teaching profession and

currently handle science-related subject(s) in their respective educational organisations, (e) whether a newly licensed professional teacher or about to take the board examination for educators, (f) not a recipient of formal professional development programs and not a member of any professional learning community in the school, and (g) willing to participate in the inquiry. The participants hail from Region IVA: CALABARZON, a rich melting pot of educational, cultural, political, and economic zones in the Philippines.

Table 1 summarizes the demographic profile of the participants.

TABLE 1. THE PARTICIPANTS' PROFILE (*N*=10)

Code	Age	Sex	Degree	Teacher Licensure Standing	Nature of School Affiliation	Teaching Experience	Grade Level Assignment	Science Subject(s) Handled
P1	24	F	M. Sc.	Passer	Private	2 y	JHS; SHS	IS
P2	24	F	BSEd	Passer	Public	1 y 3 m	JHS; SHS	IS; ELS
P3	22	F	BSEd	Taker	Public	1 y	JHS	GP; ELS; A
P4	24	F	BSEd	Passer	Public	1 y 6 m	SHS	ELS
P5	22	M	BSEd	Taker	Public	1 y	JHS; SHS	IS
P6	23	F	BSEd	Passer	Public	1 y 3 m	JHS; SHS	IS; ELS
P7	23	M	BSEd	Passer	Private	1 y 7 m	E; JHS; SHS	IS; GB; GP
P8	23	M	BSEd	Taker	Public	8 m	JHS	IS
P9	23	F	BSEd	Passer	Public	1 y 3 m	SHS	ELS
P10	23	F	BSEd	Taker	Private	1 y 4 m	JHS	IS

Legend: M. Sc.: Master of Science in Science Education; BSEd: Bachelor of Secondary Education major in Science; E: Elementary; JHS: Junior High School; SHS: Senior High School; IS: Integrated Science; ELS: Earth and Life Science; GP: General Physics; GB: General Biology; A: Astronomy

Source: Constructed by the Lead Author (2024)

2.3. Instrumentation

The inquiry employed a two-pronged instrument. The first part chronicled the participants' profiles using a *robofoto* (Kelchtermans & Ballet, 2002). This Dutch term means a cartographic sketch of the participants. The *robofoto*, made up of checkboxes and blank spaces, was filled in with the requisite demographic information. Moreover, the second part was devoted to the aide memoire formulated from *A priori* constructs about Ethics of Care, professional learning, and Gen Z attributes found in the literature. The aide memoire was primarily comprised of open-ended semi-structured interviews and probing questions. Some of the key questions included in the interview guide are as follows: "*How did your interactions with the mentor help you solve a challenging task?*", "*What are the practices that you have observed from your mentor that made you feel more connected and supported as a novice science teacher?*", "*Can you share an experience wherein a colleague's support assisted you in navigating a difficult situation in the school?*", "*How do you perceive your generation's values—like transparency and adaptability—impacting your professional learning and development as a science teacher?*", and "*In what ways did your mentor's empathic treatment shape your teaching practices and student engagement?*"

2.4. Data Gathering Procedure

After identifying study participants who met the inclusion criteria, the researchers initiated a series of formal correspondences regarding their participation. The overarching aims and specific research objectives were explained in detail during this initial interaction. Once participants expressed their intent to join the qualitative investigation, the researchers provided them with a Quick Response (QR) code that directed them to the scheduled interview. A semi-structured interview format was employed, chosen for its ability to balance structured conversation with open-ended dialogue, thereby facilitating comprehensive and in-depth responses. Most participants underwent 2-3 rounds of semi-structured interviews; except for Participant 1, who received a single extended session due to a scheduling concern. Each interview, conducted by the lead author, was transcribed for subsequent data analysis. To ensure clarity and further engagement, debriefing sessions were also offered to participants at the last interview session, allowing them to clarify ambiguities, reflect on their experiences, and ask questions about the phenomenon. The interview sessions were conducted between August 15, 2024 and October 25, 2024.

2.5. Mode of Analysis

Colaizzi's Procedural Steps (1978) surfaced the thematic areas through extraction, organisation, and dynamic analysis. Aside from being heavily used in various educational and organisational studies, this elicitation method was selected due to its pragmatic and sequential features to arrive at the thematic representation of the participants' collective experiences. The iterative process entailed (re)reading the transcriptions, synthesizing the formed essences in clusters or themes, assigning descriptions, and validating the emerged eidetic insights to the participants.

2.6. Data Trustworthiness and Rigour

The researchers adhered to the expected trustworthiness and rigour of qualitative research by actively engaging in reflexive practices and meticulous methodological steps. *Confirmability* was established through bracketing, implemented via systematic reflexive journal writing to document and critically assess their potential biases throughout the study. To strengthen the inquiry's *Credibility*, the researchers engaged in sustained correspondence and prolonged dialogue with the participants, incorporating member checking to validate whether the emerging findings aligned with the participants' realities. These strategies not only demonstrated that the saturation point of responses was reached before concluding the interviews but also reflected a commitment to authentically representing the participants' lived experiences.

Additionally, the facets of *Transferability* and *Dependability* were conducted by presenting rich and thick descriptions of the phenomenon, enabling readers to identify parallel encounters with their own contexts, and by providing detailed accounts of the data collection process to support future scholarly replication in other fields and cultural settings. Finally, to adhere to the highest standards of presenting a qualitative inquiry, the researchers followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007).

2.7. Ethical Considerations

The inquiry was cleared by the Ethics Review Committee of Centro Escolar University Manila under Protocol Code: COPH301-12425. All participants received verbal and written briefings highlighting the inquiry's overarching aims, specific research objectives, phases and procedures, minimal to absent risks, numerous benefits of participation, information storage and deletion, and strict data privacy and confidentiality adherence. Additionally, they were guaranteed that they could withdraw their participation at any point in the inquiry. Informed consent forms were secured before scheduling individual interviews with the participants.

3. Results and Discussion

Interestingly, this phenomenological study's rich and thick individual and collective accounts yielded the *Typology of Ethics of Care-driven Informal Professional Learning* among Filipino Gen Z novice science educators (Table 2) that accentuates the essence of the role that Ethics of Care, as exhibited by their school mentors, assume in their informal professional learning as beginning science teachers. This insightful typology presents the trifocal *Forming Professional Learner Personas* on being and becoming a *Mindful Member*, *Grounded Inquirer*, and *Utility Thinker*, respectively, as brought about by the ensuing caring-driven episodes accorded by their school mentors.

These thematic personas are being instilled in them through navigating the three-pronged directional areas, representing the people, process, and product (*Focal Points*) that they should consider seizing actionable opportunities for holistic professional development (*Fostering Antecedents*), thereby maximizing its long-term effects on their budding years as educators (*Formative Impacts*). A series of complementary mind maps (Figure 1) bearing the thought elements of the sub-components of the typology has also been presented.

3.1. On *Mindful Member* as a Forming Professional Learner Persona

The participants acknowledged that they would only be novice science teachers once; hence, they aspired for this pivotal period in their early careers to be characterized by substantial and meaningful learning experiences. From their perspectives, as long as informal mentors offer transformative advice on valuing harmonious relationships within the institution, they could continue learning various aspects that would aid them in their future endeavours. This view traces its nexus to the work of Walters and collaborators (2020), who found that mentees develop relational competencies through contact with a caring mentor. Similarly, Varney (2009) observed that humanistic mentors typically demonstrate care by fostering both the intrapersonal and interpersonal growth of their protégés. Participants 4 and 9 shared:

"A caring environment can help mentor and mentee feel comfortable and reduce the pressure that new teachers often experience, making their transition [to the school] smoother and more enjoyable." (P4)

"Genuine and caring science mentors should challenge mentees for growth without making them feel burdened, focusing on professional improvement." (P9)

Despite lacking access to structured platforms for professional development, they did not view this as a hindrance to their career growth. Instead, they believed the invaluable insights gained

from their cordial relationships with mentors and colleagues could compensate for this shortcoming, enabling them to continue learning about their roles despite fragmented experiences. As members of a collectivistic society, where '*Pakikisalamuha*' (Socialization) emphasizes close relationships in both families and workplaces (Landa-Jocano, 2006), they resonate with Bellocchi's (2019) challenge to the stereotype of emotionally-detached science educators, who assert that rapport-building is also essential in professional undertakings. As imparted by Participants 5 and 8:

"These days, I surround myself with seasoned teachers who are already stable in their professional careers; it greatly impacted my personality and career life." (P5)

"Caring mentors do not see new teachers as competition but as a family and companion." (P8)

TABLE 2. THE TYPOLOGY OF ETHICS OF CARE-DRIVEN INFORMAL PROFESSIONAL LEARNING AMONG FILIPINO GENERATION Z NOVICE SCIENCE EDUCATORS

	Essential Question:	**Theme No. 01**	**Theme No. 02**	**Theme No. 03**
Forming Professional Learner Persona	*What professional learner characteristics are being holistically developed in novice teachers upon receiving the Ethics of Care from their mentors?*	Mindful Member	Grounded Inquirer	Utility Thinker
Focal Point	**Essential Question:** *What should their focus be if they want to cultivate their professional learning further?*	Symbiotic (*People*)	Diagnostic (*Process*)	Pragmatic (*Product*)
Fostering Antecedents	**Essential Question:** *How can they demonstrate their ongoing professional learning within the school?*	▪ Collaborating ▪ Perspective-taking and making	▪ Forward Thinking ▪ Periodic Auditing	▪ Benchmarking ▪ Reciprocal Feedbacking
Formative Impacts	**Essential Question:** *What will linger with them after the care-centric and informal professional learning experience?*	Sense of Synergy and Diversity	Sense of Reflexivity and Proficiency	Sense of Quality and Sustainability

Source: Constructed by the Lead Author (2024)

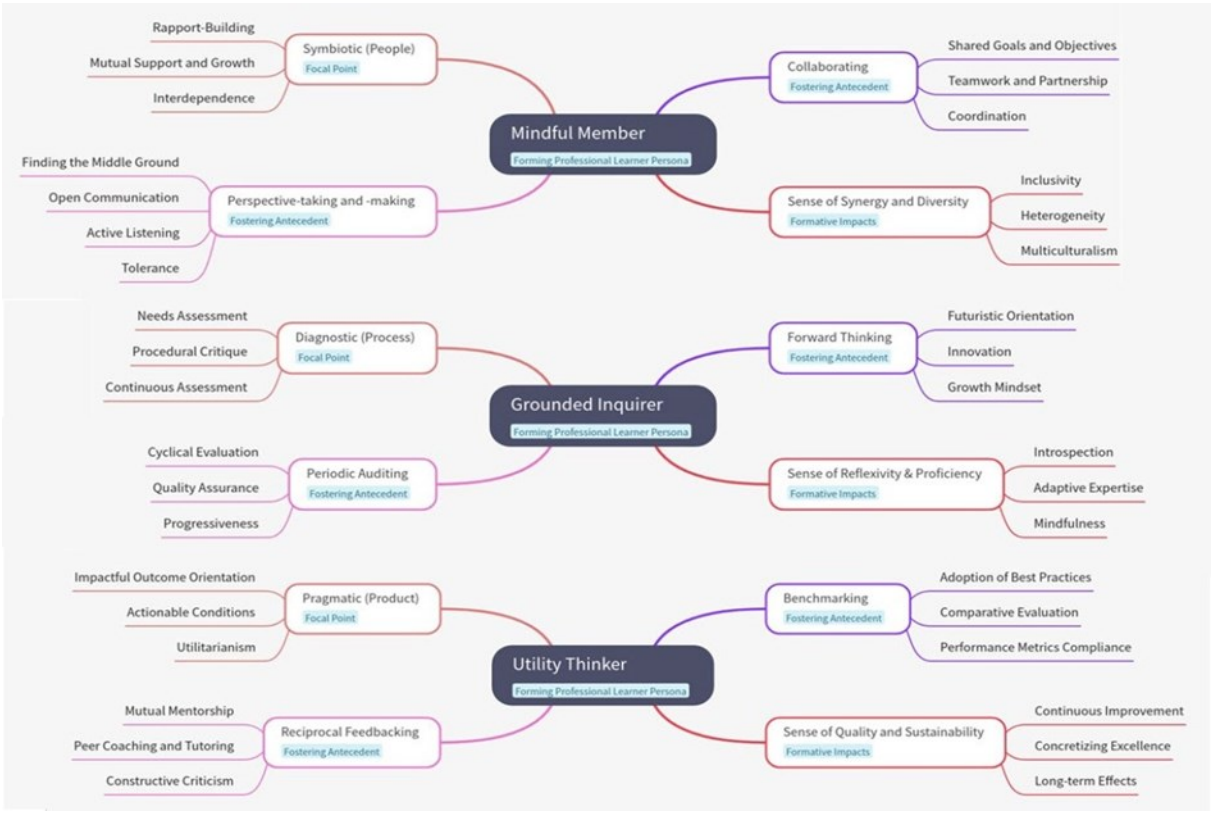
3.1.1. People as a Focal Point (Symbiosis)

Albeit occasionally envious of novice educators from other institutions with more structured professional learning, the participants acknowledged that learning from various people in their organisation gave them the unique opportunity to observe and understand often overlooked perspectives in real time. This contention opposes Miller and Mills' (2019) claim that Gen Z is close-minded and stubborn in relationships. Likewise, Vesterinen and associates (2016) noted that science educators, motivated by citizenship science, intend to take actions that could benefit others. Participants 5 and 6 expressed:

"In this new generation, new science teachers can serve as an aid to those teachers who have been teaching for several years as we are packed with skills and pedagogies that are based on 21st-century education." (P5)

"[Engaging with fellow faculty members] *can help new science teachers feel valued, making them more motivated and confident in their abilities, which will help strengthen the science education* [core group] *within the academic institution.*" (P6)

FIGURE 1. THE COMPLEMENTARY MIND MAPS FOR THE *TYPOLOGY OF ETHICS OF CARE-DRIVEN INFORMAL PROFESSIONAL LEARNING*



Source: Constructed by the Lead Author (2024) at https://mindmapai.app/

For them, learning from the cautionary tales and best practices of experienced educators offers a supportive approach to comprehending their roles as science teachers, moving beyond the confines of generic professional programs that may not align with their specific areas of interest. In science education, despite varied positional identities among teachers (Moore, 2008), mentors are sensitive to their mentees' plights. Filipino workers view colleagues as extensions of themselves, expressing '*Pagpapakatao*' (Humanity) to sustain harmonious interactions (Landa-Jocano, 2006). As noted by Participant 7:

"Every faculty [roster] certainly has teachers that are [insensitive] and lack the qualities of being a great mentor. Imagine having a genuine mentor who can instil pride and let a new teacher thrive. My current mentor is like that." (P7)

3.1.2. Collaboration as a Fostering Antecedent

As the participants make sense of their takeaways from their informal mentors, they recognized that connections in the academic institution are best formed through a steady process of engaging in joint ventures with other teachers. While these opportunities are typically provided through professional learning communities and formal mentorship programs, the participants were not disadvantaged despite lacking such stable support. Professional development platforms remain tailored to previous generations of teachers (Blonder & Vescio, 2022), highlighting the need for adjustments to accommodate Gen Z educators. Participants 1 and 5 stated:

"*I believe in collaboration more than individual contributions. It is not about which generation contributes more; rather, it is about working together*." (P1)

"*For me, collaboration is the most effective approach. If [a specific workplace learning] happened to my mentors during their early years,* [then] *I want to learn from their experiences so that I can apply that new knowledge and skills to my current situation.*" (P5)

Their mentors instilled that achieving multiple frontiers often requires mutual effort and dynamic alliances. This perspective is rooted in the work of Lopez (2013), who states that collaborative mentorship fosters diversity and equity. By the same token, the teachings of their mentors reflect the Filipino value of '*Malasakit*' (Compassion) for other's holistic development (Landa-Jocano, 2006). In today's educational landscape, teachers organize professional networks to exchange effective strategies (Girardet, 2018). Participant 4 brought up:

"*I believe collaboration between [the] mentor and mentee should promote both holistic and professional growth. In my experience at the public school, we have informal collaboration sessions twice a week, which have been really beneficial to us."*

3.1.3. Perspective-taking and -making as Fostering Antecedents

As the participants navigated the relational aspects of their development as educators, they recognized that engaging with other teachers is a reciprocal process. While they recognize the value of emulating exemplary colleagues, they also acknowledged that blindly following them can result in a distorted sense of purpose. This purview reinforces the notion that science teachers exercise discernment even within peer learning (Soncini et al., 2024). The growth mindset among radical cohorts suppresses domineering and dismissive attitudes in organisational citizenship (Obmerga, 2024). Participants 1 and 5 indicated:

"When I was new, talking to colleagues helped me understand that I could always seek guidance whenever problems arose. This support system is particularly important now, as we are hiring many new teachers and assistant teachers." (P1)

*"[*My mentor*] was always open to discussing new and innovative ideas, inspiring us to share more and delve more into something. Also, I have observed that she always adds something significant to what has been shared, making the learning experience more memorable and noteworthy."*

They were one in sharing the view that care-driven mentorship benefits both mentees and mentors. For them, there are instances to assert their ideas. However, they should also learn to adapt their mentors' insights, particularly those from challenging science classroom and laboratory experiences. Whether through partnerships or providing assistance, '*Pakikisama*'

(Camaraderie) concretizes group cohesion (Landa-Jocano, 2006). Due to the uncharted nature of Gen Z as professionals, this research is among the few studies indicating that they are open to diverting from their ideas to explore other compelling ones.

As disclosed by Participants 1 and 9:

"*Since mentors have been in the teaching profession for years, they already know the strategies to make the job easier. I should listen to those experiences."* (P1)

"*Teaching my science mentor something in the future would be fulfilling, showing my growth and improvement. I think my mentor would appreciate the new learning experience*." (P9)

3.1.4. Sense of Synergy and Diversity as Formative Impacts

The participants advanced the notion that the organisation's team dynamics and social cohesion are critical springboards that could lead to resounding teacher success. Admittedly, while they still find the proverbial rope to understanding the ebb and flow of their respective academic institutions' culture and disentangling the complex web of its citizens' personalities, they know they must turn their backs on an individualistic working style. In the literature, co-caring and belonging are essential for benevolent professional relationships (Joseph et al., 2022). Participants 3 and 4 averred:

"*I feel that the primary goal of being a genuine and caring science mentor — regardless of the values they hold — is to help other professionals learn."* (P3)

"*I feel fortunate to have a mentor who has guided and shaped me every step of the way. I feel comfortable sharing my thoughts and ideas, and I am not embarrassed by criticism. This openness fosters unity and harmony, strengthening the relationship and creating a positive and supportive environment*." (P4)

They also recognized that diversity enriches organisational dynamics and became committed to institutional initiatives that project the vibrance of their school. Bińczycki and associates (2023) found that Gen Z is attuned to inclusion issues and the need for a diverse workplace culture. While '*Mahiyain*' (Reserved) behaviour is a common trait among Filipinos (Landa-Jocano, 2006), the participants in this study demonstrated a willingness to go beyond these norms in pursuit of professional learning. Participant 9 verbalized:

"*My mentor helped me become independent by allowing me to structure my learning experience and decide on school activities, fostering creativity and autonomy inside the institution."*

3.1.5. Collective Description of the First Theme and its Sub-themes

In essence, the *Mindful Member* Professional Learner Persona capitalizes on the participants' open and in-depth engagements with the people in the educational organisation (*Symbiotic*) to further learn about how to work effectively with others (*Collaborating*) and how to determine which ideas are to be advocated and side-tracked upon their collaborative experiences (*Perspective-taking and -making*) to holistically contribute to their academic institutions' collective efforts and plurality of ideas and skills (*Sense of Synergy and Diversity*).

3.2. On *Grounded Inquirer* as a Forming Professional Learner Persona

Through the empowering encounters with their mentors, the participants expressed that resilience in learning organisational processes, despite hurdling several classroom and laboratory responsibilities, is vital for grasping how the academic institution functions. Procedural ambiguity among science teachers could result in safety risks among learners due to the technical nature of their subject (Zirkel & Barnes, 2011). To mitigate such risks, Filipinos often engage in '*Pag-usisa*' (Inquiry) and '*Pagkilatis*' (Scrutiny) to ensure a comprehensive understanding of situations (Landa-Jocano, 2006). Participants 7 and 9 conveyed:

"*Entering the field is not a joke, as we are already expected to be competent and true to what we told our employer during the interview. The pressure we are dealing with as science teachers is at a higher level compared to other subjects. Imagine, you are a science [education] major graduate and, yet, you do not know the school processes.*" (P7)

"*Daily check-ins allow [the] mentor and mentee to discuss class facilitations, addressing any issues and finding solutions together*." (P9)

As budding educators, they recognized that self-doubt and hesitation could impede their professional growth and lead to career stagnation. They also narrated that their mentors inculcated the need to fully acclimate to their roles before challenging existing practices. In the literature, effective mentorship anchored in caring fosters community integration and professional agency development among mentees (Mooney-Simmie & Moles, 2011). As explained by Participants 1 and 4:

"*Mentorship provides assurance to new teachers, helping them feel they are not alone and that everyone is working to figure things out together*." (P1)

"*Adapting to a new environment and starting a teaching career has been difficult, especially with the additional ancillary tasks in the Department of Education.*" (P4)

3.2.1. Process as a Focal Point (Diagnosis)

The participants' mentors conveyed that the transitory nature of their learning, arising from unplanned observations and random assignments from mentors, necessitates an understanding of their schools' internal dynamics before circumventing any protocols in the pursuit of efficiency. This proposition aligns with the findings of Bauer and associates (2007). According to them, role clarity helps new professionals mitigate role confusion, cultural misalignment, and performance pressures during their initial adjustment. Participant 1 expounded:

"*One of the essential skills my mentor taught me is serial tasking, especially when handling multiple responsibilities. My mentor encouraged me to focus on one part at a time and customize it to fit my style. This flexibility allowed me to manage the workload effectively*."

Rather than passively expecting procedural insights, participants felt compelled to observe their institutions' complex and evolving processes, helping them identify their potential building and stumbling blocks. While institutions often pair novice teachers with peers for support, the lack of an adjustment period can diminish morale and sow confusion (Erichsen & Reynolds, 2020). Although this study's cultural context emphasizes virtues like '*Matiisin*' (Endurance) (Landa-

Jocano, 2006), it does not guarantee that the Gen Z participants will subscribe to this ethic in the long run. Participants 1 and 4 mentioned:

"*There is a need to immerse in the school's processes and procedures. These are the only viable routes to be firmly implanted to the system*" (P1)

"*I believe it is essential for mentees to feel they have some authority over their decisions, while still receiving valuable guidance*." (P4)

3.2.2. Forward Thinking as a Fostering Antecedent

Being aware of the nuances underlying their school-related undertakings has enabled participants to avoid aimless navigation within their organisations. Albeit regularly faced with individual pedagogical challenges in their respective subjects, as motivated by their mentors, they have not dismissed the notion that they can contribute to institutional progress by being open to goal-driven deviations in their practices. This view aligns with future thinking, which, when initiated by a caring mentor, fosters a sense of possibility during teacher preparation (Cipollone et al., 2018). However, science educators are often encouraged to temper bold ideas to meet numerous safety standards (Abdelnasser, 2023). Participant 3 underscored:

"[My mentor] *helped me adjust to the school system and culture by, for example, giving me a schema of what I can anticipate from each class.*"

For them, even if they are just at the onset of their careers, the trailblazing mentorship they received has pushed them to seize rare opportunities to make a difference and promote advocacies. Gen Z employees are known for incorporating creativity into their work (Racolţa-Paina & Irini, 2021), a trait echoed in Filipino culture as '*Malikhain*' (Creative) when facing challenges (Landa-Jocano, 2006). While Gen Z is labelled for pursuing radical innovations, it remains to be seen whether they will continue to pursue daring actions without a full understanding of organisational processes. Participant 2 stressed:

"*I know it is important for new teachers to be creative and to use methods that fit his or her strengths as an individual. If given the chance, I will create an environment where one feels safe to try something new. This would enable them to take risks in planning lessons and classroom management."*

3.2.3. Periodic Auditing as a Fostering Antecedent

Despite being indifferently treated by their other colleagues, their mentors' generous accommodation has instilled in the participants that there is nothing wrong if they question their institutions' system and longstanding practices. Tracing its connection in the literature, academic mentors step out of the bounds of standards to create conducive learning experiences for their mentees (Leonard, 2012). While Gen Z is known for expressing dissenting opinions when dissatisfied, Filipino cultural norms emphasize '*Magalang*' (Respectful) behaviour even in disagreement. Participants 1 and 6 exclaimed:

"*There is no perfect school system. My mentor was very clear on that aspect. Hence, it is crucial for beginning science teachers to inquire on critical academic processes for the purpose of his or her enlightenment*." (P1)

"*I believe that questioning the processes will allow me to have a stronger foundation and will provide me with an opportunity to adapt and refine certain strategies I need at work."* (P6)

Whether in teaching strategies, laboratory innovations, or school practices, as guided by their mentors, they understood that respectfully suggesting improvements would not be seen as resisting tradition. A restrictive approach to educational progress can stifle an organization's competitive edge (Miotto et al., 2020). With the Philippines' perennially low performance in international learning assessment metrics, such as TIMSS, Filipino science educators are motivated to exceed expectations, even amid scarce resources and support constraints (Carino, 2022). Participant 3 declared:

"*Emphasizing how much personal branding matters in education will make them realize that individual perspectives can bring something great to the institution."*

Sense of Reflexivity and Proficiency as Formative Impacts

Based on the participants' reflections, they emphasized that attaining a fundamental mastery of workflows should be accompanied by reflective practices to assess how they could most effectively integrate into the organisational structure. This assertion affirms the notions of Chitpin (2011), which stated that mentorship with utmost care should include opportunities for reflection. Although Gen Z has been stereotyped as lacking internalizing tendencies and science teaching calls for objectivity rather than reflective actions, this study's participants demonstrated that Gen Z educators are capable of reflexivity, allowing them to be capacitated. Participants 1 and 8 pointed out:

"*My mentor has inspired me to always pause to internalize, whether I am doing fine or otherwise in the school. This has helped me to make informed choices about my adjustment."* (P1)

"*Caring mentors encourage self-reflection and boost their mentees' confidence by providing constructive feedback and celebrating successes, leading to mentees feeling more self-aware and resilient*." (P8)

For the participants, their novice years as educators will pass quickly, often before they realize it; hence, they need to nurture their curiosities while becoming accustomed to the institutional processes. Apart from their mentors' teachings, a holistic understanding of the organisational conditions could serve as a wellspring for them to become proficient in their practices. Beyond technical excellence, novice teachers benefit from peer guidance encouraging reflection-in-action and reflection-on-action (Moghaddam et al., 2020). The Filipino action of '*Pagsusuri*' (Assessment) is related to self-reflection and serves as a pathway for '*Kahusayan*' (Mastery) (Landa-Jocano, 2006). Participant 5 said:

"I am always open to accepting any kind of remarks, whether positive or negative; it just means that I am still learning and in the process of achieving more. Remarks like this have the power to motivate me to do more and put more effort in order to achieve the target outcomes."

3.2.4. Collective Description of the Second Theme and its Sub-themes

Summarily, the *Grounded Inquirer* Professional Learner Persona hinges on the participants' understanding the educational organisation's processes (*Diagnostic*) to gain baseline insights about its effectiveness and shortcomings to further learn about how to make innovative yet incremental changes (*Forward Thinking*) and how to habitually assess the procedures and

operations (*Periodic Auditing*) to holistically develop an informed and deeply-seated practice on their stint in the academic institution (*Sense of Reflexivity and Proficiency*).

3.3. On *Utility Thinker* as a Forming Professional Learner Persona

Reflecting on their interactions with caring exemplars, the participants noted that their mentors encouraged them to consider both the immediate and long-term impacts of their contributions to the institution. In the literature, appreciative actions that could induce organisational changes are critical in today's stringent school climate (Cherkowski & Walker, 2019). While Gen Z is often depicted as individuals who lack persistence due to the absence of delayed gratification, the participants revealed a different circumstance. Obmerga (2020) posited that grit, a crucial work virtue, may also be evident in younger generations of educators. According to Participants 4 and 9.

"*I now value gradual outcomes more than instant outputs because, in teaching, results are not always visible right away*." (P4)

"*My mentors taught me to value outcomes over immediate outputs, as long-term goals create a more meaningful impact, especially in instilling [the] values and attitudes necessary for success*." (P9)

As they are just beginning to identify their niche in the school, the advice they have received from their mentors has taken root in their minds, emphasizing that their efforts must be built around their takeaways to enhance their outputs, regardless of how small or inconsequential those efforts may seem. Science-related educators and practitioners are usually focused on operationalizing their outputs, demonstrating a willingness to undergo the tedious process of experimentation to implement evidence-based practices (Luft et al., 2019). Filipino workers are recognized for their '*Mapagpunyagi*' (Diligent) behaviour (Landa-Jocano, 2006). Participant 5 revealed:

"*I think we, the Gen Z science teachers, follow a set of routines that are rooted in research-based pedagogies, personal experiences, and maybe the impact of globalization*."

3.3.1. Product as a Focal Point (Pragmatics)

As their mentors encourage, bringing their progressive ideas to fruition is not intimidating for the participants. It dawned on them that there is no better testament to their growth in the school than paving the way for outcomes that might benefit their colleagues' work arrangements and their students' learning experience. Vikaraman and fellows (2017) suggested that a caring relationship between mentors and mentees, supported by school leadership, can lead to impactful practices. Science educators face the challenge of ensuring that their instruction transcends the classroom and resonates with learners' everyday lives (Ferreira & Morais, 2020). Participant 1 and 8 articulated:

"*My mentor was very specific to always set the standards high when it comes to the deliverables that I generate in the school*." (P1)

"*Exposure to the school culture, unique values, traditions, and unwritten rules allows me to reshape my techniques and ways of teaching to benefit my students and co-workers*." (P8)

Through their incremental efforts while learning about the organisational processes and products, they could consolidate their gains for as long as they remain true to their mentors'

challenge to find the significant implications of their contributions. In the Filipino culture, decisions and actions are often driven by '*Kabuluhan*' (Significance), reflecting a social responsibility to make a difference. While Gen Z workers are often stereotyped as entitled, the study findings suggest their growing maturity as active contributors within the school system. Participant 9 emphasized:

"*Rushed outputs are just band-aid solutions. Gradual outcomes are structured, lasting longer, and adding more value* [to the school and students]."

3.3.2. Benchmarking as a Fostering Antecedent

The participants remained optimistic that the processes and teaching traditions within their respective organisations would be revitalized through their dedicated professional efforts. Driven by their mentors to also check the courses of actions of their colleagues, they sought other educators' best practices, aiming to emulate their exemplary actions. Despite the prevalence of negative workplace behaviors like '*Inggit*' (Envy) and '*Crab Mentality*' (Fear of success) in Filipino culture (Landa-Jocano, 2006), the participants exhibited a celebratory attitude toward the achievements of their peers. Participants 2 and 10 asserted:

"*There are numerous insights that I can always consciously lift and later emulate from my mentors and colleagues. If only the new teacher can notice these profound lessons,* [then] *he will be unstoppable in terms of progress*." (P2)

"*My mentor serves as my standard and [I also examine] what other teacher demonstrates. It gives the impression that I also want to be like them*." (P10)

To properly fulfil their teaching duties, they have realized they need to become instrumental in discontinuing the faulty practices and share their resources to ensure that all their deliverables conform to the standards. As evidenced in the study, this generation's actions suggest a shift towards internal benchmarking rather than competitive benchmarking to achieve higher efficiency. Science teachers are compelled to evaluate their performance against established success indicators to ensure safe and successful learning experiences (Lewis et al., 2021). Participant 2 clarified:

"*I can guide others by using technology through peer tutorials. This way, it will give the experienced teachers the opportunity to pass on knowledge regarding the new tools and resources to the new teachers, enabling them to use technology effectively in their classrooms*."

3.3.3. Reciprocal Feedbacking as a Fostering Antecedent

Inspired by their desire to set the tone within the organisation, the participants advocated for the improvement of the key instructional and operational outputs they produce, despite being newcomers. While their focus remains on teaching, they never presumed that they knew everything, as they have actively solicited recommendations to refine their work while offering insights to improve the outputs of others. By providing timely feedback, Smith and colleagues (2020) argued that new teachers can better align their actions with the institution's goals, contributing to a higher quality of education. Participants 3 and 7 affirmed:

"*Beginning educators, whether in science or not, always have a voice. They should seize that opportunity to also guide their mentors and fellow faculty members. No one has the monopoly*

of knowledge and information about the school. At times, streams significant information is coming from the new teachers since they are exposed in the field." (P3)

"*My mentor continuously showered me with feedback, criticisms, and observations about my professional conduct. I preferred it that way and I was able to adjust*." (P7)

From their narratives, their mentors assumed a crucial role in critiquing and enhancing their practices. Withholding feedback, as noted by Keiler and fellows (2023), indicates that mentors are not fully invested in their mentees' growth. For them, closely guarding their optimal strategies to attain a desirable outcome would only hinder them from achieving landmark successes. Their proactive stance can be linked to the Filipino trait of '*Diskarte*' (Practicality), often employed to optimize resources and expedite problem-solving. Participant 4 reported:

"*My mentor is always careful to ensure that my feelings are not hurt. Even when delivering negative feedback, she finds ways to lighten the burden on my heart*."

3.3.4. Sense of Quality and Sustainability as Formative Impacts

Making a difference in their organisations, especially at the level of a comprehensive validation of their outputs, was an unsettling surprise for the participants as it always did not go as anticipated. As their mentors appeased their apprehensions, they remained committed to infusing quality into their work. This stance echoes the precepts that Aspfors and Fransson (2015) advanced that the mentors' dedication to honing their mentees' gap-riddled skills is a testament to their concern for their productivity. Previous generations of Filipino workers have relied on '*Kayod*' (Perseverance), '*Oido*' (Strategy), and '*Libro*' (Formal studies) to overcome occupational deficits (Franco, 1988). Participants 1 and 8 specified:

"*Impactful actions are not subjective. There are actually objective aspects to measure them. Fortunately, my mentor really challenged me to always think of the quality of my activities*." (P1)

"*If the mentee becomes more reflective about the impact of his teaching practice and demonstrates better problem-solving abilities, this shows that the mentor is successful* [in] *developing the mentee's mindset of continuous improvement*." (P8)

In light of unprecedented work challenges, their mentors taught them to remain resolute, recognizing that their lack of voice and experience could be offset by their steadfast commitment to quality teaching and professional learning. High-quality work is integral to sustaining instructional reforms in science education (Tekkumru-Kisa et al., 2021). For them, what stands in the way eventually becomes the way; hence, they attempt to carry on and break the underwhelming work cycles that produce mediocre results. According to Participants 2 and 4:

"*The experiences* [with my mentor] *have assisted me in growing further as a teacher, and I have the zeal to continue learning from them in the near future*." (P2)

"*I always strive to meet or exceed* [my mentor's] *expectations because of the trust she placed in me. While my mentor allowed me to take control of my work, she continues to guide me to ensure I stay on the right path*." (P4)

3.3.5. Collective Description of the Third Theme and its Sub-themes

Tellingly, the *Utility Thinker* Professional Learner Persona relates to the participants' iterative consideration of the outcomes of their undertakings in the organisation (*Pragmatic*) to explore foundational elements of what makes their outputs functional to further learn what to adopt and disregard from the exchange of best practices and resources (*Benchmarking*) and what to include and exclude in the provision of remarks (*Reciprocal Feedbacking*) to holistically form a strict adherence to the standards and continue their desirable routines (*Sense of Quality and Sustainability*).

4. Conclusion

The novice years among educators, from the sciences or other disciplines, represent universal and cross-cultural encounters that transcend generations. Although mentorship practices vary from organization to organization and may impact each teacher differently, the role of caring mentor-leaders, despite being informal in this inquiry, is undeniably significant in shaping the early careers of teachers who continue to yearn for organizational nurturing. This qualitative inquiry focused on the early impacts of Ethics of Care, as espoused by Gilligan (1987) and extended by school mentors, on the informal professional learning of Filipino Gen Z novice science teachers. The phenomenological study developed the *Typology of Ethics of Care-driven Informal Professional Learning* among Filipino Generation Z novice science educators through thematic analysis of transcribed field texts. This typology encapsulates the pivotal role that informal school mentors' Ethics of Care play in the professional growth and development of the participants. The dynamic persona highlights the key characteristics fostered in participants through transformative mentoring by their exemplars. These personas encompass the foci, antecedents, and impacts of their mentors' dynamic tutelage. The study's theoretical contributions, practical implications, limitations, and future directions are discussed below.

4.1. Theoretical Contributions

This research makes three significant theoretical contributions. *First*, while existing studies have explored teachers' flourishing due to mentorship (Cherkowski & Walker, 2019), novice teachers' perspectives on mentoring (Löfström & Eisenschmidt, 2009), self-directed learning among beginning educators (Mokoena & van Tonder, 2024), onboarding of Gen Z workers (Chillakuri, 2020), and professional learning of science teachers (Blonder & Vescio, 2022), none have specifically addressed the early impacts of informal professional learning on Gen Z science teachers. This study is one of the first empirical inquiries to investigate this unexplored area. *Second*, an exhaustive review of the literature reveals that, apart from Oberhauser and Caretta's (2019) work on Ethics of Care in feminist mentoring within a neoliberal academy, there is a scarcity of research from reputable sources that elevate the critical role of Ethics of Care in informal professional learning and school mentorship, particularly in developing countries like the Philippines. *Third*, this inquiry introduces the *Typology of Ethics of Care-driven Informal Professional Learning* among Filipino Generation Z novice science educators. While there are related studies on capacity-building and identity formation among non-science teachers (e.g., Schepens et al., 2009; Trust, 2012), those observational studies focused on earlier generations of budding teachers. This pioneering study is among the few inquiries that captured the collective experiences of Gen Z teachers at the onset of their careers.

4.2. Practical Implications

Additionally, this research offers four practical implications for effective mentorship and onboarding of Gen Z novice science teachers. *First*, the findings can serve as a guidepost for Gen Z novice science teachers who have recently joined or are about to join academic institutions. By engaging in reflection and conditioning, they can optimally leverage the identified personas to prepare for their professional roles based on their unique circumstances. *Second*, academic communities lacking structured mentorship programs can benefit from this study, particularly seasoned educators mentoring younger faculty members. The insights help determine which aspects of mentorship to instil across disciplines, enriching role-making initiatives tailored to this promising cohort of educators.

While mainstream professional learning mechanisms are integral to contemporary educational organizations, weaving informal professional learning into such mentoring protocols can enhance mentorship practices and better support Gen Z educators. *Third*, the study's future directions provide a foundation for complementary research to benefit subsequent generations, such as Generation Alpha. Understanding how their proximate age group adjusted during critical career junctures could help them harness their self-propelled capabilities as they integrate into educational institutions. *Fourth*, the study's resulting typology offer a conceptual launching pad for advancing cross-cultural research, enabling future investigations to critically examine how diverse cultural paradigms and (non-)educational systems mediate the applicability, adaptability, and relevance of Ethics of Care-driven Informal Professional Learning.

4.3. Limitations

The utilization of Husserlian phenomenology enabled participants to articulate and clarify the essence of their lived experiences; however, this design entails inherent limitations that must be acknowledged to frame the findings within their appropriate scope. Central among these is the relatively small sample size (N=10), which, while sufficient to achieve data saturation in phenomenological inquiry, constrains the generalizability of the findings beyond the specific context studied. This limitation is particularly significant given the nuanced and context-dependent nature of the phenomenon under investigation stemming from a given cultural reality.

Although rigorous measures such as member checking, bracketing, and the critical friend technique were employed to enhance trustworthiness and reduce researcher bias, the intersubjective nature of the responses introduces variability that may not fully capture broader patterns of the lived experience. Hence, the study only offers a *moderatum* generalization, as the experiences of novice teachers from (non-)science fields, diverse cultural orientations, and varied mentorship environments could diverge significantly due to individual differences and distinct worldviews. Future studies could address these limitations by incorporating larger, more diverse samples and cross-cultural and comparative analyses across multiple contexts to deepen the understanding and applicability of the phenomenon.

4.4. Directions for Future Research

Apart from replication efforts of the study in different professional and cultural realities, future researchers may also consider cross-cultural comparisons of care-driven practices among

informal school mentors in communitarian versus individualistic societies. Additionally, interested scholars may probe the longitudinal elements of the proposed typology using other research designs, such as institutional ethnography and constructivist grounded theory, to verify and observe these components in various contexts. Furthermore, the qualitative study's findings provide a promising springboard for future quantitative studies, such as Covariance-Based Structural Equation Modeling for testing theoretical models and Exploratory and Confirmatory Factor Analysis for developing psychometric scales about the facets of the typology. These research designs promote methodological pluralism, enabling a more comprehensive exploration of the phenomenon's multifaceted dimensions.

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