IJACT 24-9-13

## **Teachers in the Field: Using Photovoice to Study Teaching Behavior**

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#### Abstract

The aim of this study was to examine the efficacy of the photovoice method as an educational tool. To do so, the theoretical frameworks that inform its use were analyzed. Many educators have identified the potential of photovoice as a valuable tool for fostering critical reflection. This is because photovoice enriches the research process by allowing students to express their thoughts visually and verbally, thereby revealing structures of knowledge that are challenging to access through conventional methods. We have implications for teacher education and teacher research methodologies. Photovoice can serve as a platform for teachers to actively express their perspectives, contribute to practical knowledge generation, influence reflection, and facilitate meaningful dialogues within the educational community.

Keywords: photovoice, teacher education

## **1. INTRODUCTION**

The significant influence of teachers as ongoing learners, shaped by their experiences, is a pivotal element in the preparation of educators, as illustrated by the findings of [1]. The encouragement of educators to enhance their skills within the specific context of their classrooms through active engagement in research underscores the importance of integrating research findings with practical implementation. Nevertheless, the conventional approach to teacher education, which is rooted in technical rationality, frequently emphasizes the acquisition and application of established theories [2]. However, the implementation of learned theories in a top-down approach may present challenges for teachers, as it may not always align with the complexities of classroom realities [3]. Furthermore, the educational context may not optimally support the systematic implementation of theories, potentially leading to discrepancies between research outcomes and real-world experiences [4].

In consideration of the limitations inherent to action research, exploratory practice has emerged as a sophisticated approach that places greater emphasis on collective comprehension over the mere resolution of problems [5]. The involvement of all stakeholders, including teachers, students, and administrators, in exploratory practice facilitates a more profound comprehension of classroom phenomena within the educational setting [6]. A key aspect of this approach is the continuous involvement of all participants, which allows teachers to pursue their interests and gain insights into their classroom environments. The framework is grounded in exploratory practice, which prioritizes the quality of life in both research and pedagogy. The statement underscores the significance of practitioners attaining a comprehensive understanding of learning

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Manuscript received: July 12, 2024 / revised: July 30, 2024 / accepted: September 5, 2024

issues prior to attempting to resolve them. This approach fosters collaboration among learners, researchers, and teachers. The principles of evidence-based practice underscore the integration of research into daily classroom activities, with the objective of not overwhelming teachers. This comprehensive approach aims to address the challenges associated with implementing research and pedagogy in educational settings [7].

Moreover, the framework places a premium on collaboration, with the objective of establishing a nexus between theoretical concepts and practical applications through the involvement of a heterogeneous cohort of stakeholders, including learners, researchers, and educators. Such involvement enables the development of individual research priorities and the utilization of shared pedagogical methods as instruments for inquiry. The objective is to achieve mutual development, whereby the advancement of the researcher enhances the capabilities of the teacher and, in turn, facilitates learners' acquisition of a more profound comprehension of the processes of learning and teaching. The principles of evidence-based practice underscore the importance of integrating research into the everyday activities of the classroom, while also reducing the additional burden on teachers who are already tasked with numerous responsibilities. The argument posits that research serves to enhance learning and teaching, rather than diminish their effectiveness. Exploratory practice encompasses practitioner research that encourages the investigation of learning and teaching methods by both learners and educators, with active involvement in the educational environment [6] (p. 2). This approach permits educators to identify and analyze the challenges encountered in the process of learning and teaching, utilizing their teaching methods as instruments for inquiry. The integration of research and pedagogy is a complex concept that may present challenges when implemented in an educational setting.

In this context, the integration of photovoice into exploratory action research is considered a crucial element [1, 8, 9]. Photovoice is a methodological approach that facilitates social change through photography and group discussion [10]. Initially intended for the documentation of community issues, photovoice has demonstrated versatility in its application to the comprehension of educational matters [11]. The use of this application has allowed educators to improve students' self-awareness and to capture subtle aspects that are frequently disregarded in conventional communication methods [12].

The integration of photovoice affords educators the opportunity to express their viewpoints through photography, thereby facilitating a more nuanced examination of both individual and collective experiences within the educational community. This participatory approach aligns with the pragmatic characteristics of participatory action research, which prioritize teacher autonomy and the development of participatory action research skills. The growing interest in photovoice across various social science disciplines has given rise to methodological challenges, including the need to strike a balance between participant and researcher perspectives and to effectively manage visual and narrative data [13]. A proposed strategy for analyzing photovoice data, comprising four stages, is designed to address these challenges and facilitate a more comprehensive understanding of phenomena by incorporating both visual and narrative data.

This study aims to assess the efficacy of photovoice methods in examining the concept of exploration, implementing photovoice, and analyzing the theoretical frameworks that influence photovoice. Furthermore, the research aims to utilize photovoice techniques to investigate teacher praxis, promoting substantial communication between teachers and their professional practice. This research aims to contribute to the current discourse on empowering educators and advancing practices in teacher education.

# 2. THE IMPLEMENTATION OF PHOTOVOICE: THE THEORETICAL FRAMEWORKS

The photovoice methodology has roots in feminist theory, critical pedagogy and the principles of

photography [12]. The approach employs reflective photography to enable individuals to document and contemplate community issues, thereby aligning with the participatory and pragmatic aspects of exploratory practice. The collaborative nature of photovoice is consistent with the principles of accountability, collaboration, and inclusivity as espoused in feminist theory. Furthermore, documentary photography serves an important function in providing visual representation for advocacy and promoting social change [14]. Photovoice represents a methodology that employs the medium of photography as a tool for enabling individuals to engage in the documentation and reflection on the strengths and concerns of their communities [15]. The objective is to facilitate the generation of knowledge and critical discourse on community issues, and to provide information to policymakers to effect change. The essential components of the photovoice process include reflection through photography, collaborative interpretation, and dissemination of findings to effect change [7]. This process entails participants creating photographs to prompt reflection on their everyday experiences, collectively interpreting the images, and sharing the resulting findings, new knowledge, identified issues, and resources with policymakers to stimulate social change. However, the ethical and effective implementation of this procedure requires a comprehensive examination of the principles of exploratory practice and the theoretical foundations of photovoice, including feminist theory, critical pedagogy, and photography.

The theoretical framework of photovoice is grounded in three key areas: feminist theory, which emphasises empowerment and liberation; critical pedagogy, which fosters collective knowledge generation through dialogue; and the principles of photography, which employ visual representation for advocacy and social change. These theories contribute to a comprehensive understanding of the commonly accepted, emphasizing heightened levels of group participation, collaboration, inclusiveness, reflection, and transformation within the photovoice process [10, 14].

#### 2.1 Paulo Freire's Approach to Critical Pedagogy

In accordance with the principles of exploratory practice, a critical pedagogy was adopted that places a premium on the active involvement of social and political frameworks in the research process, rather than regarding them as passive subjects of study [10]. Communities have the potential to elucidate the sociopolitical arrangements that sustain their marginalization and exploitation [14]. Adopted a perspective that regarded language as a dynamic force, underscoring the generation of meaning through dialogue and naming [14]. He proposed that "dialogue, which necessitates critical thinking, is the sole method for cultivating critical thinking" [14] (p. 65). Additionally, he posited that participating in group discussions about images fosters critical thinking.

In line with the principles of exploratory practice, a critical pedagogical approach that prioritizes the active engagement of social and political contexts within the research process rather than viewing them as passive subjects of study [10]. Communities could provide insights into the social and political structures that contribute to their marginalization and exploitation [14]. This approach views language as a dynamic force, emphasizing the generation of meaning through dialogue and naming [14]. He proposed that "dialogue, which necessitates critical thinking, is the sole method for cultivating critical thinking" [14] (p. 65). Additionally, he posited that participating in group discussions about images fosters critical thinking.

#### **2.2 Feminist Theory**

The concepts of engagement, consciousness, inclusivity, reflectivity, and change are in alignment with the principles delineated in feminist scholarship In alignment with the principles of exploratory practice, the research adopted a feminist perspective, seeking to exemplify feminist research principles, emphasizing accountability, collaboration, and inclusivity [10]. They were guided by the ethos of "nothing-for-us-without-

us" to foster empowerment and liberation [16]. The objective of collectively recognizing the disregarded and examining the placement of women in both dominant and marginalized social discourses, along with historical, economic, and political frameworks to advance social transformation, extends beyond the boundaries of feminism. This comprehensive endeavor is aligned with various critical theories, cultural studies, postcolonial studies, queer theory, and the new sociology of childhood, as well as other pertinent academic disciplines. To gain a comprehensive understanding of the issues that have been overlooked, it is essential to encourage greater levels of participation within the group. These objectives also serve as important goals for the study.

The necessity of collective action in effecting meaningful change was underscored, with the limitations of individual efforts also highlighted. The concept of critical consciousness aligns with the collaborative approach that is essential to the photovoice process, which serves twofold purposes: the acquisition and dissemination of knowledge [14]. The photovoice approach is proposed as a means of extending these principles by promoting participant engagement with influential individuals within communities and enabling transformative change [10].

#### 2.3 Documentary Photography: Visual Representation of Contemplation

The principles of photography were employed as a means of integrating documentary photography as an instrument for the representation of visual data, advocacy, and social change, drawing from Freire's use of images [10]. The use of visual representations in research elicits a distinct form of reflection on real-life experiences, evoking emotions and thoughts that cannot be fully captured through narrative alone [17]. The act of interpreting an image encourages a more deliberate and critically reflective stage within the research process. Reflection begins with the generation of an image, which prompts an analysis of the underlying reasons for its creation at that specific moment [18, 19]. Subsequently, participants engage in reflection as they contemplate the significance they assign to visual representations, encompassing their perception, significance, and their comprehension or interpretation of the visual stimuli [20]. The integration of visual imagery in narrative research is crucial for enabling participants to engage in critical reflection on their lived experiences and to effectively communicate and share these experiences with others [19, 21].

Moreover, there is a pervasive acknowledgment that images serve as cultural indicators, providing invaluable insights into the values and expectations of individuals, communities, and society at large. The decision-making process regarding the subject matter, timing, and approach to photography is influenced by the collective norms and the aspiration to faithfully depict the experiences in question. The interpretation of images is a subjective process, influenced by individual frameworks for assigning meaning and the societal contexts that impact them [19, 22]. Efforts to understand the significance that individuals ascribe to images facilitate collaboration between researchers and participants in qualitative research, enhancing comprehension of social issues [17, 18]. The constructed nature of representation and meaning-making positions the participant in the capacity of a "teacher," aligning with Freire's critical pedagogy. The researchers were cognizant of the possibility of exploitation and were guided by scholars such as Ewald, Hubbard, Worth, and Adair, who have demonstrated effective methods for involving communities in research by equipping participants with cameras, allowing them to document and investigate their lived experiences.

#### 3. USING PHOTOVOICE METHODS TO EXPLORE THE PRAXIS OF TEACHERS

#### 3.1 Photovoice as a New Critical Reflection Tool

It became evident that the existing tools for critical reflection had shortcomings and were not wholly effective in enabling teachers to engage in exploratory practice [23]. The lack of explicit guidelines for engaging in critical reflection presents a challenge for educators who may encounter difficulties in the absence

of adequate instruction. Furthermore, most reflective tools do not prioritize the significance of interpersonal interaction, which is a vital component for knowledge development and the establishment of professional identity. Therefore, effective critical reflection should be characterized by efficiency, clear guidance, diverse formats, written and multimedia components, and direct interpersonal interaction [23-25].

To address this issue, it was suggested that Photovoice be employed as a method for critical reflection within communities of practice, with the aim of enhancing the professional identity of teachers. The Photovoice methodology was developed with the objective of enabling individuals with limited verbal literacy skills to engage in reflective practices [15]. Wang conducted research in rural China that focused on the challenges faced by women with limited literacy skills. The participants were instructed to capture images that reflected their concepts and to provide detailed explanations, thereby allowing them to articulate their needs and ideas. In a study conducted in rural China, Wang investigated the challenges faced by women with limited literacy skills. The participants were instructed to capture images that reflected their concepts and to provide detailed explanations, thereby allowing them to articulate their needs and ideas. The study delineated three fundamental tenets of photovoice as they pertain to the realm of teacher education [26]. Such activities include educators documenting their instructional experiences through images, participating in group discussions to identify common challenges, and working together to devise solutions. Those new to the field engage in discourse concerning their concepts and receive constructive feedback. Photovoice facilitates direct communication with the community, as educators document their daily experiences through photography and engage in weekly discourse. Prior to the sessions, educators select photographs that exemplify their areas of concern and engage in sharing and discussing them using the photo protocol. Research has demonstrated that individuals who adhere to these practices enhance their capacity to absorb insights and ideas [12]. The Photovoice method provides a structured approach to critical reflection, enabling educators to examine their experiences, identify challenges, develop solutions, and integrate insights and ideas from their peers. It also serves as a conduit for educators to convey their needs to the community and secure recognition for their perspectives. The exhibition offers a forum for emerging educators to disseminate their ideas and contribute to the community, thereby shaping their professional identity.

The study identified three key elements of photovoice as they relate to the context of teacher education [26]. Such activities include educators documenting their instructional experiences through images, participating in group discussions to identify common challenges, and working together to devise solutions. Novice educators engage in discourse regarding their pedagogical concepts and receive constructive feedback. Photovoice facilitates direct communication with the community, as educators document their daily experiences through photography and convene weekly to discuss these images. In advance of the sessions, educators select photographs that exemplify their areas of concern and engage in the sharing and discussion of these images using the photo protocol. Studies have demonstrated that individuals who adhere to these practices demonstrate an enhanced capacity to absorb insights and ideas [12]. The Photovoice method provides a structured approach to critical reflection, enabling educators to examine their experiences, identify challenges, develop solutions, and integrate insights and ideas from their peers. It also serves as a conduit for educators to convey their needs to the community and secure recognition for their perspectives. The exhibition offers a forum for emerging educators to disseminate their ideas and contribute to the community, thereby shaping their professional identity.

#### 3.2 Individual Empowerment and the Professional Identity through Photovoice

The Photovoice methodology, initially developed by Wang and Burris and rooted in visual arts, has been adapted for use in higher education as a pedagogical tool to engage students through observation and reflection [12, 15, 27]. This approach employs the expressive potential of photography to prompt participants to capture

a specific moment in time, reflect on it, and articulate their thoughts through verbal and written means, accompanied by a caption. The pervasive use of social media has enhanced the appeal of this project, particularly among students who are accustomed to documenting their experiences through photographs [12, 15, 28]. In the field of teacher education, photovoice plays a pivotal role as a tool for critical reflection, thereby enhancing our understanding of education. The methodology was integrated as an assignment for interprofessional students engaged in exploratory practice [8, 29].

It is imperative that educators engage in critical reflection to develop into effective teachers and establish their professional identity. Nevertheless, inexperienced educators frequently encounter difficulties with conventional written reflective formats because of their substantial workloads. An innovative strategy for addressing this challenge involves the use of photovoice, a visual tool that provides educators with structured guidance for developing their professional identity. Studies have demonstrated that engaging new educators in a community of practice that integrates photovoice and facilitates discussions to exchange teaching experiences is an effective approach for promoting shared objectives and professional identity. Further investigation is necessary to comprehensively understand the broader implications of employing photovoice and a community of practice to enhance teacher professional identity.

The research demonstrates the impact of photovoice on individual empowerment. During a photo exhibition, participants engaged in spontaneous interactions with city stakeholders and attendees, providing elucidation of the photographs and narratives presented. This interaction represents a shift towards community-driven change, which aligns with the transformative potential of photovoice [16, 27]. The reflection activity was based on Kolb's experiential learning theory, which outlines a four-stage cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation [30]. This approach is designed to facilitate effective learning. Kolb's theory of experiential learning is grounded in a four-stage cycle of learning and four distinct learning styles, with a focus on the internal cognitive processes of the learner.

According to Kolb, the process of learning involves the acquisition of abstract concepts that can subsequently be applied in different contexts, with the emergence of new experiences serving as a catalyst for the development of new concepts [31-33]. The theory is often illustrated by a four-stage learning cycle in which the learner participates in experiencing a concrete event, reflects on the experience, forms abstract concepts, and applies them to test a hypothesis in future situations (Figure. 1) [30].

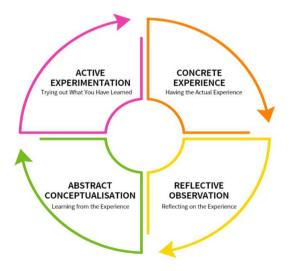


Figure 1. The experiential learning cycle

Kolb views learning as a unified process in which each stage complements the next, and effective learning occurs when all four stages are successfully completed. The process results in the formation of increasingly complex cognitive representations of the material. Kolb identifies four distinct learning styles that are influenced by factors such as social environment, educational background, and cognitive structure. Understanding an individual's learning style makes it possible to tailor learning methods to his or her preferences (Figure 2) [30].

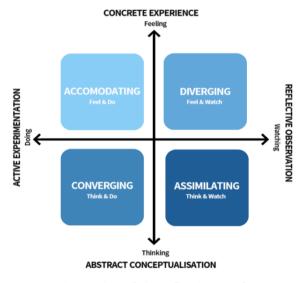


Figure 2. Kolb's reflective cycle

Responsiveness to different learning styles varies among individuals, and the effective use of emphasis depends on the specific context and an individual's learning style preferences. The photovoice methodology was used to enhance experiential learning in an international context by asking students to creatively connect their observations and conceptualization of a course topic to a specific moment in their practice. The purpose of the study was to enhance critical reflection and creativity in faculty teaching, as well as to identify recurring themes in learner perspectives, with the goal of informing pedagogical practices in exploratory practice.

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The study demonstrated the feasibility of these approaches through an analysis of shifts in comprehension utilizing photovoice. The study aims to examine the potential of photovoice, a feminist ethnographic research

method, as a pedagogical tool in an online discussion within a foundational linguistic anthropology course [25]. The study aimed to assess the potential of photovoice as a pedagogical tool for enhancing student learning, improving comprehension of course concepts, and linking theoretical knowledge to real-life experiences. The efficacy of photovoice was evaluated through an analysis of students' outputs, comprising photographs that depicted the concept of performativity in the course, as well as their corresponding discussion posts. The findings indicate that employing photovoice can be an effective approach for enhancing students' understanding of the concept of performativity.

The study examines the application of photovoice as a methodology, pedagogy, and participatory assessment tool in the field of education [11]. The research focuses on the experiences of graduate students enrolled in an Australian transnational Master of Education program who are engaged in a photovoice project to assess its efficacy. The analysis of the participants' images, narratives, and reflections provided evidence that supports the effectiveness of photovoice as a pedagogical and assessment tool. The study indicates that participating in the process of taking recent photographs or documenting moments during a challenging week of teaching prompted the participants to reflect on their experiences and consider the message they wished to convey to others about life in a globalized world. The act of sharing their photos with the group initiated comprehensive discussions about significant issues that had not been previously explored. The images and narratives presented in the text address the issues and possibilities resulting from globalization in the present era.

#### 3.3 The Utilization of Photovoice as a Tool for Community of Practice

The second component underscores the group's collective interpretation of images and the collaborative construction of meaning. In the broader context of photographic principles, the photographs produced by participants serve as a catalyst for reflective discussions, during which the group collectively expands on emerging meanings and interpretations. In essence, a collective interpretation of personal experiences is formed, wherein meaning is embedded and co-constructed [19]. In accordance with Freire's theory and the significance of images, participants investigate the underlying reasons for the existence of certain situations, the reflections conveyed by these images, and potential courses of action [19, 34]. This process enables participants to become aware of the broader social processes and conditions that influence their experiences, thereby facilitating their progression through different stages of critical consciousness. Ultimately, this enables individuals to identify necessary changes, identify existing resources, and emphasize the required resources. Collectively, this process makes a substantial contribution to the development, dissemination, and implementation of knowledge within the framework of exploratory practice.

Photovoice provides an invaluable opportunity for novice educators to establish a community of practice, facilitating the development of their professional identity through the exchange of teaching experiences and collaborative efforts towards a common goal. A community of practice is characterized by the voluntary collaboration of its members in sharing their experiences. The community of practice was introduced as an approach to assist novice educators in developing a professional identity [35]. The members of this educational cohort possess common objectives, values, and responsibilities. They engage in open communication regarding their emotions, experiences, and knowledge, all of which contribute to a common objective.

The scholarly evidence indicates that this type of community offers a valuable opportunity for the development of a professional identity. Verbal communication is a vital component of a community of practice, serving as a primary instrument for the construction of knowledge and identity in alignment with the tenets of social constructivism. The study presents a personal account of the implementation of the pedagogical approach known as photovoice, which was employed to promote critical self-reflection among prospective educators regarding their perceptions of students from disadvantaged backgrounds in a fundamental

elementary education class [36]. The author conducted a pedagogy course as an action research project with the objective of assisting 28 pre-service teachers in examining their perspectives on educating students from low-income backgrounds. The students were required to capture 20–30 photographs that reflected their individual perspectives on the designated topic. They then selected the top ten images for discussion in class. Subsequently, the class employed the photo protocol to analyze the images, investigating their significance and potential educational implications, particularly in urban schools with disadvantaged backgrounds. Subsequently, the students created PowerPoint slides containing their photographs and reflections. These were then showcased in a gallery walk to foster further discussion. This exercise yielded valuable insights for the instructor and emphasized the importance of engaging in discussions about effective pedagogy for students from economically disadvantaged backgrounds. The use of photovoice allowed the pre-service teachers to express their thoughts openly and address any stereotypes they held about these students.

A pre-service teacher study was conducted to obtain feedback from participants regarding their experiences and perceptions of a photovoice approach [37]. The findings indicated that most participants demonstrated a proclivity to divulge personal narratives and reported experiencing emotional sustenance throughout the sessions. Graziano's study demonstrated that photovoice serves as an effective tool for fostering reflection among pre-service teachers in a group setting. The community of practice places a high priority on interpersonal relationships within the group. During group discussions, participants are provided with verbal information and professional support. Photovoice offers a valuable platform for inexperienced educators to foster a community of practice, enabling them to strengthen their professional identity through the exchange of teaching experiences and collaborative efforts towards a common goal.

The effectiveness of Photovoice in accessing diverse levels of knowledge has been demonstrated. The combination of photographs and interviews allows for a comprehensive understanding of knowledge that encompasses explicit, tacit, and latent forms. The procedure can be deduced from the alterations observed in the individuals involved in the Photovoice and empowerment project, as discussed in the study "Evaluating the Transformative Potential of an Exploratory Practice Project" [38].

Moreover, when employing photovoice as an exploratory practice method, it is essential to recognize that photovoice is a research methodology that integrates exploratory practice and arts-based research. Its objective is to enhance comprehension of diverse contexts, transformations, and educational strategies. The approach is a feminist exploratory practice strategy tailored to engage marginalized populations as active participants in the research process. This approach is characterized by its emphasis on empowerment, engagement, and the goal of fostering educational and societal transformations.

This methodology can thus be regarded as an example of arts-based research in which individuals utilize photography as a means of documenting, examining and elucidating their own images, thereby constituting an integral component of the research methodology. The objective of this methodology is to prompt further investigation and to facilitate the development of new research avenues. Photovoice allows for a rigorous examination of visual representation by leveraging the unique capabilities of photography, a medium that is inextricably linked to cultural contexts. This study concentrates on the analysis of photovoice as a component of exploratory practice.

The study undertook an in-depth examination of the individual experiences of empowerment among female participants in the Photovoice Villa Verde project. The document documented their advancement in understanding, self-awareness, and availability of resources, which resulted in beneficial changes. The interview guide employed in the study encompasses inquiries pertaining to the motivating factors that prompted participants to engage with the Photovoice project, their involvement in community activities, noteworthy experiences or activities, and the insights they gained from interacting with fellow participants.

Moreover, the guide assesses the project's impact on participants' comprehension of the food environment, alterations in their shopping behaviors, potential for launching new initiatives, concepts for individual or joint ventures, and continued engagement in the community after the project. The study also investigates the participants' engagement with politicians, difficulties in utilizing and retaining the knowledge and skills gained from the project, interactions with other participants and individuals featured in their photographs, as well as their personal growth and unexpected discoveries related to their own conduct.

The objective is to present the social reform theory of practice and research in the context of photovoice, which encapsulates a feminist perspective. The principal focus of the study was the low-income district of Villa Verde in Madrid, Spain [38]. Two neighborhoods within the district were selected for the study, and a targeted sampling approach was employed to recruit 24 participants, 14 of whom were female. In accordance with Wang's methodology, the participants were divided into small discussion groups, with a minimum of five sessions conducted.

In the initial session, participants were instructed to utilize the digital cameras provided in a photography workshop to capture images of food-related elements in their neighborhood over the following week. During sessions two through four, participants engaged in group discussions to review and discuss their photographs. Subsequently, the data was analyzed, and emerging themes were identified. The project culminated in a concluding meeting during which participants acquainted themselves with one another, received personalized portraits, and determined the intended utilization of the outcomes.

The participants then proceeded to unveil the captivating visual journey of the Photovoice project in Madrid, 2017. They then proceeded to carefully select the stunning photographs to be showcased in the exhibition and actively shared their powerful stories with the world (Figure. 3 & 4) [38].



Figure 3. Female participants of the Photovoice project conducted in the District of Villaverde, Madrid (Spain), 2016



Figure 4. Unveiling the captivating visual journey of the Photovoice project in Madrid, 2017. The participants carefully selected the stunning photographs to be showcased in the exhibition and actively shared their powerful stories with the world The study findings indicated that the participants exhibited personal growth, acquired new knowledge, and developed a more critical and empathetic perspective. The use of photography as a tool prompted contemplative processes and critical introspection, which in turn led to increased feelings of empowerment and social consciousness. Active participation by the individuals was a crucial factor in the generation of knowledge and served as a guiding force in the implementation of policy changes. The decision to establish distinct Photovoice groups based on gender was made with the intention of capturing gender-specific perspectives and offering women an autonomous platform to express their opinions. The cultivation of positive social interactions and relationships contributed to emotional engagement and exerted a significant influence on the development of robust group dynamics. The project facilitated social interaction, which led to the formation of friendships and the expansion of participants' social networks. This was identified as the most significant positive result. Despite facing constraints such as time commitment and gender imbalances, the project has continued to progress in its development. Participants have been actively translating their research findings into practical strategies to improve their local food environment and have been collaborating with local institutions.

#### 3.4 Conceptualizing Knowledge Domains and Analysis in Photovoice

The Photovoice method provides a distinctive methodology for the discovery of implicit and dormant forms of knowledge. The visual component encourages active participation, while group discussions facilitate critical thinking. The use of direct quotations from participants and community feedback has been demonstrated to be an effective method for raising awareness at both the individual and community levels, in alignment with previous research [29, 34].

Figure 5 provides a conceptual representation of the interconnectedness of the different domains of knowledge that can be accessed through the use of photovoice methods and adapted from [57]. The relationship between explicit knowledge, which is observable, tacit knowledge, and latent knowledge is complex and interconnected. While structured questionnaires and other methods may effectively capture specific aspects of explicit and observable knowledge, they are not sufficient for capturing the full range of knowledge that photovoice methodologies can access.

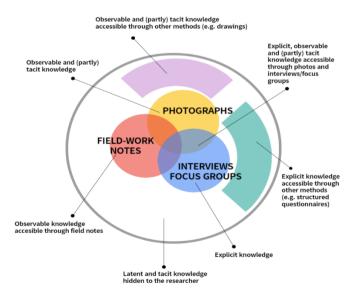


Figure 5. Conceptualization of the different levels of knowledge that can be accessed through photovoice methods

In the context of exploratory practice using photovoice, educators could actively engage as participants or take on the role of researchers, analyzing the photos taken by other participants in a mutually beneficial way. The methodology for conducting data analysis that is outlined herein comprises four stages [39]. The aim is to achieve a balance between the viewpoints of teachers as both the position of participants and researchers, mutually in creating reliable visual and narrative representations during the exploratory practice. Stage 1 involves the interpretation of the photographs by the participants. Building upon the findings of the preceding phase, this one is primarily focused on an in-depth examination of visual images from the standpoint of participants' interpretations [40]. It is designed to circumvent the inadvertent imposition of the researcher's own viewpoints. This preliminary analysis lays the groundwork for understanding the phenomenon from the participants' perspective. Stage 2 involves the researcher's interpretation of the photographs. The second stage involves the classification and analysis of photographs to identify underlying themes. Researchers continually engage in the process of categorizing and re-categorizing visual data until saturation is reached to achieve a comprehensive understanding of the data. Stage 3 involves cross-comparison. After conducting individual analyses, the researcher compares the results by juxtaposing photographs with photographs, narratives with narratives, and so on. This stage allows for a "dialogue" between the researcher's interpretations and those of the participants. The goal is to arrive at an integrated explanation of the phenomenon. Stage 4 involves the process of theorizing. The final stage focuses on theorization, in which the researcher identifies connections between the themes that emerged from the cross-comparison. This step aims to create visual and narrative representations that provide a comprehensive explanation of the phenomenon. An understanding of the data analysis process can be enhanced by referring to the data analysis flowchart for the use of photovoice as presented in the study, adapted from [29] (see Figure 6).

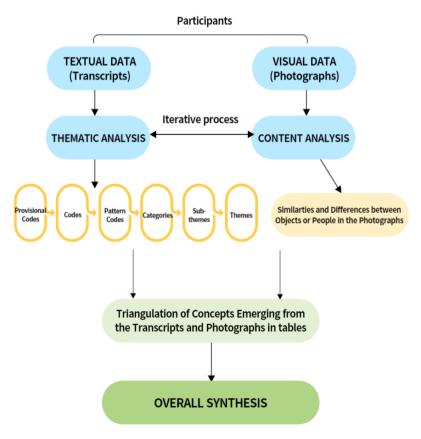


Figure 6. Flow chart of the overall data analysis process

The study, entitled "Critical Analysis of Photovoice" (see Figure 7), demonstrates the value of employing photovoice methodology in exploratory research [19]. In line with exploratory practice and feminist theory, the initial phase of photovoice involves reaching consensus on the research topic within the collaborative community. This critical step is essential for establishing meaningful partnerships and engagement, as well as addressing power imbalances within the team [19, 54]. In addition, this phase includes instruction on photography and ethical behavior during fieldwork. While the primary focus is not on creating artistic images, the training should prioritize the technical aspects of image production. Participants then produce images either individually or collaboratively, selecting those that will influence subsequent group discussions, adapted from [19].

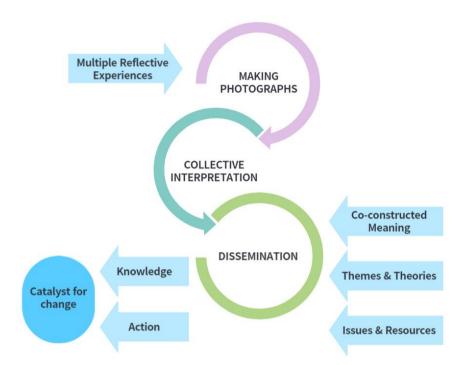


Figure 7. Conceptualizing Knowledge Domains in Photovoice

## 4. CONCLUSION: PHOTOVOICE EMPOWERING TEACHER PRAXIS

This research study explores the novel integration of photovoice and exploratory action research as a means of empowering teachers and enriching their professional development. The study seeks to narrow the gap between theory and practice by providing a platform for educators to articulate their perspectives through the medium of photography (e.g., [41]). This paper acknowledges the difficulties teachers face in transitioning from research subjects to active participants. It proposes a strategy that engages all stakeholders in meaningful professional development (e.g., [42-43]). The review evaluates the effectiveness of photovoice in revealing undisclosed facets of teachers' experiences and highlights the capacity of photo exhibitions to improve teachers' professional practice. The primary goal is to empower educators through exploratory practice and photovoice, fostering critical reflection and enabling beneficial change in teacher education.

In addition, the study seeks to develop a theoretical framework for the emerging research methodology known as photovoice. The paper examines the early research of Wang and Burris, who introduced the term photovoice, and explores the development of photovoice by incorporating various concepts and characteristics.

The study explores Freire's concept of critical consciousness as a theoretical foundation for photovoice and presents a methodology that ensures the reliability of photovoice research through triangulation verification. It also highlights the increasing use of photovoice in various academic fields [44]. In addition, the research highlights the importance of using photovoice to amplify the voices of marginalized communities, catalyze societal change, democratize knowledge production, deepen experiential understanding, and leverage social media platforms for research efforts (e.g., [45-47]).

The research underscores the growing importance of reflective professional practice in teacher education, highlighting the need for active engagement and coherence with a community of practice. The implication is that mentorship, when paired with photovoice, has the potential to increase engagement and stimulate reflection among educators. The study recommends that institutions prioritize mentor-mentee interactions and facilitate dialogue between experienced mentors and novice educators (e.g., [48]).

The incorporation of photovoice into exploratory practice has demonstrated the potential to foster transformative impact in educational settings (e.g., [49]). Participants have actively engaged in the critical analysis of visual media and delved into pedagogical methodologies, which has sparked interest in integrating photovoice into their future educational and research endeavors. The methodology has increased participants' awareness and critical understanding of pedagogical issues [50-51]. Additionally, using photovoice has provided valuable insight into the perspectives of aspiring educators, particularly as they relate to poverty and how it affects education. This phenomenon has prompted significant introspection among educators and sparked important dialogues about the educational experiences of marginalized students [52].

Incorporating photovoice into inquiry practice has considerable potential to enhance educational research and practice. It can facilitate deeper engagement, encourage critical reflection, and promote a more nuanced understanding of the dynamics of teaching and learning. Enhancing the creativity and empowerment of participants in future photovoice projects can be achieved by extending the duration of projects, organizing photo exhibitions, and effectively addressing challenges (e.g., [53, 58]). The study concludes by emphasizing the importance of being cautious when using qualitative methods, highlighting the need for full understanding and a transparent decision-making process [54]. Simply applying a tool such as photovoice without considering its underlying principles and goals could potentially limit its effectiveness. Photovoice is not just a methodological tool; it acts as a dynamic platform that allows participants to articulate their thoughts and feelings through visual imagery [55, 56, 58]. The presentation phase of photovoice is emphasized as a transformative experience in which participants share their narratives and perspectives with the community. The text implies that researchers should actively engage participants and the community to enhance their understanding and amplify their voices through photovoice. The text emphasizes the importance of researchers actively listening to and supporting participants throughout the research process. This approach fosters collaborative efforts aimed at mutual understanding and problem solving.

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