

The potential for using visual elicitation in understanding preschool teachers' beliefs of appropriate educational practices

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We explore the use of video and photo elicitation in a research study undertaken to understand the way in which preschool teachers perceive and construct their provision of children's educational experiences. We explore the value of visually elicited interviews based on video footage and photographs captured during teaching and learning in four classrooms in two preschool settings in Kenya. Through visually elicited interviews, both the teachers and the researcher constructed meaningful conversations (interviews) to explore preschool teachers' practical experiences and their beliefs, understanding and interpretation of developmentally appropriate educational practices. This paper targets the possible value of and contribution made by visual data generation procedures, as well as their inherent challenges, in order to add to the body of knowledge on visually elicited interviews.

Keywords: belief systems; developmentally appropriate practices; early childhood education; interviews; photo elicitation; photographs; video elicitation; video recordings; visual methodologies

The aim of this paper is to present our exploration of the potential of visual methodologies in early childhood research. In this endeavour, we explored teachers' beliefs about preschool children's educational experiences in both a Montessori (private) school and a public preschool system, in the District Centres for Early Childhood Education (DICECE), in Kenya. In this paper, we share the decisions that had to be made when engaging with visual elicitation methodology in order to add to Mitchell's statement (2008:365) that visual methodologies should be "appreciated within [their] full complexity" as "the lens is a defining technology in the current era" (Schroeder, 2003:81). Moreover, this work is important because visual research is gaining prominence (Aubrey, David, Godfrey & Thomson, 2000).

Prosser (2007:13) identifies visual research as "the production, organization and interpretation of imagery", while Emmison and Smith (2000:4) define visual research as "any object, person, place, event or happening ... observable to the human eye" and not only limited to photography. This research study, however, focused on photographs and video footage as visual data used as visual elicitation tools. Harper (2002:13) traces the term "photo elicitation" to work done by John Collier and his colleagues in the 1950s and defines it as "the simple idea of inserting a photograph into a research interview". We broadened Harper's concept to include video-elicited interviews that use video material to elicit teachers' responses regarding their classroom practices.

The use of visual methods in research has its origins in ethnography, anthropology and sociology (Harper, 2005; 2004; 2002; Pink, 2004; 2003). The visual may be richer than the

written word because it captures information about a specific context, process, event or people (Harper, 2005; 2002; Pink, 2004; Prosser & Schwartz, 1998). Therefore, video recording is, increasingly, gaining popularity in research and it is possible to use it without undue interruption (Patton, 2002). To exploit this in educational research, we combined both video- and photograph-elicited interviews as visual elicitation in the research study, which explored preschool teachers' beliefs, their understanding and their interpretation of developmentally appropriate educational practice (DAEP) in Kenya.

In this paper, we present an overview of the methodological choices taken to generate visual data, providing the requisite details of their construction. We also explore some of the complexities of using visual data, as experienced in this research. Further, we demonstrate how the dynamics that occur outside the purview of the camera's lens, "which is limited by the camera frame" (Reifel, 2007:42), can empower the visual researcher and the reader of a visual text, since "photography remains closely tied to identity, memory, and presence" (Schroeder, 2003:82), and, accordingly, explicate culturally relevant meanings for a specific context (Reifel, 2007).

Although, as previously stated, this research explored preschool teachers' beliefs, this paper highlights visual elicitation as a methodological approach used to access teachers' beliefs. Previous studies on teachers' beliefs agree that beliefs are entrenched in a person's repertoire of experience, even though most of these studies have tended to use self-reported approaches (Kowalski, Pretti-Frontczak & Johnson, 2001; McMullen, Elicker, Wang, Erdiller, Lee, Lin & Sun, 2005), which might be limited in capturing the teachers' actual beliefs. Vartuli's (1999:490) warning that "teachers tell you what you want to hear" encouraged our choice of visual elicitation as an alternative to accessing teachers' beliefs, in order to mitigate the limitations inherent in self-reports. In the following section, we sketch a brief background of the research study conducted, in order to situate methodological decisions that are fundamental to creating visual data.

Background to the research study

Research design

This study was guided by a constructivist paradigm in terms of which it is believed that actors in the social world socially construct their experiences (Creswell, 2002). Therefore, the teachers as participants, and the researchers, were deemed capable of using their individual and collective experiences to create an understanding of children's educational experiences and the teachers' beliefs about developmentally appropriate educational practices (DAEPs), as viewed through social and cultural lenses, to explain such experiences. A qualitative multiple case study (Yin, 2003) was used to explore preschool teachers' beliefs about developmentally appropriate educational practices. By using a multiple case study design and with the help of the photos and videos that were made, the teachers' actual practices during their daily interactions with children were explored and, subsequently, their emerging beliefs about their actual practices. The first author was the active fieldworker in the study, and will be referred to hereafter as the researcher.

Selection of participants

A stratified, purposive sample was used to select four female teachers holding a certificate in early childhood education (ECE), and who were responsible for teaching four- and five-year olds. The teachers' experience ranged from two to 12 years. We chose the teachers for actual

classroom observations based on their willingness to participate in all stages of the research. In selecting the participants, we were careful to choose a site where consent, access and use of video would not be problematic. Harper (1998:29-30) acknowledges this difficulty when he warns, “the camera makes access more difficult; in some circumstances, it makes it impossible, ... photographing ... influences how the fieldworker is received in the field”. However, the researcher’s prior relationship with some of the teacher participants and the parents made it easier to establish rapport for the purpose of obtaining consent to use and have access to visual data tools.

A note on ethics

The use of visual elicitation has inherent ethical complexities. In gaining permission and informed consent, the researcher assured the various role players that the classroom observations would not “interrupt” the normal schedule of school activities. Retrospectively, at the time we made this promise we had not reflected on the meaning of “interruption”. Therefore, although there was no physical interruption, we acknowledge that the presence of the researcher may have interrupted the psychological space of the participants, especially because of the use of the video camera.

Pseudonyms ensured confidentiality for the schools, teachers and children in the study (Bogdan & Biklen, 2007; Christians, 2005). However, the photographs and videos contain unavoidable identifying details. Consequently, the researcher sought independent consent from the teachers and parents (on behalf of the children) to use the visual data. Even so, the researcher was extremely careful to present visual data that limited the revealing of participants’ identities. Pink (2004:4) warns that “visual data [sic] should be carefully weighed up alongside the ethical issues they raise ... and [yet] visual knowledge cannot be directly or adequately translated into written words”.

Although we did not intend or anticipate any harm to the participants, as a precautionary measure we endeavoured to protect all of them from psychological and physical or social harm (Bogdan & Biklen, 2007). Consequently, continuous debriefing throughout the research period ensured the teachers’ continued interest. Further, the researcher eased into the research site gradually in order to establish rapport and reduce the levels of anxiety generated by her observations. To conclude, we agree with Ruby (as cited in Pink, 2003:188) that “ethical visual research and representation ought to be collaborative, reflexive and represent the ‘voices’ of informants”, all of which we endeavoured to do in this research.

The pilot phase: assessing the potential of visual research

We decided to begin the research by conducting a pilot study to explore the potential of using both a digital camera and an audio tape recorder at the research site, as Pink (2004) recommends increased sensitivity to the meaning of visual tools in research contexts. Other concerns included the appropriateness of the equipment, the privacy of the research participants, and the feasibility of using the equipment. Consequently, apart from testing the instruments, the pilot phase was used by the researcher to recruit teachers on the basis of their willingness to participate, the age of the children they taught and their training.

Pilot work proved useful in four ways: firstly, the pilot phase became an opportunity to establish rapport with the teachers and the children, and to habituate them to her presence, before the data generation proper (Creswell, 2002). Secondly, technical challenges became apparent in that the Montessori preschool had electricity, while the DICECE preschool did not,

which necessitated the provision of sufficient back-up batteries for the video camera to support continuous data generation. Thirdly, obtaining the informed consent from parents took longer than envisaged because each parent gave consent individually. Although the researcher could have sought the parents' consent as a group, individual consent was nevertheless sought in order to avoid what we perceived to be group "psychological level coercion" (Bogdan & Biklen, 2007:49). Fourthly, the pilot data were subjected to initial data analysis in order to appraise the whole experience of using a visual approach.

Data generation

Phase 1: The generation of visual data through observations

Two concurrent phases to generate visual data took place: In phase 1, the researcher made video clips and took photographs of the children's educational experiences in each teacher's class and these became the bases for the video- and photo-elicited interviews in phase 2, which stimulated reflection (Aubrey et al., 2000).

The researcher spent an average of six days of between three to four hours a day observing educational practices on an intermittent basis. In each of the classes, of the average eighteen hours of observation, six hours were video recorded, and these recordings were supplemented with notes on the observation, concurrent with visually elicited interviews (Bogdan & Biklen, 2007; Creswell, 2007; Harper, 2002). Throughout the research, we remained sensitive to possible weaknesses of observations, such as participant reactivity, researcher fatigue, expectancy effects that predispose the researcher to anticipate events based on hypothesis, unsupported inferences, and biased interpretations (Cohen, Manion & Morrison, 2007).

Phase 2: Visually elicited interviews of teachers' beliefs

During the second phase, the photographs taken and videos made of assorted classroom activities became "issues-based" representations intended to obtain interviewees' responses, rather than as use to script an outline of questions (Rapley, 2004:18). In addition, the researcher fully informed the participants on the nature of the interview and its duration, as well as the protocol surrounding the video recordings and photographs of their classroom practices (Cohen et al., 2007). None of the teachers refused to be photographed or videoed. Accordingly, the researcher arranged follow-up interviews with each teacher (Bogdan & Biklen, 2007) at a time that suited them. In the interviews the teachers were asked open-ended questions about individual activities in their classrooms in line with the requirements of case-study interviewing (Yin, 2003). As mentioned, despite having been given prior consent, the researcher debriefed each teacher before each interview to gauge whether they were still willing to participate (Cohen et al., 2007; Creswell, 2007).

Prior to each interview, in anticipation of power outages, the researcher printed several photographs representing divergent structured activities and presented them for photo elicitation. Although the researcher's prior selection of photos might have limited the participant's choice, the structured nature of activities partially mitigated this weakness as, in each interview, there had to be a mathematics, reading or story-telling session, inherently limiting the researcher in the choice of visuals to discuss. In addition, each participant viewed their own visual data prior to the visually elicited interviews and chose which visual segment to focus on, in what can be termed a "power-sharing strategy" (Gubrium & Holstein, 2003), effectively avoiding "symbolic violence" (Barbour & Schostak, 2005:43). Therefore, these visual interviews became "social constructions" (Rapley, 2004:16); the premise being that teachers are

then more knowledgeable and more empowered to discuss their activities because “the power of the photo is its ability to unlock the subjectivity of those who see the image differently than the researcher” (Harper, 2004:236). In the following section, we present some of the photographs and an excerpt from an interview in order to showcase the value of photo and video elicitation.

Exemplar of visual data

The images in Figures 1–3 capture some of the learning material that is available in the classrooms, as well as examples of written work done by 5-year-olds in both preschools.

The selection of images (Figures 4–6) from the video clip shows the teacher selecting two children to demonstrate how to thread beads. When they have done so, the teacher asks the rest of the children what the demonstration is all about (the activity of threading beads), as well as possible outcomes or functions of the activity (e.g. making a necklace). This activity is done rather hurriedly before children disperse to engage with a typical writing activity, as shown in Figures 3 and 5.

Nuanced interpretation (field notes): The teacher is in a hurry to complete all the structured activities for the day because she is under pressure from the parents to prepare children for the “mainstream” learning curriculum.

Excerpt from interview (see photographs 4 and 5): The interview transcript has only been slightly edited in order to capture the words of the participant (whilst acknowledging that spoken and written language do differ), as Poland (2002) notes that verbal interactions are based on a kind of logic that differs from the logic of prose, because verbal interactions are supported by all kinds of supporting circumstances that are absent in pure stylistic prose. A transcription of a quite coherent conversation may therefore look remarkably disjointed and even incoherent when the words of such a conversation are committed to the printed page.



Figure 1 Sample materials in Montessori class



Figure 2 Sample of materials in DICECE class

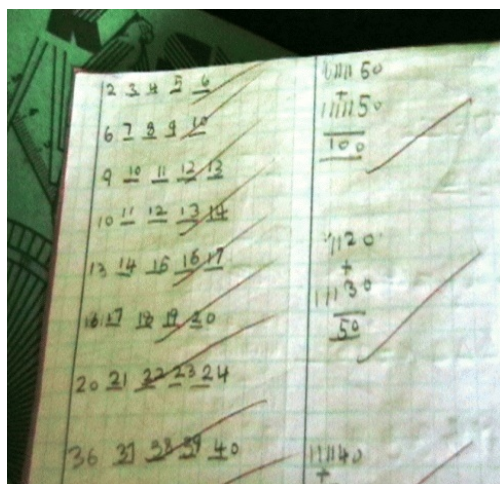


Figure 3 Example of work in a Montessori 5-year-old class



Figure 4 Threading beads

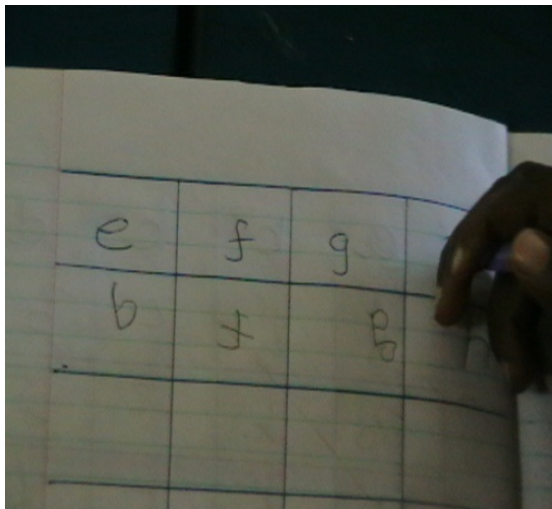


Figure 5 Child copies work

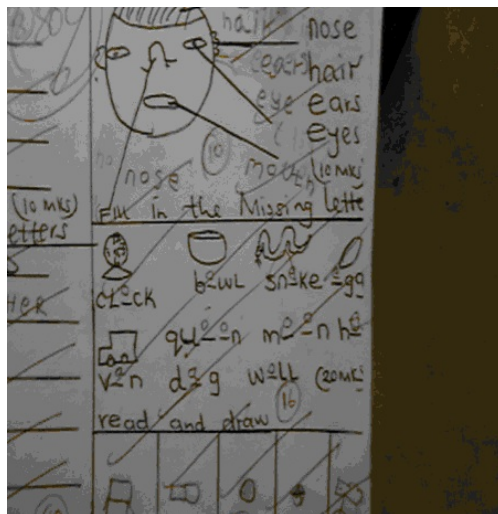


Figure 6 Sample of written work in a DICECE class

1. S: These two children were threading beads. This threading beads are the materials in class, whereby children can work on their own. When the teacher has introduced the activity.
2. S: Whereby the one who is threading beads knows more than the other one who is just observing ...
3. This activity:
4. R: Why didn't you give all the children that opportunity to talk about it?
5. S: About the threading beads...? Ee, I can give them anyway, but since also time cannot allow.
6. R: Tell me more, what do you mean by "time cannot allow?"
7. S: Because we cannot continue threading the beads aalllllll the day [stressing all] because we have other activities to do...we have to do class work like writing ..., [pause] ...
8. R: Okay
9. S: Okay, it is must to do class work..., you know with Montessori, they value a lot on activities, but you can continue to say I am a Montessori directress ..., let me deal with Montessori ... it depends also on the environment [later clarified as transition system] ...if I go on sitting with all types if materials of Montessori, maybe at the end of the day, a parent will come..., and wants to know ..., is my child writing, can I see her books or his books? So, we cannot concentrate only on those activities. We have to give limit so that we can have time to do class work.
10. R: Teacher S, you have just told me about the environment.
11. S: Yes
12. R: What about the environment?

13. *S: Okay, right now we are dealing with a Montessori system ... and these children will end up in a public school ... whereby they will not know about Montessori. They like the child to work like the other in public schools, so we have to be careful with that class work also, so we have to give time ... because with Montessori, if we say now we are going to do the real Montessori, maybe all the time will be consumed by these materials because they are so many. You will not have time to teach this child to know numbers 1 to 20, how to calculate mathematics, how to read, ee...*
14. *R: Isn't that supposed to come out naturally when the child interacts with the materials?*
15. *S: Yea, it comes, but you see, time (stress) does not allow you to follow each and everything.*
16. *R: mmmh*
17. *S: So you have to use the material that you see very quick, not to waste a lot of time.*
18. *R: So you don't use all the materials?*
19. *S: No we don't. Let me be sincere anyway*
20. *R & S: laughter...*
21. *R: Tell me more about that?*
22. *S: Okay, how we were trained in college, we were trained actually as a Montessori teacher, you know we have these international schools in Nairobi whereby they can follow the Montessori system.*
23. *S: We have to be careful, we know we have to give them also our Montessori as well as giving them what they are going to do, because if we I want to be a real Montessori...at the end of the day, maybe I will consume a lot of time, in activity work, than in doing the writing... Okay, we anticipate a lot of problems because as far as we may deal with these materials, may one material has a lot of stages, one two three, four, even to six...so if you deal with the same materials maybe one to six, maybe the whole term will finished.*

Clearly, contextual background beyond the visual data is important for fully comprehending the classroom practices and inherent beliefs discussed. In our research, as the teachers constructed their experiences, it became apparent that they are under pressure to focus on academic tasks and accommodate standardised tests in the children's educational experiences, as Figures 1 to 6 illustrate.

As we tried to understand the positioning of the participants in their cultural context, it became apparent that all teachers varied their teaching approaches to accommodate the contextual dynamics which require children to transition to primary school using standardised tests. Therefore, teachers helped to construct the experience as meaning in context (Reifel, 2007). During the visual capturing process, our nuanced interpretation became that *the materials* in the preschools *remained silent*, even in the Montessori classes, whose philosophy recommends the use of materials. Teachers gave preference to work such as that captured by Figures 3, 5 and 6 in preparation for the class one (transition class) interview. A nuanced perspective captured in most of the visualised contexts was that all the teachers gave children more academically orientated tasks, which kept them away from free play that might be disruptive and disorderly and that would therefore need supervision and take up more class time.

The visual observations showed that children finished each structured activity and then began another. Consequently, as suggested by Patton (2002), the photographs gave us visual data containing contextual detail and an opportunity to understand the context of behaviour in order to discover things that may have been taken for granted. More significantly, we learnt

things that people would be unwilling to talk about (*cf.* excerpt line 19: *no we don't [use Montessori materials] let me be sincere anyway*). Clearly, if visuals of the array of activities captured had not been available, it might have been difficult for the teachers to acknowledge this limitation in their teaching.

Emmison and Smith (2000) suggest that the framing and interpretation of visual data should be theory driven. Influenced by the theoretical fundamentals of DAPs, we entered the field with the expectation that one of the basic principles of a child-centred approach is to engage the children using learning materials. Although this is an internationally accepted principle (hence our preconceived notion), a cultural dispensation is called for when it comes to ECE education. Therefore, one of our initial conclusions was that the research contexts were not developmentally appropriate. This was, however, before we realised that the “content [of a photo] often overwhelms context” (Schroeder, 2003:83). As we engaged reflexively on this pre-emptive conclusion, it became apparent that we had ignored the cultural dispensation, as we “use technology to slow down and repeat observations and encourage deeper reflection on perception and meaning” (McDermott & Mehan, in Prosser, 2007:13) of our conclusion. We needed to understand the teachers’ approach as being embedded in the sociocultural context. In retrospect, this implies that their approach was culturally and contextually relevant, even if it might appear to be developmentally inappropriate. More reflexively, only a few children (such as those in Figure 3) missed the concepts that might conventionally appear to be beyond the scope of five-year olds. The visual elicitation process also resulted in the teachers being active collaborators rather than passive objects of the study and, as Stanczak (2004) argues, this helped to cross the researcher/subject divide. In sum, the visual elicitation process became a means for both the researcher and the participant to deconstruct their positioning on the research process, allowing for a divergent interpretation of the visual data.

Challenges inherent in the use of visual methodology

In line with other researchers who suggest that a number of challenges are inherent in visual studies, our study exhibits the following challenges: a) analytical limitations; b) methodological challenges; and c) technical limitations. We explore each in turn.

a) Analytical limitations: difficulties related to visual analysis

Visual research is relatively new in educational research and its analytical tools remain limited. In the current study, it was challenging to process the visual data. Some of the decisions that had to be made in this regard included the need to transcribe the video voice material so that more information was obtained on the activities in the clips. An attempt to use video software, Transana (see www.transana.org), to analyse the data proved to be highly technical and cumbersome, especially because the data were generated before the software was acquired. It should be noted that researchers are encouraged to assess various analysis tools prior to data generation and, then, to generate data that can be supported by the software.

b) Methodologically related challenges and prospects

Logistics of coverage

Visual researchers working in early childhood settings face an additional complexity related to stability of focus, especially because a preschool setting is dynamic. For example, at the initial stages of the research, the video seemed to distract some children who sought the attention of the researcher, especially when the camera faced them. However, the researcher

overcame this by tactfully monitoring the activity using the external LCD screen, thus maintaining eye contact with the target child, but tactfully avoiding the distracting child. Further, the researcher remained as discreet as possible during the observation by positioning herself at the back of the classroom (Cohen et al., 2007; Creswell, 2002; Yin, 2003). However, since the classrooms were 'ready-made' sites, in some classrooms this was not always possible, especially where the camera light was directly opposite a window. In such instances, the researcher took photographs from a strategic position for clarity before retreating to the background to continue with video footage. Further, to reduce the effects of the observer presence, multiple observations took place. Another limitation related to observation, even when a sampling approach is used, is selective or erratic attention. However, in this research, there was a self-correcting solution to this challenge, as the group approach to children's educational experiences used by the teachers solved this problem.

The meaning of video use in context

Trust is problematic in video research. However, in this research, it became a means of establishing rapport with the teachers (Bogdan & Biklen, 2007), as the researcher gained their confidence through debriefing and by reviewing the video with them. In fact, one teacher, who the researcher had not included in the research, pleaded to participate as reflected in the following excerpt from the fieldnotes:

Today is the third week after schools opened for the school year. I arrive at the school as scheduled as I am welcomed by the Head Teacher before she leaves me in her office to attend the general assembly with the children and other teachers I begin to write my today's journal ... after the assembly, teacher Alice who happens to be teaching three-year-olds comes to request me to enjoin her class in the study. Although she pleads with me, I gently apologize and explain to her that my study would focus on mainly four year-olds and five-year olds.

Overall, as is shown by this excerpt, it would appear that the participants were at ease and willing to participate. Besides, the use of a video camcorder as a tool for data generation assumes a prestigious role in these contexts. As is evident from the personal experiences, in many other Kenyan contexts the 'intrusion of privacy' cliché has not pervaded the research context. It should be noted that, on several occasions, even the non-participating teachers requested a photo session with the researcher.

c) Technological challenges

An imported hand-size digital camcorder, which served the dual function of capturing both videos and photographs, reduced the clumsiness that can occur when handling cameras and video recorders. Although this duality of function offered some convenience in that fewer research tools had to be carried around, the switching mechanism by means of which the video could be stopped in order to take a photo might have resulted in important moments being missed on video. In addition, the manipulation of cameras and video cameras, as well as the sheer enormity of the data, is likely to lead to fatigue. To counteract this, field notes were triangulated with visual data to reduce the possibility of observer bias resulting from fatigue. Roberts (2007:70) advises that "today the noting of field activities and reflections can be aided by the (digital) tape recorder, the video camera, mobile phone (using video, image and text), photographs and even direct to a hand-held computer". At times, the researcher also recorded

her own spoken reflections using the video camera, thus reducing the need for handwritten notes.

As the research used an imported digital camera, a number of additional challenges were experienced. For example, camera accessories included mini DVDs and extra batteries, which were not readily available in the research context. In addition, the cost of the mini DVDs at the time was high, retailing at ten times the price of the normal DVDs readily available on the market. This cost was avoided by transferring the data to the cheaper standard DVDs. However, this data transfer proved cumbersome and delicate, but probably enhanced the processing and management of data.

Another technological limitation was the inconvenience caused by comparing the DVD processing software that came pre-installed with the research laptop with competing software that the researcher was familiar with. In hindsight, this consumed valuable time could have been used to expedite data generation.

Concluding remarks

In our paper, we highlighted the various decisions made during visual data generation as we tried to connect inherent teachers' beliefs to the visual interviews. With the support of visual data, this research located teachers' beliefs within their own experiences. The visual data pre-empted our theoretically preconceived conclusions as we subjected it to more reflexivity. For us, as researchers, capturing the implicitness embedded in teachers' beliefs would not have been possible without the use of photos and video recordings. In many instances, the rational explanation of what teachers would argue are their beliefs about teaching and education did not correlate with the framework of DAP. However, we, as novice visual researchers, conclude that photos and videos played a valuable role in enhancing collaboration, building rapport and trust between the researcher and participants, and supporting the richness of the data captured by this study.

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