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Using Media Education to Change the Behaviour of School Children for Environmental Conservation

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Abstract

Researchers have become increasingly mindful that pro-environment behavior is influenced by many factors. However, Mass media plays a pivotal role as a source of information, in disseminating knowledge and concern about environmental problems. Everybody on the planet depends on a common biological system and endeavors the assets for a sound existence (Thousand years Development Goal, 2010). But for the quickest advancement of selfish humans, the environment has been horrendously mismanaged and thoroughly exploited. By destructing the environment we have pushed ourselves to a highly dangerous situation that calls for immediate action and reconciliation with nature. The present generation, the children in particular need to be informed and be educated on this grave issue. The Mass Media and New Media in particular have the huge potentiality to reach out and engage the children. According to Harcourt and Conroy we need to agree with the fundamental principles of the rights of the children which position children as legitimate decision-makers about matters that affect their lives even though they are under the protection and support of adults (United Nations Children's Fund, 2004). Therefore this paper reports a case study on a media education-based environmental studies course, with school children, which sought to engage students in exploring and reflecting on a wide range of locally significant environmental issues. A selected number of documentary films on the environment and wetlands of River Tamirabarani in Tirunelveli District, Tamil Nadu, South India were shown to them during the course. While films were the focus of the course, the post-film reflective discussion was an integral part in order to help students identify and clarify their thoughts and ideas. Evaluation of this course includes a pre and post-survey and post-teaching interview with the children. The results revealed that media education and repeated exposure of students to video documentaries on the environment combined with a participatory visual method on the course content are beneficial to developing students' orientation and critical thinking abilities which collectively leads to a more pro-environmental disposition and positive behavioural changes to conserve nature. In this article, we provide a reflective account of the research process and discuss lessons learned from our experiences of using documentaries for conscientizing and Artwork and Photography (Artwork included drawing, mat painting (Pathamadai mat work is very famous in this region)) and mime as data generation methods in this research with children. This article also provides the literature on the use of participatory visual methods as data generation strategies with children highlighting some admonitions and offering insight into how challenges could be evaded.

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Keywords

Media Education, Environment, Ecology, Behavior change, and Artwork, data generation, conscientizing, participatory communication, visual method tool

1. Introduction

Education through media gives huge opportunities to highlight consideration in the key issues of the day. It sets a plan for activity. With regards to climate additionally, media prepare public activity by spreading data identified with certain local, public and global ecological issues like strong garbage removal, natural contamination, and effect of populace development, deforestation and man-creature struggle and brings that open door for speaking with the majority. The overall study used action research as a methodology informed by the transformative paradigm (Mertens, 2009), but this article only focuses on the second cycle of the study where we used Visual Research Methods for this study. Visual research methods involve the mixing of visual material like video, photographs, and artwork, into the research process. This method of research is particularly befitting one to the children as it complements verbal and written data collection methods, which some children and youth may find challenging. The participants in the study were Tamil and English speaking children from Pushpalata Vidya Mandhir school in Tirunelveli District, South of Tamil Nadu, India, who could be classified as day's scholars living with their parents at home and coming to school at least 6 days a week regularly. The school where we selected participants was convenient because it was one of the schools we had a good relationship with as we had worked with this management in previous projects unrelated to this one. In addition, the principal, in our informal discussions, had shared with us that she wanted to give her students environmental education through volunteer teachers or researchers. So it was convenient to make this course part of their curriculum. In this cycle, we worked with 30 children between the ages of 10 and 13 (see Table 2 for more information on the participants). The aim of this study was to explore how media education could engage and help children change their behavior to become a pro-environmental task force.

When we embarked on the data generation process, we had already developed a rapport with the school and the children, as they were active participants in one of our photography exhibitions conducted for the public on River Tamirabarani Wetlands. To spend as much time as possible with child participants in it is important to order to gain their trust and to form a relationship (Punch, 2002). It was well noted that the children considered us as figures of authority, similar to their teachers because of us being adults. Burke (2008, p. 27) sets it this way: ‘‘The structure of reference that the researcher brings, that children are experts and knowledge producers does not sit comfortably alongside their own expectations of themselves as children.’’ So we addressed this probelmme by ensuring the children

that they could ask us questions and interact with us.

Documentaries on Environmental concerns and Collaborative reflections

FILMS. The films used in the course were selected from YouTube from the most viewed content and award-winning documentaries from social media. These documentaries are features exclusively contemporary social and environmental issues in India and in our research context. The films used for this course are listed in Table 1 with their connection to environmental topics. The documentaries selected deal with imparting knowledge to the participants regarding media education, environmental degradation, Tamirabarani Wetland conservation, and ways to conserve nature both locally and globally. An Inconvenient Truth (2006), and Ulagame Viantha Tamilarin Neer Melanmai (2018), for example, highlights the global environmental prolemmes and the local ancient history of how Tamil people in our state had amazing water management skills respectively leading the participants into discussions on understanding the global environmental issues and regenerating the cultural and ancient good practices to conserve nature.

Table 1. The Documentary films selected and the environmental topics covered

S.No	Selected Films and Year of Release	Media and Environmental topics
1.	An Inconvenient Truth (English) (2006)	Al Gore's on Global warming and Climate change
2.	The 11th Hour (English) 2007	About Global warming, Deforestation, and state of Humanity and the world
3.	Tapped (English) 2009	About the impact of Water bottle industries in climate change, pollution, and our health
4.	Chasing Ice (English) 2012	Problemme of planet's melting glaciers
5.	More than honey (English) 2013	About bees dying at the alarming rate and industrial and agricultural practices around us
6.	Wetland Functions & Values: (English) 2014	On Ecology
7.	Wetland's Ecosystem: Characteristics and Functions (English) 2015	Ecology and Environment
8.	Ungalukku Theriyuma? (Animation in Tamil) 2016	On Environment Impact Assessment (EIA Process)
9.	Yathum Oore (Inaivom, Ianippom) (Tamil) 2016	An environment conference on the aftermath of Chennai floods
10.	Water Politics (Tamil) Poovulagin Nanbargal 2016	Import and Export businesses and water Politics
11.	Mass Media and its role in Education (English) 2017	Talks about Education, and Psychology related subjects

12.	Story of River Tamirabarani (Tamil) 2017	The endangering ecological situation of River
13.	Vivasayamum Thanneerum (Tamil) 2017	Talk Show on Agriculture and Water
14.	Ulavu Parrvai (Tamil) 2018	On Air pollution in Chennai
15.	Ulagame Viantha Tamilarin Neer Melanmai (Tamil) 2018	On amazing water management system of Tamil People in India

As early researches have indicated the importance of explicitly provoking student reflection in the learning process, especially when specific places and issues are taught (see Stern, Powell, & Hill, 2014 for a review), we included collaborative reflective activities within the course. The focus is small group discussion for this generally gives students more opportunity to talk. After watching the film, students were asked to reflect on the issue and to complete group-based activities. Some activities were action-oriented; for example, students were required to reflect on the documentary they watched, and presentations were encouraged through the form of Artwork and Photography and Artwork included drawing, mat painting (Pathamadai mat work is very famous in this region), and mime etc., and to brainstorm ideas of activities that can go beyond food and entertainment and help educate people on the profound relationship between humans and nature. There were also worksheets that required students to discuss trade-offs and make a group-based decision; they were, for example, asked what they would do if they were the residents of the village that was chosen to be the site for an industry that would throw all wastes into River Tamirabarani which is the prime water source for people in three different districts as illustrated within the film (See Table 1) Story of River Tamirabarani 2017. After small group discussions, students were asked to present their results to the whole class. Their school instructor participated as a moderator in this phase with the focus of encouraging students to listen and share rather than offering opinions or drawing specific conclusions.

The course evaluation

The impact of this documentary film-based environmental studies course on students' environmental attitudes (EA) was assessed. Data were gathered by (a) a pre and post-survey using focus group discussion and group-based activities that measure students' beliefs, and behavioral intentions about the environment. We also conducted post-instruction interviews with a selective sample of students in order to understand students' perspectives on their learning experiences and learning gains. The interviews were conducted 2-3 months after the instruction because the students often left the campus immediately after the classes, as they were day's scholars.

The Participants in this study

A total of 30 students from Pushpalata Vidya Mandir school from Tirunelveli District (n =

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30) participated in the study for one year. They covered a wide range of disciplines, and the gender ratio (15 female and 15 male) reflected respectively the school enrolments. All the participating students were informed about the purpose and design of the study and assured that their decision not to participate in or to withdraw from the study would not affect their valuation of marks for the course. All of the enrolled students agreed to participate in the study, and completed the pre and post-survey, however, two were excluded from the analysis, one due to incomplete returned group works, artworks/photographs, and the other to low attendance. As the course was offered as an elective, it was likely to attract students who had been previously interested in the environment and environmental issues.

Table 2. Participants from school

S.No	NAME	GRADE	AGE	GENDER
1	Inaya Noori A.	8	12	F
2	Jeevika Harshine S.	8	12	F
3	Sree Hary Subramanian S. J.	8	12	M
4	Hari Narayan R	8	12	M
5	Harshita	8	12	F
6	Sreenidhi K	8	12	F
7	Shreecharan S	8	12	M
8	Ram meena Shanmathi	8	12	M
9	Sanjay Kathirvel	8	12	M
10	Abdul Haafiz K	8	12	M
11	Rubert Bernard V	7	11	M
12	Dharun Abisheik S. K.	7	11	M
13	Pravin Kumar	7	11	M
14	Arshiya H. S.	7	11	F
15	Suprathaa A.	7	11	F
16	Harshita P. S.	7	11	F
17	Lakshmi V	7	11	F
18	Kamali G	7	11	F
19	Jeevana Rose J	7	11	F
20	Fawwaz S.	7	11	M
21	Mohammed Ibrahim	6	10	M
22	Jonath Wesley	6	10	M
23	Sarvesh	6	10	M
24	Surya	6	10	M

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25	Vijay krishna T	6	10	M
26	Sowmya S	6	10	F
27	Vedha	6	10	F
28	Jeevanthara	6	10	F
29	Sheela shree	6	10	F
30	Maushmi Subrata	6	10	F

Research purpose: The aim of this study was to explore how engaging with media education could help children change their behavior to become pro-environmental thinkers. To generate data about the children's lives and their changing behavior towards conservation of nature; to explore the usefulness of the particular method as a tool to explore the knowledge children create from their understandings of the media education and how they could draw on this learning to enhance their own coping responses in a language they felt comfortable with; constantly explaining the purpose of the research and assuring them that their Artwork and Photography were not going to be assessed but would be used to learn about the results of this study which their views would be foregrounded. Before commencing with the research, we asked students to tell stories of their own related to Media and environment and interacted with them to make them, first of all, understand what is media education and what this could contribute to conserving nature. Thus we had to prepare them initially that they might understand the basics of media education and environmental issues and we were able to study the knowledge level of students regarding Media education and environmental issues. 15 documentary films based on priority to Indian and global ecological contexts and media education were selected participants for the participants to watch and reflect on (See Table1). And the students narrated their own stories of understanding media and environmental issues. Their stories and group activities were shared with the school psychologists regularly to judge behavior change enhancing factors. The number of documentary films that were used for this study was 15 (n .15), which were screened during the course time that was scheduled once a week, for 15–40 minutes, depending on the length of the films, some long ones were played in two parts and some were repeated for deeper understanding. In this second cycle of the study, they had to choose their favorites and engage in group-based activities. Some activities were action-oriented; for example, students were required to reflect on the documentary film they watched, and presentations were encouraged through the form of Artwork and Photography, and Artwork included drawing, mat painting (Pathamadai mat work is very famous in this region), and mime. We wanted the participants to supply Artwork or photographs as a stimulus for their thinking around how the content of the course associated with their lives as children living in environmental crisis. In terms of positive behavior change, we wanted to explore how this exercise might support children's positive coping responses. Data collections were done through using the draw-and-write technique (O` zden, 2009), drama (Podlozny, 2000),

focus group discussions (Greene & Hogan, 2005), and reflective diaries (Niewenhuis, 2010). We generated data for this text from our reflective diaries during which we captured our observations about moments that seemed significant within the info collection process. Since we had individual field notes, we compared our insights to return up with consensual themes from the info (Creswell, 2009). To ensure trustworthiness, we then discussed the themes that we had identified as individuals and used literature as the control for our findings. We ensured that the ethical issues involved in research with children were taken care of, the approval from the University ethical committee and the parental consent through the school were obtained to undertake the research. In this article, we respond to James (2007) critique by reflecting on our experiences of using Artwork and Photography as data generation methods during a project that aimed to explore how engaging with media education could help children to enhance their behavior change towards environmental conservation. Our research question is what could we learn from critically reflecting on our use of participatory visual methods with children utilizing documentary films? Rather than reporting the findings of the larger project, the focus of this article is to reflect on the process and the lessons learned when we used Artwork and Photography as data generation methods with children. This article can potentially contribute to the researchers on the utilization of participatory communication and use visual method tools with children, particularly, emphasizing challenges and contributing ideas to apply this method.

Understanding Participatory Communication and Visual Method tool

The advancement in children's agency is significant to us as researchers and we use visual methods for this reason (Greene & Hogan, 2005; Mannion, 2007). Children are considered to be capable of making sense of their views (Tay-Lim & Lim, 2013, p. 66). Data generation methods are key to successful scientific research, as they determine the standard of knowledge generated during the research process (Creswell, 2009). When trying to do research with children, literature cautions against methods that constrain the expression of feelings or make them feel daunted or pressurized (Literat, 2013).

Table 3. How Artwork and Photography were used in the study.

Strategies used to observe behavior change among the participants towards environment conservation	
Artwork/talk: In this activity, the children had engaged in creating any Artwork i.e. Drawing/Painting, mime/skit to exhibit their understanding of the documentaries and their feelings. They needed to describe what their artwork meant associating the documentary film they watched.	**Photography**: In this activity, the children had to use digital cameras to shoot photographs associating what they watched in the documentary films. And they had to write (or tell us) how their photography is related to environmental conservation or how it is related to them.
Prompt: You can choose the language in which you are comfortable both in writing and speaking. You need to express how you feel about your artwork Drawing/Painting, mime/skit, etc. what changes do you feel after watching the	**Prompt:** Click a picture with the camera provided to you, you could get the assistance of your teachers or senior students or from the research team. Tell us the meaning you make out your photo. You can also find a photograph from a magazine or

documentary and the Artwork based on the movie you were shown. How well you do your artwork is not very important.	newspaper that depict your feeling related to what you learned from the documentary and group activities and then write sentences or tell us in the language of your choice to explain your photography. Remember, how well you click photo is not important.

One of the advantages of those methods is that they allow children to possess a say in the production of data (Coad, 2007). Children should be considered as dynamic contributors in things that relate to their lives (Clacherty & Donald, 2007; Einarsdottir, Dockett, & Perry, 2009) and should be given space to express themselves (Tay-Lim & Lim, 2013, p. 66). Participatory visual methods allow ‘‘the voiceless an opportunity to inform their own stories’’ (Finley, 2008, p. 97) the way they need to experience themselves (Thomson, 2008). Children should be regarded as knowledge (McTavish, Streelasky, & Coles, 2012). According to Furukawa and Driessnack, children and their responses are very important to the research they contribute notably. However, Mannion (2007) tells us that this is often the exception instead of the rule out research, and for this reason, we chose data generation strategies that might promote opportunities for children to precise themselves, thus allowing their voices to be foregrounded in terms of the event of their own exploration on into media and environmental studies. Yet, the reliable involvement of children in research is not an easy task and hangs on how researchers facilitate the process (Waller & Bitou, 2011). It is often not the research in itself that empowers children, but the chance to debate the meaning of what they're doing with the researchers and other participants (Mannion, 2007). This involves the researcher to plan the research process judiciously, so that ‘‘children are given space to fully engage’’ (Gallacher & Gallagher, 2008, p. 502). In addition, power relations got to be carefully considered when doing research with children (Holt, 2004; Spyrou, 2011). Children may feel that they're obliged to interact in research and should not be bold enough to drop out of the study for fear of being reprimanded by adults (Morrow & Richards, 1996). It is therefore vital that the researchers make sure that they are doing not dominate the method. Many children are not used to adults asking for their views and are hesitant to share with people, whom they perceive as figures of authority (Einarsdottir et al., 2009). James (2007) also criticizes the overall lack of critical reflection on methods that promote children’s voices in research. Participatory visual methods, therefore, considered being suitable in doing research with children. We discuss in the next section the literature on the utilization of Artwork/Drawing and Photography as data generation techniques that are suitable when doing research with children.

Artwork and Photography as a method of Data Generation

A number of studies have used Drawings as a method of data gathering (De Lange, Olivier, Geldenhuys, & Mitchell, 2012; Guillemin, 2004; MacGregor, Currie, & Wetton, 1998; Mitchell et al., 2009; Wood, Theron & Mayaba, 2012) that underline the different

methodologies and purposes of using this scheme with adults, young people, and children. We chose the 'draw and write' technique adding Artwork and Photography to the exercises (MacGregor et al., 1998; Mitchell et al., 2011; O`zden, 2009; Wood, Theron & Mayaba, 2012). We allowed the children to talk about their Artwork and Photography since their writing skills were rather undeveloped. Mair and Kierans (2007, p. 122) explain this technique as follows: First, participants answer a search prompt with a drawing. Secondly, participants are asked to elaborate on their completed drawing through written or oral explanations to further describe and clarify the content meaning of the image for them. Other studies on the use of drawings with children disclosed how they could be used as a method to comprehend children's observation of literacy (Kendrick & McKay, 2004) and to study how children from countryside picture life (De Lange et al., 2012). The draw-and-write/talk technique isn't only a way of knowledge generation; it's an intervention in itself with cognitive and psychosocial benefits. For example, some studies document that drawings help with language development, as they serve as a guide or scaffold for learners' writing and thinking (O`zden, 2009). Drawing as a search method provides researchers with a window into the lived experiences of the youngsters and a way to know how they create meaning out of them; they also provide a strong intervention to interact children within the construction of other realities, which will have more life-enhancing outcomes. The process of doing the writing and describing the stories can be therapeutic and healing, but it can also produce negative feelings and thus the process has to be handled carefully and sensitively by the researcher (Mayaba, 2013). Table 3 shows how we used the strategy in this study.

The photograph has also proven to be an effective data generation strategy with children that generates the same kind of effect of Artwork/painting. Clicking photos with the available digital camera or collecting images from magazines or newspapers which consists of choosing and arranging ready-made pictures might be less intimidating than producing an original Artwork/drawing from scratch so we thought it would be good to use it as another source of data generation. As teacher educators, we are aware that pictures are among a broad range of visual texts that are used as equipment to permit insight into how people interpret the surrounding based on what they perceive in the visuals (Swain, 2010). Artwork and Photography thus seemed an appropriate way for the children to communicate their moods, feelings, and ideas (Edmiston, 2007) and their visual responses to the environmental issues in terms of how they associated with their lives. We also assumed that the children could be conversant in using texts like magazines and newspapers since they're common teaching aids then wouldn't see it as something new or intimidating. For example, pictures from magazines and newspapers are used to study children's attitudes on certain issues and as stimulates to teach students how to read certain words and grasp and recall certain information (Canning-Wilson, 1999).

The Research Design and the Theory

A behaviour change framework bolstered the main study in which we used the participatory

visual methods. The draw-and-write technique of O`zden, drama (Podlozny, 2000), focus group discussions (Greene & Hogan, 2005), and reflective diaries (Niewenhuis, 2010) were the tools of data gathering. In various sectors, behaviour change approaches and contexts became central to practice and policy, e.g. health, finance, transportation, and public utilities (Organization for Economic Co-operation and Development [OECD] 2017, World Bank 2015). Human behaviour is complex, relative, and context-dependent. The coordination of these stakeholders via social influence, stigmatization, education, outreach, and lobbying resulted in the development of the Weeks-McLean Law in 1913, which later transformed into the Migratory Bird Treaty Act of 1918 (Souder 2013). In this study, we used Artwork and Photography because they can positively influence how people view their current situations. Thus, they might be of potential benefit to children living in adverse environmental circumstances. In order to gain deeper insight into the reality of the children's lives, the risks they are faced and how they adjust positively, and most importantly how media education can enhance positive adjustment and play as stimuli for engaging with environmental conservation this study included the Draw and write or talk method too.

Lessons from using Artwork and Photography

The themes that emerged exposed our faulty assumptions about several aspects of the info generation methods: the importance of language issues when using visual methods with children, the necessity to require context into consideration when designing research protocols for these methods were realized. Scaffolding is vital When Using Visual Methods With Children. During the process of data collection, we observed that most children were hesitant to use Artwork or to click Photos with the camera. This was despite the fact that we had assured them that how well they use Artwork or to click Photos was not important. When we enquired informally from them why some indicated that they had never done such activity before in their classrooms. Participants in this study were not familiar with this method although there is proof that a draw-and-write technique has been used successfully in schools with children (Wetton & McWhirter, 1998), therefore it cannot be assumed that all learners are comfortable with use Artwork or photography and explaining them with insights learnt. So both the students and the researchers needed scaffolding. Scaffolding is described in Gibbons (2002, p. 10) as the ‘‘temporary assistance by which a teacher helps a learner know how to do something so that the learner will later be able to complete a similar task alone.’’ so as to scaffold the method, we had to form several adjustments to our research protocol. We had to explain the purpose of the study again and assure the children that their use of Artwork or photography was not to be assessed for marks as this might intimidate them (Punch, 2002).

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Figure 1. Clay model by Participants 22 & 24

Figure 2. Mat painting by Participant 11

When children finally made their Artwork or photography, we noted that many were not related to the topic selected, so we had to re-explain the task (see prompt in Table 3). For example, Participants 22 & 24 (see Figure 1 below) tried a clay artwork, which represented the characters in one of the documentary films on river Tamirabarani screened to them but they were not able to explain how this clay artwork made them feel change their behaviour and how it related to the environment. We had to probe deeply and ask them to first tell us what they understood from the film shown and what they meant to communicate through the clay model, on scaffolding they were able to express that the birds in a documentary showed attracted them and they were trying to give shape to the images they observed in that documentary on Tamirabarani wetlands. Through some questions posed to them they were able to explain what they had in mind we were able to discover the feelings and thoughts the documentary had evoked in them.

Figure 2: “Healthy Wetland” mat painting by participant 11. His oral explanation of the painting then was, “I like doing this work as I was inspired by the documentary Wetland ecosystem: Characteristics, Functions 2015 (See Table 1) on Ecology and Environment. This task helps me realize that as people we ought to care for nature”. This explanation provided us with rich data in relation to the social-ecological theory and the importance of developing protective resources (Ungar, 2011). Without this extra support with documentary films, we might not have had access to such rich data; it ensures the validity of our findings and therefore the success of the research. We discovered that although the works of children were simple, scaffolding their thinking by asking simple questions helped us understand how they derived the messages and how media education was helpful to them to relate environmental issues to their lives. We also learnt that the data gathering cannot be rushed; it needs time and we have to be able to spend time with each participant rather than just give a blanket instruction and assume that they understand.

We also discovered that age might be a significant variable, in terms of having the ability to follow the prompt. For example, Participant 11 (11 years old) made a mat painting (see Figure 2) and was able to clearly articulate how the documentary he watched helped to perceive a wetland set up. He was able to give a much more detailed visual and tagline to explain. This information helped us answer our research question, as we were ready to

identify from the child's narrative a sign of positive behavior change and resources he could relate to in his favorite mat painting. Children's stage of cognitive growth was evident between participants 22,24 and 11 in the way they understood and interpreted the prompts. In teaching, the method of scaffolding is well known as teachers provide guidance for learning to require place. We learned in research, the same process needs to be considered and extra time has to be built into work with younger participants.

Some children also opted not to give written explanations to their Artwork and photographs. When we first asked them if they were willing to tell us about their Artwork and photographs many of them were hesitant and doubtful. Since we did not want to send a message that they could not write, we decided to ask everybody a few questions in relation to their Artwork and Photographs. This is important because as researchers our goal is not to embarrass the children and to find fault with their work but to encourage them to be co-constructors of knowledge in research. We were aware that we ought to be sensitive to the emotions of every child. This approach appeared to work because the children who were initially hesitant to inform us clearly felt comfortable when everybody had to mention something about their work. What seemed to help the most was that participants already had Artwork and Photographs that served as a stimulus for their thinking and explanation. As indicated earlier, we applied the same technique as we did with Participants 22 & 24.

Photography: Another choice of activity

Another activity that children had to click a photo with a digital camera or to collect images from magazines or newspapers, which depicted their understanding and feeling or how those images made them feel, and the way, they associated with their lives was their choice. We thought that collecting images or cutting pictures from magazines and newspapers would be hard task for the children because they had to just handpick those they desired to use. Initially, we gave this task to children as homework, since it had been before the vacations when the schools reopened; we discovered that only a few had done the task. Children shared that they did not have magazines or newspapers at home; therefore, we learnt that they did not even attempt the task. We thus had to supply them with both digital cameras with the assistance of teachers and magazines and newspapers, although, initially we did not want to, as it might influence their mind to choose from what we provided. We soon realized that the magazines we finally had to bring were very limited in terms of what the participants might have been interested in. Yet, we had no other means of overcoming this, as they didn't seem to possess any magazines. After they had access to digital cameras and gadgets they needed, we noted that they were able to use them properly as media education sessions covered understanding media and photography. Some were simply cutting pictures or clicking photos but not able to relate to what they learned through documentaries or group activities. Again, we realized that our beliefs about their acquaintance with such pedagogical strategies were incorrect. It was clear that they didn't have much opportunity to precise themselves creatively in school, since the teachers mostly just used the

‘‘talk and chalk’’ approach of direct instruction. Again we had to model what we expected them to try to do. We placed the magazines and newspapers on each group table and that we explained the prompt again by clarifying their questions to the prompt found in Table 3. That sorted the research gap.

Then, we revived classes on photography and gave practical works to shoot as an example of what it could look like based on one of the stories that the children engaged with during the research process.

Figure 3. Trust first with nature

Figure 4. Photograph by Participant 6

We showed the children how they can create narratives through photographs (see Figure 3). Our explanation of Photography is ‘‘When we listen to the story of nature, we realize how important it is that one can at least have someone to trust in life. It makes us recognize that people who love us can help us when we need help.’’ When the children then attempted the task again (see Figure 4), they were able to make visuals with their own narratives that provided us with sufficient data. We observed their association with nature and creatures growing closer. Participant 6 explained her work as follows, “I have learned that caring for the earth and God’s animals are the first thing today. I like what is happening today, people caring for important things such as nature, animals, people, and plants/flowers”. When asked to further elaborate on her photograph, (See Figure 4) she said that the story that she chose with this photograph was inspired by the documentary film shown to her namely Ungalukku Theriyuma? (Tamil Animation Film) 2016 (See Table 1) related to EIA (Environment Impact Assessment) and caring for one another and therefore she believed that it was important that we all needed to care for even small worms. Ungar (2008) notes that children and youth can learn from their experiences and failures and develop self-efficacy which is a private belief that he can perform a task successfully’’ (Bong & Skaalvik, 2003, p.6). Hence it's important that researchers scaffold the research process by checking with

each participant and taking note of all of them. We also learned that it was important to be sensitive about the emotional reactions that the exercise could elicit in children. For instance, Participant 3, during the discussion based on his photo collection, said ‘‘when I was cutting the pictures, I cut a picture of a person—when I looked at that picture, I assumed about my mom.’’ As researchers, we were careful to follow-up on the participants because the activities might invoke negative feelings that would be harmful if left unattended. Our experiences ratify the finding that such innovative methods are not easy to engage with children (Backett-Milburn & Mckie, 1999).

The Impact of Language on the Quality of Data

Heary and Hennesy (2002, p. 48) note that in focused group discussions, children are often likely to supply responses that are provided by an earlier speaker. However, using methods like Artwork and photography afford children a chance to elucidate their images both orally and verbally and independently from others (MacGregor et al., 1998; Kenrick & McKay, 2004; Guillemin, 2004). However, we noted that the data generation methods were more successful when we allowed them to use Tamil, their mother tongue, in spite of the fact that in their school English was the language of learning and teaching. Using the English language only for dialogue and interaction during the study wouldn't have facilitated the assembly of rich data. As some Children made repeated requests to explain the prompts we translated all our instructions into children’s native language sensing their need to understand the prompts. Bothe authors being familiar with the native language were able to use maternal language so as to form the message much clearer. This suggests that generally, researchers got to be ready to use the language of the participants because the Artwork and photography could be unfamiliar methods in some contexts. We noticed that the older children chose to write and speak in English, and it was evident that they were very fluent in English, in both their writing and speaking skills. Those who chose to use their home language to elucidate what their visuals meant also were encouraged. This emphasizes the importance of having the ability to speak in children’s home languages when doing participatory research with them. In order to affect translation challenges from Tamil to English, we first verified with the participants the meanings of their Artwork and photography articulations then the first author was able to translate them into English.

The Contextual Experience and its Importance in the study

Data collection in an atmosphere totally new to the school setting for such learning taught us the importance of working closely with the teacher for better understanding of both the school children and the contextual difficulties during our research. We realized that clear information to the teacher was a basic need understand the responses of the children. The visual method technique is usually time consuming and we needed to plan our sessions without disturbing the regular rhythm of children’s other routine in the school particularly with their transport schedules. The school had some times change of timetable and we had

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to adjust and rethink to plan our sessions of data collection. The teacher was not involved direct to the research but he was helpful to forward our communication to all the participants in case we were not able to make to come or delayed. At the same time we had to also inform him about the choice and rights that the participants had either to participate or to drop from it. But invariably all of them were active and enthusiastic. The teacher shared that the participants who were part of this research showed sign of confidence and positive behavior change towards conserving nature after they engaged themselves in this project. His comment indicated the positive influence of our visual methods. On the one hand, we realized that we were contributing to the learners' positive behaviour change to conserve nature, whereas, on the other hand, we had to accept that children had the freedom to withdraw. We had long discussions with the teacher about this to prevent him from telling the children to attend the class as a compulsion.

Signs of Positive behavior change let the Participants to Action

MINIATURE WETLAND POND IN SCHOOL VENUE

Figure 5. Wetland Miniature model at School venue

Figure 6. Interschool competition on Environment

Participants with all knowledge gained from some of the documentary films on Tamirabarani wetlands and bio-diversity were able to create themselves within their school venue a miniature wetland pond (Figure 5) showcasing the biodiversity of Tamirabarani wetland within their school venue.

Figure 7. Humidity level checked by student

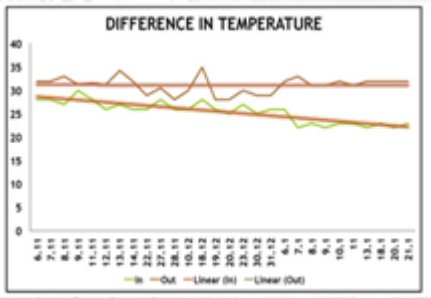

Figure 8. Difference in water temperature in River Tamirabarani done by student No.12

They also have learned to make humidity and water temperature check on their own (See Fig 7 & 8) and able to do it in their own school pond and in River Tamirabarani to analyze the pollution level. They were able to create concepts for art form (See Figure 6) to convey what they received at school in a form of mime and were able to deliver a stunning onstage performance on conserving environment during the Tamirabarani Birds festival conducted by ATree research and Biodiversity conservation Centre. And they won first place among 20 different schools in nature art form competitions. The participants maintain the miniature pond in their school campus, observe the plants, flora, and fauna regularly, and spread this knowledge to other students to conserve nature. Thus repeatedly exposing school children's to environmental-related-documentaries and discussions using Participatory Visual Methods resulted in positive behavior change among the participants and lead to action to conserve the environment.

Conclusion

By utilizing media education for positive behavior change using documentary films as course material and Artwork and Photography as data generation methods, we realized it was not easy to do in practice. Although we found that using media education combined with Artwork and Photography can produce rich data as well as prove to be beneficial for participants it was a herculean task to apply this among school children. We also found that using these methods with children required researchers to be able to scaffold the interventions according to the ability of the children so that we could get the objective result. The media education can, indeed, shape the view of the general population about environmental change issues and urge people to design strategy from their administration to address the issue. We believe that the lessons that we learnt when using media education for positive behavior change to conserve the environment by combining documentary films with participatory visual method data generating strategies could benefit other researchers who use similar methods with children.

Declaration of Ethical Issues Involved in Research with Children

We ensured that the ethical issues involved in research with children were taken care of, the approval from the University ethical committee and the parental consent through the school were obtained to undertake this research.

Declaration of Conflicting Interests

Both the authors declared no conflicts of interest with respect to the research, authorship, and/or publication of this article.

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