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Educational Technology as a Positioning Tool in Rural Bangladesh

Taslima Ivy

¹ PhD student, Manchester Institute of Education, University of Manchester, Manchester, UK
Taslima.ivy@postgrad.manchester.ac.uk

Abstract. In this paper, I argue that educational technology can become a symbolic tool for teachers' social positioning as much as a pedagogical tool for the classroom. Drawing on Holland et al.'s (1998) concepts of cultural artefact, semiotic mediation, and positional identity, I explore the experiences of PowerPoint use of one rural teacher in Bangladesh. Through her story, I shed light on the processes through which PowerPoint was becoming a positioning tool and how, at the same time, a shift in her positional identity was emerging.

Keywords: Educational Technology, Positioning, Figured Worlds.

1 Introduction

The discussion in educational technology centres predominantly around how practical, pedagogical, psychological, or even philosophical factors shape or underpin teachers' use of technology in the classroom [25, p.89]. The focuses in these areas have forwarded our understandings in practical ways and therefore, will continue to be of central importance in the field. However, it has been argued that most of these studies do not take appropriate account of the 'wider social relations' or competing voices shaping technology use in education [22, 24]. There have been calls to study teachers' use of technology as situated within a wider context and from a sociological point of view [26, 27].

In line with Selwyn's [25, 26, 27] call for more sociological studies in educational technology, an emergent line of research has shown that educational technology develops not strictly based on material properties but is shaped by social, cultural and political structures as well [4, 20, 21 26, 27]. In most research in educational technology, the sociocultural structures and social relations have been found to be resilient or non-developing. Educational Technology has been claimed to be shaped to the context- either reinforcing existing practices, relationships, and structures or being rejected altogether [2, 25,18]. At the same time, educational technology use has been shown to shape the context, not particularly by changing the structures, cultures and social relations but by producing or exacerbating existing power relations, social control, and inequality [3, 8, 17]. The day to day on ground experiences and social processes which contribute to such shaping is still relatively unexplored.

At the micro level educational technology has been shown to be shaped by teachers' identity trajectories, past experiences and digital dispositions [6, 13, 22-30]. How technologies might shape teacher identities has received less attention. The possibility of whether and how technology might produce a new technological identity for teachers is still unexplored.

This paper draws on Holland et al.'s theory [14] to study the day to day social processes through which educational technology and the social were shaping each other. It additionally sheds light on how, at the same time, a positional identity was emerging through these social processes.

2 Context:

The government of Bangladesh aimed for 'digital' reform in primary and secondary classrooms by initiating a project titled 'multimedia classroom and 'teacher-led digital content development programme' in 2010. The project was overseen by a division of the Prime Minister's office titled a2i (Access to information). The project aimed to bring about changes through technology to the traditional educational culture characterised by "one-way transfer of information from teacher to student" and 'limited opportunities of classroom interaction' [31]. a2i believes that multimedia technology by visualising 'hard to grasp concepts' could be an agent in promoting more participation, interaction, enjoyment and interest in classrooms and thus promote a culture of student-centred pedagogy [1]. The choice of software to train teachers on visualisation and consequently to use in classrooms was the PowerPoint. This choice firstly was based on cost. Within the budget a2i had, it was not possible to set up fully-fledged computer labs, but it was possible to set up a multimedia classroom consisting of one laptop and one projector in every school.

a2i also aimed to connect all 900000 primary and secondary teachers across the country through an online portal called shikhhok batayon. The teachers are expected to contribute and collaborate in shikhhok batayon, which acts as a platform for peer collaboration and a repository for digital content [1]. Through these initiatives, a2i aimed to create and promote a new vision of being a teacher, with a new label 'multimedia teacher'. To generate motivation among teachers to become a 'multimedia teacher', the government implemented a 'gamification' strategy which included recognition by featuring a 'best multimedia teacher' every week on the portal for quality digital content, rewarding best multimedia teachers through promotions, national awards and leadership positions. At first, a2i implemented the multimedia learning project in an attempt to enable urban teachers to help rural teachers. However, very quickly, it turned out to be the rural teachers who began to show the most enthusiasm in contributing to the portal and becoming 'multimedia' teachers. According to a2i, 90 percent of the PowerPoints on the portal were created by multimedia teachers [1]. This intrigued me, and through my PhD I aimed to explore how and why educational technology use was emerging the way it was in rural Bangladesh.

3 Methods

3.1 Data Collection

This paper presents part of my findings from my PhD study. For data collection, I used multimodal artefact production and Golpo/adda (Bengali genre of informal discussion) as primary methods. Multimodal artefact production in this research was a method where participants captured their experiences of technology use in a mode/medium of their choice. The advantage of using participant-generated data lies in the fact that aspects of identity and experiences can be observed and learned about which might never have been imagined by the researcher [19, p.33]. Moreover, multimodal artefact production creates a space for participants in research and might help participants to express their realities in their way.

In this paper, I focus on the story of one of the participants in my PhD research, Aparajita (Pseudonym chosen by the participant). When I started my PhD, I had contacted a2i for permission to conduct research with rural multimedia teachers. The programme director arranged for the research to take place in rural Hatia. During an initial 15-day fieldwork on the island, I discussed the concept of informed consent with teachers and discussed the participant information sheets. A total of 6 teachers agreed to participate in my PhD research. I requested participants to send me artefacts every two weeks in response to two prompts: what does multimedia mean to you? And what are your significant experiences of the week? The artefact production period continued from October 2017 to May, 2018. Aparajita had sent in different combinations of artefacts each two weeks. At the end of the data collection period Aparajita's artefacts included 6 audio clips, 3 video clips, 28 diary entries, 54 images with captions, 5 links, 19 screenshots, 3 poems and 8 PowerPoints.

Besides multimodal artefact production, I conducted two golpo sessions with Aparajita. A golpo is a distinctive Bengali form of discussion which communicates equal relations, friendliness and emotional connection. I used this contextually meaningful way to engage with Aparajita instead of interviews to communicate at a deeper level and position myself more as an equal. The first golpo session was face to face (50 minutes) to know about her story of becoming a multimedia teacher, to understand how she developed over time since 2012, future intentions, feelings and opinions as well as build rapport. At the end of data production, we engaged in a second golpo session (45 minutes) in which we discussed in-depth the themes that I constructed from the data. For instance, with regard to positioning we discussed if, how and why this feeling of position had developed from 2012 and her current views on this aspect.

The goal of this qualitative study is to provide a rich, contextualized understanding of how the meaning of educational technology was emerging through analysing Aparajita's experiences over time. Aparajita's story of positioning via educational technology is representative of all 6 participants who took part in my PhD research. However, how generalisable this finding is of other multimedia teachers in context remains subject to further research.

3.2 Analysis

I did a thematic analysis of Aparajita's artefacts and interviews to understand how technology and social were influencing each other and how technology related identity was emerging. I followed the steps from Braun and Clarke [5] for thematic analysis. The first step was reading and re-reading the data to allow underlying meanings and concepts to evolve before coding. I also transcribed the data in this phase. I transcribed in Bengali to keep the meaning intact and avoid losing connotations in the process of translation. In the second step, I coded the data (in Bengali) inductively with a focus on how technology and the social were interacting with each other and how identities were emerging. In the third step, I deductively coded the data in light of Holland et al.'s [14] theory, particularly drawing on their conceptualisation of cultural artefact, positioning and identity. The final step involved sorting and combining codes into potential themes. I also tried to understand the relationships between different themes and subthemes. The story of Aparajita that I constructed below is a result of the interaction between my structured prompts, golpo sessions, Aparajita's artefacts and my interpretation of these based on Holland et al.'s [4] theory.

4 Conceptual Framework: Figured worlds

Holland et al. [14] illuminate the continuous, iterative, connected and bi-directional development process of the cultural artefact, identity and lived worlds that happen through participation in everyday and local activities rather than approaching the artefact, the person and the lived worlds as final, finished products. Holland et al. [14] argue for examining the heuristic development of the artefact over time to understand better how artefacts, people and lived worlds become what they are. Holland and Valsiner [15, p.254] cite the example of a study on the use of Marijuana which showed how novice smokers not only learned techniques for ingesting the drugs from others but more significantly, learned the meaning and purpose of ingesting Marijuana from others over time. The 'smoker's high' sensation that expert smokers felt were not felt initially by the novice smokers, they were 'trained and encouraged' by other expert smokers to do so. In other words, motivation, meaning and purpose for using the drug was socially shaped over time rather than being a result only of the artefact's (cigarette's) physical effects.

Following Vygotsky, Holland et al. [14, p. 225] argue that cultural artefacts are 'not only part of the context but are part of the content of 'inner life' in a modified way.' People encounter and learn cultural artefacts socially, through interaction with others. Over time these become symbols to be incorporated in the mental processes. When the individual takes these artefacts to be 'meaningful for herself' they become potential mediating devices for 'organising knowledge. By 'making meaningful', Holland et al. [14, P.6] mean using it for one's purpose, i.e. using the artefact for guiding problem-solving, shaping feelings, remembering goals, reminding oneself about their identities, in short to effect, guide and evaluate own actions and thoughts. For example, the cigarette over time became a symbol of pleasure and could be used to control one's mood. While individuals use the devices to manage their behaviour,

the device itself starts to evoke related thoughts and emotions and thus influences the person. While the artefact is social in that it originates in the social world, it then becomes equally individual as it starts to constitute the thought, emotion and behaviour of the person by whom it is being reproduced [14, p.225]. In this way, cultural artefacts can act as a mediational link between culture and cognition. [23, p. 193]. This is called semiotic mediation.

Through semiotic mediation, people might develop identities related to cultural artefacts. Identification is the shift that occurs when people appropriate the cultural artefacts to guide actions and emotions [9, p. 251]. For instance, Deirdre et al. [9, p.251] cite the example of how the cultural artefact white coat was internalised by doctors through semiotic mediation to develop self-understanding and motivation. Putting on the white coat made students feel like a doctor which in turn allowed 'self-direction' to act like a doctor. Holland et al. [14] discuss two aspects of such identities, i.e figured identities and positional identities. For this paper, I will discuss the concept of positioning and positional identity. According to Deirdre et al. [9, p. 251], positional identity refers to:

A person's apprehension of their social position in the lived world. We claim position and we position others every day through social interaction...positional identity is about inclusion and exclusion, entitlement, silencing, distance and affiliation.

As novices enter a Figured World they gain a sense of their position within it,....

Day to day positioning in cultural worlds is therefore another mediator of identity.

Positional identity develops through positioning acts which are acts indicating power, status privilege, distance affiliation, entitlement and how these are negotiated. It is about how experiences of inclusion, exclusion, recognition, humiliation shape our sense of position and how we view ourselves [9, p.251].

Holland and Lave [16, p.8] also highlight the importance of paying attention to the inner struggles in the process of mediation. Other social voices might be in conflict with the use of the artefact as a symbolic tool. Close attention to participants' inner debates might highlight these social tensions. For instance, a group of environmentalists interviewed by Holland and Lave [16, p.8] were found to be developing in relation to the artefact of waste. At the beginning they had little knowledge about their waste production. By participating in the group over time they learned ways of weighing and producing less waste. They met weekly and discussed how they felt bad about high amounts of waste produced by Americans. In this way they developed new meanings and 'emotional evaluations' regarding the waste produced by themselves and others. They were forming as environmentalists in local practice through semiotic mediation of the cultural artefact of 'waste.' However, they were also found to be struggling over whether they were too extreme. The activists sometimes fell back on terms such as 'granola head' or 'treehugger' that were used by their parents and friends to communicate disdain. This sheds light on the broader social tensions around environmental activism in America.

5 Findings

5.1 PowerPoint as a Tool for Social Validation

Aparajita was one of the earliest adopters of multimedia technology in the island of Hatia. Despite infrastructural challenges such as only a couple of hours of electricity per day, Aparajita was a regular user of technology and had received quite a few awards for her contributions as a multimedia teacher. In our first golpo session Aparajita started her story with how she became a primary teacher:

“I wanted to become a teacher but never a primary school teacher. I always wanted to be a college teacher. I had a dream to be a college teacher...My father died and I could not go for higher studies outside the island. Because, you know, I am the eldest daughter of the family, all responsibilities fell on me. I graduated from a local degree college here. Then because of family pressure I appeared in an interview for the primary teacher post. I got the job”

This quote exemplifies her previous sense of position in the social hierarchy. The primary teacher position is usually considered the lowest in the hierarchy of teachers in Bangladesh. In the following sections, I will provide examples from my data regarding how, through social interactions, PowerPoint use was becoming a symbol of social position. I will also describe how technology use seemed to be shaping social relations (from Aparajita’s point of view) and shifting Aparajita’s sense of position.

Social Appreciation:

One of the ways Aparajita experienced a different positioning than before was through social validation. In most of Aparajita’s audio clips and a few places in the golpo, she talked about how PowerPoint use led to different forms of social validation from different social groups. She received higher appreciation from students, colleagues, and higher-level officials. A typical example of how students were positioning Aparajita as more appreciated than before was as follows:

“When I do a multimedia class, I cannot keep other classes out of the multimedia room. The whole school gathers in my class. Everyone keeps saying, “Do it for us, we want to see this too! Oh, the happiness that I see in them after the multimedia class! After doing a multimedia class what happens is, they do not want to do a ‘normal’ class” (golpo, October 2017)

In context, the relation between teachers and students is usually that of power and deference. PowerPoint mediated classrooms brought in “fun and enjoyment through animations, videos, and songs” (golpo, October 2017). Technology use seemed to add a new dimension to the student-teacher relation, that of appreciation and interest. Not only students, Aparajita’s diary entries regularly mentioned experiences of being appreciated by teachers across the country in the portal. For instance, diary entry, 13th December 2017: “Other teachers’ appreciative comments are giving me the inspiration to work even more” Or “It is because the unity within us and inspirations from my colleagues that I have come so far (diary entry, 20th March 2018). Whereas previously colleagues rarely commented on each other’s work, a different relation seemed to be developing based on appreciation and inspiration. She also mentioned a few

times how she received attention and appreciation from higher officials whom she expected never to notice a 'primary teacher' and 'villager' like her:

"In the digital mela we were supposed to present our PowerPoints. The programme director was concerned about me- "she has come from Hatia, can she do it?" Another official said let's give her a chance. In my PowerPoint, there was a poem connected to the topic to create emotions in children. Sir called me after the presentation- where did you get the poem from, was it from google? I said no sir, I wrote it myself. He was astonished, he called everyone and started to say, listen she wrote this herself. He was so happy- he started to say this is the kind of teacher we need- we need creative people like you, from then on, he has always inspired me to go forward. It is precisely this valuing and this recognition- this valuation is the reason I want to work more and more" (2nd golpo, May 2018)

Aparajita narrated many similar experiences which demonstrated instances of possible changing relations: from deference to recognition. She was being positioned and defined based on her capabilities. She was becoming someone to be appreciated instead of her identity as a villager or primary school teacher. Use of PowerPoint in this way seemed to mediated ground relations with higher-level officials, colleagues and students in the educational system.

Inclusion and Exclusion:

Another way Aparajita's sense of social position might have been developing was through experiences of access to specific spaces related to technology use. According to Holland et al. [14, p.134], spaces can act as vehicles of positioning by including/excluding people or signifying greater and lesser access. Holland et al. [14, p.134] term this inclusionary/exclusionary work which is 'simply done by including or excluding certain people from sites.'

Quite a few of the images Aparajita sent me as significant experience showed her along with other multimedia teachers attending government organised educational fairs like shikkha upkoron mela (educational artefact fair), unnoyon mela (development fair), specialised training, workshops, special conferences, and retreats. These were arranged by the government to showcase educational and developmental achievements in local communities. Aparajita, along with other multimedia teachers, were the ones chosen to represent education in these spaces. Primary teachers not interested in technology use had no access to these.

Not only spaces but also various awards, and leadership positions created by the government for multimedia teachers might have also been acting as an inclusion/exclusion device. Aparajita received the best teacher award in 2013. She received the award for teachers' portal popularization in 2017. These gave Aparajita a sense of honour and recognition. One of the typical examples of this was when, she recounted her feeling in the following way after receiving the award for teachers' portal popularization: "I am overwhelmed with this respect, this achievement. My heart is like a kaleidoscope sky with a thousand colours of happiness" (5th December 2017). Teachers not interested in using technology did not have an alternative recognition system for valuing their work. Multimedia teachers hence had a kind of privileged access, consequently producing additional value compared to other school teachers.

Stories of Mouth:

The recognition and acknowledgement seemed to produce a ripple effect in Aparajita's island and the teacher community through stories of mouth. All of the participants, local government officials, her family members, her headteacher whom I met during my fieldwork mentioned Aparajita as a person of respect. In my research, all of the participants mentioned a few times, how Aparajita was a person of respect and inspiration in the community. For instance, one of the participants, Henna commented on how trainers were always mentioning Aparajita to them, "She was very famous, her name was on everyone's mouth, like a woman from Hatia island has done such a great job, so creative. This kind of turned into an inspiration for me." Another participant Jeba commented on how Aparajita was a renowned name in the teachers' community: "When the multimedia classes first started, I first heard that our Aparajita had received training on this and she has achieved fame across the country." In this way, experiences of appreciation, inclusion/exclusion and recognition seemed to be giving rise to modified relations and new positioning experiences for Aparajita.

5.2 Internalising the PowerPoint as a Positioning Tool

Through these positioning experiences over time, recognition and appreciation seemed to become one of the preferred purposes of PowerPoint use. Aparajita equated being a multimedia teacher more with special awards, recognitions and privileged access than use in the classroom. For instance, in response to the prompt significant experiences of being a multimedia teacher, she sent a video titled 'my most memorable moments'. The video featured her experiences of being appreciated and recognised through various awards, workshops, and training. There was no mention of pedagogical use in the classroom.

The following quote also shows how she perceived the PowerPoint as a tool for achieving social appreciation. When I asked how she used to develop her PowerPoints, she replied:

"I felt as if I was in a kind of trans, I was mesmerized. I always used to think, I am doing something in one way in the slides-but how can I make it better? There was a thirst for more and more appreciation- there was a yearning for more good comments from everyone. I wanted everyone to appreciate my work. This thirst of appreciation, of recognition, kept me working without stopping"

I found more examples like this throughout her diary entries and audio clips. For instance, "I have uploaded content in batayon today. Teachers' encouraging comments will generate more inspiration for me to work" (audio clip, 15th February 2018). Identification happens when people appropriate a cultural artefact to guide emotions and actions. We can see that Aparajita had appropriated the socially developed meaning (of validation) to guide her actions and emotions (achieve validation) regarding the PowerPoint. Whereas previously she felt undervalued as a teacher now she had developed a sense of valued position: "I am being able to work even within such a busy life only because I am being recognised and valued (diary entry 18th October 2017). Uploading the PowerPoints seemed to help her enter a new world, experience a new social positioning and become a new 'I'. This sense of becoming a different 'I' can

also be seen in her comments: “I can’t even imagine. I started working with multimedia without understanding anything. Now look where I have arrived! I can’t imagine... I am uploading content, downloading content, making members on batayon.” In other words, Aparajita seemed to have developed a new positional identity in relation to technology use.

5.3 Conflicts and Tensions:

However, using PowerPoint was not only a source of social validation and new relations but also a source of social conflict. Aparajita, in the first golpo session mentioned how she was limited in her scope due to being an assistant teacher:

“My headteacher doesn’t see value in technology. If I ever become a headteacher I have a dream to change my whole school, all of the classes into multimedia classrooms. This is one of my dreams...because assistant teachers like me have a lot of limitations. They can’t do a lot of things even if they wish. That’s why as an assistant I can’t do a lot of things. But maybe if I become a headteacher, maybe 10 years from now, I have a dream to make my school a model multimedia school”

The quote illustrates different experiences of positioning in her world as a multimedia teacher. She cannot use the PowerPoint all the time as the headteacher sees it as ‘detrimental to education’. Due to the existing social structure and hierarchy, she silenced herself rather than protesting and expressing her belief in technology use. Thus, the hierarchy was reproduced within the boundaries of the school. However, she showed some resistance to this positioning by imagining her future practice where she, as a headteacher will use multimedia as extensively as she wants. She also showed resistance by continuing to produce PowerPoints in the e-portal.

Another tension was emerging with non-ICT using teachers. Aparajita mentioned how the non-ICT ‘group’ were spreading rumours about multimedia classrooms:

“I think the reason for this is professional jealousy. They are trying to spread that multimedia is harming the education of children. They are only highlighting any possible disadvantages. They are not talking about the advantages. Guardians misunderstand us multimedia teachers. The headteacher is not very positive after this” (Diary entry, November 2017)

Here she is positioned as detrimental to education and resists this positioning by arguing how this is not the case. She is giving more weight to technology. In another place, Aparajita showed resistance by positioning herself as separate from non-ICT using teachers and casting them as ‘ancient’:

“I have two types of colleagues. Ancient (traditional) and progressive. When I started to work, then a number of these people, who had aged a bit, close to retirement, they used to disturb me. They used to say no, what are these? Why are you doing these? We don’t need these. These destroy classes, harm children. They had influenced the headteacher a lot. Younger teachers did not create problems for us.”

This quote also serves to exemplify the conflict with the cultural notion of good education. Technology use clashed with the existing definition of a good teacher and education based on teaching the textbook and teaching to the examination. The restricted definition of good education constructed multimedia teachers as detrimental

and positioned them as harmful in context. Aparajita drew attention to the problem of introducing anything new let alone technology, “No one wants to accept anything new, they just say, eh! What is this? Why do we need this?”

6 Discussion and Conclusions

The examples from my data above show how the PowerPoint was being used for social purposes, i.e. negotiation and renegotiation of positioning. Previous research has concentrated predominantly on the ‘product’ or outcomes of the social shaping of educational technology (as discussed in the introduction). The brief account above shows some examples of the ‘processes’ through which educational technologies might emerge. Through day to day processes of appreciation, recognition, exclusion/inclusion, stories of mouth, distancing and imagining, technology use was emerging as a social tool in teachers’ world.

Material practices of creating and using the PowerPoint became intertwined with Aparajita’s subjective understanding of who she was through a process of semiotic mediation. The government had created the subject position of a multimedia teacher along with possibilities of rewards. However, material practices like making and using the PowerPoint led to day to day social experiences of respect, appreciation, recognition in the community. Over time, Aparajita attached these emotional meanings to the PowerPoint and started using the PowerPoint for achieving these purposes. The experiences also created a shift in Aparajita’s sense of position. Therefore, the change Aparajita underwent was much more than a change in behaviour; it was a change in positional identity. Moreover, Aparajita’s previous understanding of herself as an undervalued primary teacher and villager might also have been a reason why she experienced use of the PowerPoint as social validation. Other teachers who do not feel undervalued might not develop the same emotions and consequently, a positional sense of self in relation to the PowerPoint. The results of this research also imply like Selwyn [29] that engagement with technology can create a sense of separation between technology and non-technology users. The superordination of the multimedia teacher and subordination of other teachers went on through positioning processes. It was a medium through which multimedia teachers could conceptualise themselves as validated and respected. Technology itself did not exclude any group of teachers; it was the validation, recognition, spaces and circulating stories that acted as a vehicle for such inclusion and exclusion. This understanding adds to the gap in educational technology research by shedding light on how educational technology becomes part of conceptualizing the self [12].

By adopting a developmental view of both individual and social, in contrast to previous studies, I have shown how social-relational changes might have started to emerge in incremental steps. Relations with students, colleagues and higher-level officials were being perceived as of a changed nature by Aparajita. Technology implementation also led to reproducing the hierarchical relationships among the assistant teachers and headteacher within school boundaries. Aparajita did not accept the position offered by the headteacher but showed resistance through activities like continu-

ing to make PowerPoints for the portal. Also, by imagining a future world where she would be able to use technology according to her wishes. This points towards the importance of alternative material and imaginary spaces for resisting contradictions and developing agency. Besides being a matter of power dynamics or hierarchy, social resistance to technology in schools was reflective of tension with larger structures like the pedagogical culture. For years the education system in Bangladesh was textbook-based and examination driven. Any departure from the textbook or any content not related to the examination was perceived as detrimental. In this way, clashes with wider structures like hierarchy and pedagogy were playing out in local conflicts through processes of positioning, discursive resistance like imagining, distancing and material resistance like practicing in alternative spaces. From the realm of material practice, PowerPoint use entered the realm of subjective and social practice to form, signal, and maintain position. This paper aimed to present one teacher's perceptions and experiences of educational technology in depth. Future research could aim to understand the points of view of all other relevant social groups, i.e. students, higher officials, headteachers, non-technology using teachers and more multimedia teachers to understand further how educational technology might have emerged as a positioning tool in rural Bangladesh.

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