Collective Biography as a research method to examine inclusion of 'low-attaining' learners in mathematics classrooms in India

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Collective Biography has been used by feminist researchers as a method to explore their own positionings vis-à-vis a topic of common academic interest. In this work-in-progress paper, I argue that when used as a method in the field of mathematics education, it has the potential to mitigate power imbalances, trigger reflexivity, and develop researcher-teacher collective agency. I make my case using the context of my doctoral research project, which will examine teacher discourses around the notions of 'ability', 'educability', and 'inclusion', and explore possibilities for change, in collaboration with teacher-participants. I justify why and how I plan to use collective biographical workshops in my research, set in the context of mathematics education in India.

Keywords: collective biography; collective agency; feminist-poststructuralism; inclusion

Context and motivation

Testing and performance-driven discourses of 'inclusion' in education have come to dominate policy and media discourses globally (Owens and de St Croix, 2020). In India, recent education policies have scrapped the 'No Detention Policy' (reintroducing 'failing') for elementary school students (Government of India, 2019), and introduced more high stakes testing (NEP, 2020) – all in the name of 'inclusion' of traditionally underserved students. Such notions of 'inclusion' are rooted in deficit perspectives, and intrinsically biased against learners who struggle with test achievement. While attainment-based discrimination can happen through every school subject, it is perhaps the most intense in mathematics, because of its gatekeeper status (Gutiérrez, 2013; Valero, 2018). Mathematics education research has shown that learners labelled as 'low-attaining' early on in life often go on to make this a self-fulfilling prophecy (Francis et al. 2020). In India, such learners might face not just epistemic or attitudinal violence from their teachers, higher-attaining peers and parents, but in many cases, even physical violence (Portella and Pells, 2015). This is a social injustice that needs to be addressed. In this article, I argue how Collective Biography can be used as a research method to develop researcher-practitioner collective agency to rethink and challenge these injustices.

Research in mathematics education shows that often teachers believe that they have only two alternatives to teach 'low-attainers'- to withdraw them "for small group interventions with less challenging mathematics or to include them in whole class lessons which they could not understand" (Alderton and Gifford, 2018, pp. 53-54). In India, the term "remedial" has been used – both for low-attaining students and the approaches used to improve performance (Banerjee et al, 2007). The problem is compounded because teachers often believe 'ability' to be a fixed characteristic, and that this inherent 'ability' determines a student's 'educability' (Singal, 2008). Hence, under-performance in tests is attributed to intrinsic inadequacies within an individual student. During my master's research, I found that even mathematics teachers who are open to curricular and pedagogical innovations, are quite happy for the benefits of

these to reach only a handful of higher-attaining students in their class (Srinivas, 2021). The present professional development system in India provides no opportunity for teachers to rethink and challenge these deep-rooted assumptions (Singal, 2008). There is an urgent need to enable teachers to challenge not only the grand narratives of performance-driven notions of 'inclusion', but also their own discourses around 'ability' and 'educability'.

Another challenge is that the teaching profession is increasingly being 'deprofessionalised' in India, with increased surveillance measures and an erosion of teacher agency (Sarangapani, 2021). While it is important to create opportunities for teachers to question the hegemony of the individual, achievement-based discourses, it is equally important to do so using a methodological approach that draws upon, and also builds up, collective agency. I will not go into the details of my research questions in this paper, but broadly what my research sets out to do is to develop collective *researcher-practitioner* agency to challenge the binary of '*normal*' vs '*remedial*' students - and in doing that, trouble the *researcher-practitioner* binary too. The upcoming sections justify why I chose Collective Biography as a research method to achieve this, and how I plan to use it in my study.

Collective Biography as a feminist-poststructuralist research method

My approach is inspired by feminist-poststructuralism - as Gannon and Davies (2012) argue, "post-structuralism… might be seen as the antithesis of global capitalism's and neoliberal-ism's emphasis on the individual" (p.72). While humanist perspectives consider a person to *have* an 'identity' that is fairly stable and coherent, poststructuralism considers "the experience of being a person" through the notion of 'subjectivity'(Davies, 1991). According to humanist/structuralist theories, language can be used to describe or analyse a person, while according to poststructuralism, language is *constitutive* – discourses produce a person (Foucault, 1982; Gannon and Davies, 2012). For work that hopes to explore possibilities of change in everyday practices, it seems imperative to examine the conflicting discourses – social and political, that a teacher needs to negotiate – both individually and as a collective, with other teachers and the researcher. This allows us to understand our own subjectivities and explore possibilities of action. As St. Pierre asserts, "Post structuralism does not allow us to lay the blame elsewhere, outside our own daily activities, but demands that we examine our own complicity in the maintenance of social injustice" (2000, p. 484).

Additionally, feminism-oriented poststructuralist approaches offer affordances to unsettle not just gender-based, but any binaries categories (Davies and Hunt, 1994). For the purpose of my research, while I will do lesson observations and teacher interviews, I want to focus on a method that has its roots in feminist-poststructuralism – Collective Biography (Davies and Gannon, 2006).

What is Collective Biography?

The phrase 'collective biography' has been used in different ways – a common usage being an annotated bibliography or simply a collection of biographies of different people under a specific theme. However, feminist theorists have adapted the term not in its usual, literary sense, but as a feminist poststructural research method (Davies and Gannon, 2006; 2009). It involves a group of people getting together[1] to engage collectively in 'memory work' – drawing on their own memories and experiences

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[1] In their book Doing Collective Biography, Davies and Gannon mention getting together physically as a prerequisite for doing collective memory work.

related to a specific theme of common interest to "develop and refine [their] capacity to reflexively turn [their] gaze on ourselves in remembered moments of turning, of constituting ourselves and being constituted" (Davies and Gannon, 2006, p. 11).

As a research method, Collective Biography is typically used by a group of researchers to turn inwards to their own memory to examine the power structures that shaped their actions and choices. It has its roots in the work of Haug at al (1987, cited in Davies and Gannon, 2006), who used memory work as a disruptive methodology to question certain tenets of Marxist theory, moving between autobiographical recollections of the researchers, and analysis. Davies and Gannon's (2006; 2009) approach builds on this, uncover norms, thoughts and practices that are usually *taken for granted*. This is useful for my proposed research, because its goal is for researcher and teacher-participants to move between individual reflection, collaborative reflections and analysis - on established norms, and our own discourses and practices related to low-attaining students.

Rationale for choosing Collective Biography

It is the operative word '*collective*' in collective biography that has nudged me towards this research method for my project. I have been a teacher myself, and the broader purpose of the current project is to explore how the researcher and teachers might develop collective agency (Adams et al, 2021). While understanding that my participation in the research process might affect both the process and the outcome, it is also important to me to not do research *on* the participants. Adopting a collective biographical approach would mean that as a part of the collective, I too would have to take part in the memory work and put myself in a vulnerable position. As such, this method has the potential to mitigate some of the power imbalance between myself, as a researcher from a premier university, and the collaborating teachers.

An established (and arguably, more popular) research method that also builds on the notion of the reflexivity of the participants is PAR- Participatory Action Research (Skovsmose and Borba, 2004). PAR, as propounded by Skovsmose and Borba is grounded in Critical Theory and focuses on both 'participation' and 'action', on part of the participants. It has been used successfully in mathematics education research (Adams et al, 2021). However, in the context of my research, an emphasis on action might be construed as pressure, especially since I am no longer actively teaching mathematics and could easily be perceived as an outsider. While not rejecting the possibility of transformative action (in terms of classroom practice) on the part of the participants either during the later stages of the project or in future, the present research will be limited to making visible what subject positions might be available to us to take up for resistance – individually and as a collective.

I also have a deeply personal reason for choosing this method. I was myself a teacher for many years, and my current research interest has come about as a result of my reflexivity related to my own experiences with low-attainment over the years. As a young teacher, I believed strongly in 'quick fix' ways to deal with low-attaining students – separate them into small groups for 'remedial' teaching. The specific trigger (and inspiration) for embarking on this research project was a small piece of individual 'memory work' - a conversation with a friend, who was once a student of mine. The conversation revealed that despite being a very successful professional now, she sees herself as being incapable of doing even simple, everyday mathematical problems. The effect of being labelled as a 'low-attainer' (or 'remedial' student), often stays with a student for life, no matter how successful they are as adults. Davies and Gannon (2006), in describing their work with collective biographies over the years, mention how *memories trigger memories* – how the recollections and

reflections of one participant often trigger related memories in the others – sometimes ones whose existence they had forgotten about. In that sense, it is possible that through our collective biographical reflections and analysis, the teacher-participants find their own moments or memory stories and are able to explore the future-directedness of their own reflexivities.

In my research, Collective Biography Workshops (CBWs) will be designed to enable the researcher (myself) and teacher-participants to collectively do a reflexive deep dive into our own memories and experiences with 'low-attainment', 'ability', 'educability' and 'inclusion'. The CBWs will also engage us, the researcher-teacher collective, in discussing our interactions of these memory stories with theories of social justice and the notion of 'parity of participation' (Fraser, 1998).

Collective Biography: past and proposed

Typically, a group of researchers setting out to do a CB choose a topic of common interest, read up on it prior to the workshop, and the workshop itself is used as a space for sharing their own memory stories based on this topic (Davies and Gannon, 2006). After the sharing, the participants retire to write one or more selected stories from amongst the ones they came up with, and the written stories are then re-read collectively, and used as data for a specific purpose the usual output of a CBW is usually an academic one – a book or a journal. The sequence of activities in a typical CB project is shared in Figure 1.

Figure 1: Sequence of activities in a typical CB project

Ethical considerations

CB workshops typically take place over a few days in an informal, relaxed atmosphere. Outside the workshop hours, a lot of informal, collective events like cooking and yoga might be a part of a day's activities (Davies and Gannon, 2006). While working with teacher participants, however, it would not be ethical to demand so much time from them, so I propose shorter workshops (of duration 1-2 days). It will also not be ethical to demand that they produce academic outputs, so the output will be decided through dialogue with the teacher-participants. Table 1 shows a comparison of the past and proposed ways of doing a collective biography.

	Past	Proposed
Who	Typically used by a group of researchers interested in a common topic	To be used by the researcher with a group of practitioners (teachers), interested in exploring ways of creating an inclusive classroom
Where & How	Pre workshop academic reading.	Pre-workshop reading might need to be substituted with seminars on the topic to be explored collectively.
	Workshops often held off-site, in extremely informal settings, sometimes over the course of several days.	Workshops might have to be in slightly more formal settings and perhaps a day or two at a time.
	Each researcher-participant recounts and writes her own memory stories, and later, also analyses the 'data' and 'writes up'	Writing may not be the preferred format for all participants, alternative formats might have to be enabled and accepted.
Purpose	Theorising topics of common interest.	Deliberating on different discourses on 'ability', 'educability' and 'inclusion';

		Triggering ethical reflexivity and exploring possibilities for achieving participatory parity in the mathematics classroom.
Output	Academic writing – journal articles or book (it HAS to be joint, involving every member of the collective).	To be decided collaboratively - maybe a framework/ blueprint detailing a way forward (while not ruling out a joint publication).

Table 1. Past vs Proposed ways of doing Collective Biographical Workshops

Limitations of using a collective biographical approach

Like other qualitative research approaches which are not rooted in realist and positivist traditions, data from Collective Biographies is also bound to be viewed with suspicion (Davies and Gannon, 2006). The knowledges it produces will not be 'objective truths' or ready-to-serve, scalable solutions to the educational challenge it focuses on. However, it will be one version of the 'truth' – subjective and discursively constituted through the accounts of the individual and collective experiences and history of the teacher-participants and the researcher – and hence trustworthy, and useful in the broader aim of creating a reflexive and agentic researcher-teacher community.

Conclusion

This work-in-progress paper argues that collective biographical approaches have potential to be used in mathematics education research and justifies the rationale for proposing to use it in my own upcoming research. Implementing it with teacher-participants will provide empirical data and insights on the challenges and opportunities it presents when used as a research method on the field.

References

Adams, G., Boylan, M., Chronaki, A., Otieno, H., & Wright, P. (2021). Mathematics teacher agency. In: D. Kollosche, (ed.) Exploring new ways to connect: *Proceedings of the Eleventh International Mathematics Education and Society Conference*. Tredition, 95-98.

Alderton, J., & Gifford, S. (2018). Teaching mathematics to lower attainers: Dilemmas and discourses. *Research in Mathematics Education*, *20*(1), 53-69. https://doi.org/10.1080/14794802.2017.1422010

Banerjee, A. V., Cole, S., Duflo, E., & Linden, L. (2007). Remedying education: Evidence from two randomized experiments in India. *The quarterly journal of economics*, *122*(3), 1235-1264. https://doi.org/10.1162/qjec.122.3.1235

Davies, B., & Gannon, S. (2006). *Doing collective biography*. Berkshire, England: Open University Press/McGraw-Hill Education.

Davies, B., & Gannon, S. (Eds.). (2009). *Pedagogical encounters.* New York: Peter Lang.

Davies, B., & Hunt, R. (1994). Classroom Competencies and Marginal Positionings, *British Journal of Sociology of Education, (15)*3, 389-408, DOI: 10.1080/0142569940150306.

Foucault, M. (1982). The Subject and Power. In: H. Dreyfus and P. Rabinow (Eds.) *Michel Foucault: Beyond Structuralism and Hermeneutics*. New York: Harvester Wheatsheaf. (pp. 208–226).

Francis, B., Craig, N., Hodgen, J., Taylor, B., Tereshchenko, A., Connolly, P., & Archer, L. (2020). The impact of tracking by attainment on pupil self-confidence over time: demonstrating the accumulative impact of self-fulfilling prophecy. *British Journal of Sociology of Education*, *41*(5), 626–642. https://doi.org/10.1080/01425692.2020.1763162

Fraser, N. (1998). *Social justice in the age of identity politics: redistribution, recognition, participation.* (Discussion Papers / Wissenschaftszentrum Berlin für Sozialforschung, Forschungsschwerpunkt Arbeitsmarkt und Beschäftigung, Abteilung Organisation und Beschäftigung, 98-108).

Gannon, S., & Davis, B. (2012). Postmodern, post-structural, and critical theories. In S. N. Hesse-Biber (Ed.), *The handbook of feminist research: Theory and praxis* (2nd ed., pp. 65– 91). Thousand Oaks, CA: Sage.

Government of India. (2019). The Right of Children to Free and Compulsory Education (Amendment) Act, 2019. https://www.education.gov.in/en/sites/upload_files/mhrd/files/upload_document/rte_2 019.pdf

Gutiérrez, R. (2013). The sociopolitical turn in mathematics education. *Journal for Research in Mathematics Education, 44*(1), 37–68. https://doi.org/10.5951/jresematheduc.44.1.0037

National Education Policy (NEP) 2020, Ministry of Human Resource Development, Government of India. Retrieved from https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Owens, J., & de St Croix, T. (2020). Engines of social mobility? Navigating meritocratic education discourse in an unequal society. *British Journal of Educational Studies, 68*(4), 403–424. doi:10.1080/00071005.2019. 1708863.

Portela, M. J. O., & Pells, K. (2015). *Corporal Punishment in Schools Longitudinal Evidence from Ethiopia, India, Peru and Viet Nam.* Italy: UNICEF Office of Research – Innocenti. Discussion Paper 2015-02.

Sarangapani. P. M. (2021). A Cultural View of Teachers, Pedagogy, and Teacher Education. In. P. M. Sarangapani and R. Pappu (eds.), *Handbook of Education Systems in South Asia*, Singapore: Springer. (pp. 1247-1270).

Singal, N. (2008). Working towards inclusion: Reflections from the Classroom. *Teaching and Teacher Education*, *24,* 1516-1529. DOI: 10.1080/00131911.2013.847061

Skovsmose, O., & Borba, M. (2004). Research methodology and critical mathematics education. In P. Valero, & R. Zevenbergen (Eds.), *Researching the socio-political dimensions of mathematics education* (pp. 207–226). Dordrecht: Kluwer.

Srinivas, S. (2021). *Understanding the teacher change environment with respect to dialogic teaching in secondary mathematics classrooms in India*. School of Social Science & Public Policy. [Master's dissertation]. King's College London.

St. Pierre, E. A. (2000). Poststructural feminism in education: An overview. *International Journal of Qualitative Studies in Education, 13*(5) 477-515. DOI: 10.1080/09518390050156422

Valero, P. (2018). Human capitals: School mathematics and the making of the homus-oeconomicus. *Journal of Urban Mathematics Education*, *11*(1&2), 103–117. https://doi.org/10.21423/jume-v11i1-2a363