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Reclaiming Educational Purpose in the Digitalisation of Welfare: Boundary Judgements and the Infrastructural Curriculum of Social Work in India

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Abstract

Welfare in India is now administered through biometric authentication, mobile applications and dashboards, and frontline workers learn their work through these systems. Social work education has largely treated the change as a matter of digital skills. This conceptual article reads welfare infrastructure systemically. Drawing on Biesta's three domains of educational purpose (qualification, socialisation and subjectification), infrastructure studies and critical systems heuristics, it proposes the concept of the infrastructural curriculum: the lessons about competence, membership and judgement that a welfare system teaches those who operate it, through the boundary judgements built into what it accepts, rewards and treats as error. The concept is examined against three cases documented in official, legal, journalistic and peer-reviewed sources: Mission Karmayogi, facial recognition in the Poshan Tracker, and app-based attendance and Aadhaar-based payment in the rural employment guarantee. The cases suggest that the infrastructural curriculum qualifies efficiently, teaches workers to take the system's boundary as given, and leaves judgement to the moment of breakdown, when the system refuses a person who is affected by it but has no say in it. Social work education can reclaim its purpose by teaching boundary critique as part of professional competence, by inducting students into the profession before the dashboard, and by treating breakdown as material for cycles of action and reflection, run in partnership with the agencies where students are placed.

Keywords: critical systems heuristics, boundary critique, educational purpose, digital welfare, social work education, India

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Reclaiming Educational Purpose in the Digitalisation of Welfare: Boundary Judgements and the Infrastructural Curriculum of Social Work in India

From 1 July 2025, pregnant and lactating women in India could collect take-home rations from an Anganwadi centre only after the Poshan Tracker application had matched their faces to their Aadhaar records. The Ministry of Women and Child Development removed the option to skip the step, and workers were told to uninstall and reinstall the application (Shagun, 2025). Anganwadi workers reported that the scan often failed on the first attempt, that the one-time password needed for authentication often went to phones held by male relatives, and that a single beneficiary could take 20 minutes to process (Shagun, 2025). Within a year a union of Anganwadi workers and helpers had challenged the mandate before the Karnataka High Court, where counsel for the Union government told the court that workers who did not comply were receiving show-cause notices (James, 2026).

The episode is usually read as a problem of exclusion, and it is one. It is also something else. Workers who repeat this sequence for every beneficiary, every month, are learning what their work consists of: that a ration is delivered when a face is matched, that a failed match is a problem to be cleared before it is a person to be attended to, and that their own reliability will be read from the record. Social work students placed in child development projects can learn the same lessons, sometimes before they have learnt much else about the families they meet.

Over the past decade, welfare delivery in India has been rebuilt around a biometric identity system, direct benefit transfers, and scheme-specific management information systems and mobile applications. Economists have measured what this did to leakage and delay (Muralidharan et al., 2016). Critical scholarship has documented whom it excluded and how (Chaudhuri, 2022; Khera, 2017; Masiero & Das, 2019). Less attention has gone to a quieter consequence. The systems through which welfare is delivered are also the systems through which welfare work is learnt, and they educate whether or not anyone intends them to. The

article uses *digitalisation*, following Brennen and Kreiss (2016), for this reorganisation of social and professional life around digital infrastructures, and keeps *digitisation* for the narrower conversion of records into machine-readable form.

Social work has mostly answered digitalisation as a question of skills and settings. Its literature asks what practitioners need to know to work well with digital tools (Taylor, 2017), and how practice changes when the encounter moves to the screen and the phone (Pink et al., 2022). Indian discussion has begun to ask what digital change means for field practice and for the profession's commitments to rights (Mathiyazhagan, 2022; Singla, 2020). Rarely, however, has it been put as a question about the purpose of professional education. That question is the one this article pursues.

Its argument is that the skills framing misreads the problem. When welfare is administered through infrastructure, the infrastructure becomes one of the profession's teachers, and a teacher with considerable authority, since its lessons are conditions of doing the work at all. Biesta (2009, 2010) has argued that education always operates in three domains of purpose (qualification, socialisation and subjectification) and that an age of measurement tends to collapse the second and third into the first. Infrastructure studies holds that infrastructure is learnt as part of becoming a member of a community of practice and that it becomes visible when it breaks down (Star, 1999; Star & Ruhleder, 1996). Critical systems heuristics holds that every account of a system rests on boundary judgements about which facts and values count, and asks who speaks for those affected by a system but not involved in it (Ulrich, 2005). The article brings these bodies of work together to develop the concept of the *infrastructural curriculum*, and makes three claims about it. It qualifies efficiently but narrowly, defining competence as the completeness of a record. It socialises workers into a data order in which the record precedes the person. And it leaves no place for subjectification except at the point

of breakdown, when a system refuses someone and a worker must decide, without preparation, what kind of practitioner to be.

The article contributes to systemic practice in two ways. It shows how the boundary judgements of a welfare system are taught to the workers who operate it, so that the system's boundary becomes part of a profession's formation, and it argues that boundary critique belongs in the education of those workers. It also extends Biesta's account of educational purpose, developed mainly for schooling and teacher education, to professional formation inside digitalised welfare, where the most consequential curriculum is written outside the university. The next section sets out the methodology. The article then traces the question of purpose through Indian social work education, develops the concept, reads it against three Indian cases and a constructed vignette, assesses what the concept adds, and closes with implications for social work education and for action research in field education.

Methodology

Design

This is a conceptual article. It reports no primary data and involved no participants, and its contribution is a concept together with an account of how that concept operates. Conceptual work develops arguments and does not test hypotheses, but it still owes readers an account of how its argument was built (Gilson & Goldberg, 2015). The design follows what Jaakkola (2020) calls theory adaptation, in which a domain theory is revised by bringing a second body of theory, a method theory, to bear on a phenomenon the domain theory did not anticipate. The domain theory here is Biesta's account of educational purpose. The method theory is infrastructure studies, read alongside critical systems heuristics, which treats the boundary of any system as a judgement that can be made explicit and questioned (Ulrich, 1983, 2005). The phenomenon is the learning that occurs when workers must operate a welfare infrastructure as a condition of doing their work, whether or not anyone intends that learning.

Each body of theory was chosen for a reason. Biesta's account asks what education is for, a question that a skills framing tends to settle in advance. Infrastructure studies explains how systems shape practice from the background and how newcomers come to know them. Critical systems heuristics asks whose purposes and knowledge a system's boundary takes in, and who is affected by the system without being involved in it, questions that a skills framing, concerned with the competent operator, leaves aside. Indian scholarship on social work education and on digital welfare was drawn on deliberately, so that the question of purpose is located in the profession's own debates and not imposed on an Indian example from outside.

Case Selection

The cases are instrumental in Stake's (1995) sense: each is examined less for its own sake than for what it shows about the concept. Selection was information-oriented, favouring cases expected to be rich in information about the phenomenon (Flyvbjerg, 2006). Three criteria applied. The system had to be one that frontline welfare or public-service workers in India must operate as a condition of their work. Its operation had to be documented in official records, court proceedings, reportage or peer-reviewed research that readers can check. And the cases together had to include routine operation as well as breakdown, and to span the three domains of purpose. Three cases were selected against these criteria: Mission Karmayogi, the national programme for building the capacity of civil servants; facial recognition in the Poshan Tracker used by Anganwadi workers; and app-based attendance and Aadhaar-based payment in the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA). The cases are not a sample, and they cannot show how widespread any pattern is.

Sources

Table 1 lists the sources used for each case. All are publicly available and were accessed in October 2026. Official and legal sources were used where they existed. Reportage was used where it offered the only public account of how a mandate worked in practice, and claims taken

from reportage are attributed to the outlet and, where reported, to the person quoted. Peer-reviewed research was used to situate each case and, in the third case, to supply evidence that runs against the argument.

Table 1

Documentary Sources for the Three Cases

Case	Source	Type	What the source documents
Mission Karmayogi	Press Information Bureau (2020)	Official press release	Cabinet approval; the move from rules-based to roles-based management; the competency framework; the iGOT Karmayogi platform
Poshan Tracker	Shagun (2025)	Reportage	Dates of the mandate; steps of authentication; workers' reports of failure; union response
	James (2026)	Legal reportage	Union petition; the December 2025 directive; show-cause notices reported in court
	Azhagu Meena et al. (2022)	Peer-reviewed study	Anganwadi workers' data work under an earlier monitoring application
MGNREGA	Thanawala (2023)	Reportage	Directive on app-based attendance; its requirements; critique by a founding member of the Mazdoor Kisan Shakti Sangathan
	Press Trust of India (2024)	Wire report	Mandate for Aadhaar-based payment; Ministry figures on enablement and job card deletions; warnings from LibTech India
	Muralidharan et al. (2016)	Peer-reviewed study	Gains from biometric payment in Andhra Pradesh, used as evidence against the argument
	Mathur (2016)	Ethnography	Paper-based implementation of the employment guarantee before digitalisation

Note. All sources are publicly available and were accessed in October 2026. The constructed vignette draws on the Poshan Tracker sources.

The vignette that follows the cases is a composite, constructed for illustration from features of the Poshan Tracker mandate reported in these sources. It is not evidence and does not describe any real person.

Analytical Strategy

Each source was read with four questions in mind: what the system requires as input; what it makes visible or rewards; what it treats as an error, and what follows from an error; and what happens to workers who do not or cannot comply. The answers were mapped onto Biesta's three domains, and the mapping was used to specify the attributes of the concept. Material that ran against the argument was sought and kept. The gains documented for biometric payment (Muralidharan et al., 2016) are reported alongside the costs, and workers' contestation of mandates is treated as evidence that the infrastructural curriculum is taught without always being learnt.

Rigour and Positionality

The concept is judged on three grounds adapted from Gerring (1999). Differentiation asks whether it picks out something that neighbouring concepts, such as exclusion, the hidden curriculum and digital literacy, do not. Coherence asks whether its attributes hold together across cases that differ in level, population and scheme. Utility asks whether it revises the accounts it draws on and yields implications that educators can act on and others can contest. The discussion returns to each ground. Every factual claim about the cases is traceable to a public source, so that the reading can be checked and disputed. The authors write from within Indian social work education. That position gives access to the debates the article draws on, and it also carries a risk of reading the field through its own preoccupations, which the reliance on public sources is meant to contain.

Use of Generative AI

A generative AI language model was used during the preparation of this article to help draft passages and to locate candidate sources. The authors determined the argument and its structure, checked every cited source against its original publication, revised the text, and take full responsibility for its content.

Educational Purpose and Its Indian Lineage

Biesta's Three Domains

Biesta's argument begins with a complaint about the language of education. As talk of learning, outcomes and effectiveness has displaced talk of education, the question of what education is for has been pushed aside, and measurement has made it easier to value what can be measured than to measure what is valued (Biesta, 2009, 2010). Against this he proposes that education always works in three domains of purpose. *Qualification* concerns the knowledge, skills and dispositions that allow people to do something, from a trade to a profession. *Socialisation* concerns the ways in which, through education, people become part of existing social, cultural and professional orders. *Subjectification* is in a sense the opposite of socialisation: it concerns ways of being in which a person is not simply an instance of an order but can act independently of it (Biesta, 2009).

The domains overlap, and any educational practice touches all three, whether it attends to them or not. Good education, on this account, is a matter of judgement about the balance between them in a particular situation, and the educator who makes that judgement needs to be educated to make it (Biesta, 2015). In later work Biesta (2020) sharpened the third domain. Subjectification, he argues, does not mean forming an identity. It concerns the student's existence as a subject, and so the question of how a person will exercise freedom in relation to others. No technique can produce it. Education can only keep open the situations in which a person encounters that question.

Two features of this account matter here. First, Biesta treats the collapse of education into qualification as a tendency of measurement-driven systems, not as a choice that anyone makes. Second, the account was built for schooling and teacher education. It has been less often applied to professional formation in settings where much of what novices learn is taught by the work itself.

The Question of Purpose in Indian Social Work Education

The question of purpose is not new to Indian social work education, though it has rarely been put in Biesta's terms. The profession's first schools were built on American models, and critics argued for decades that the curriculum taught methods and casework vocabularies with little purchase on Indian poverty, caste and community life (Mandal, 1989; Nagpaul, 1993). Nagpaul's (1993) analysis of the teaching material used in Indian schools of social work made the case for indigenous foundations. Desai (1985) examined the foundations of social work education in India, and Kulkarni (1993) argued for the indigenous base of the profession, without which it could not settle the purposes of its education. Others took a different route. Siddiqui (1987) proposed organising social work education around specified competencies, an early instance in Indian social work of the pull towards qualification that Biesta describes. Alongside both ran a strand that looked to Gandhi and Tagore for an Indian account of what social work should form in its practitioners (A. Kumar, 1998). Gandhi's (1953) remark that "real education consists in drawing the best out of yourself" (p. 33) is, in Biesta's vocabulary, a statement about subjectification.

The wider Indian debate on education has asked the same question. K. Kumar's (1992) *What Is Worth Teaching?* asked which knowledge a curriculum should select, and treated that choice as a statement about the purposes of education. Current national policy states those purposes in broad terms: the education system is to develop "good human beings capable of rational thought and action" (Ministry of Human Resource Development [MHRD], 2020, Introduction).

What is new, then, is the setting of the question. The earlier debates about purpose in Indian social work were conducted between educators: the American model and its Indian critics, the planners of competencies and the followers of Gandhi. All of them assumed that the

curriculum was something educators wrote. In digitalised welfare, a large part of what practitioners learn about their work is written somewhere else.

Infrastructure as Teacher

Boundary Judgements

Critical systems thinking offers a way to say what an infrastructure has decided before anyone operates it. In critical systems heuristics, boundary judgements define the reference system for any claim: they settle which facts and which values are treated as relevant and which are left out (Ulrich, 2005). Ulrich groups these judgements into twelve questions under four sources of influence. Questions of motivation ask who the client or beneficiary is, what the purpose is and what counts as improvement. Questions of power ask who decides and which resources that person controls. Questions of knowledge ask whose expertise counts and what is taken to guarantee success. Questions of legitimation ask who speaks for those affected but not involved, and which worldview frames the situation. Each question can be asked in two modes, as a description of the boundary in force and as a proposal for the boundary that ought to hold (Ulrich, 2005). Midgley et al. (1998) showed how disagreement over a boundary can harden, so that some groups and their concerns are pushed to the margins, and argued that interventions should be designed to explore boundaries and protect what marginalised groups can contribute. Boundary critique continues to be used in systemic practice to bring stakeholders who are involved in or affected by an organisation's work into a shared inquiry (Ufua, 2020).

A welfare application is a set of boundary judgements made in advance and written into code. Its required fields settle who the beneficiary is. Its completion counts settle what improvement means. Its dashboard settles who decides and whose knowledge is consulted. A woman whose face is not matched is affected by all of these judgements and involved in none of them. Ulrich (2005) presents boundary critique as a reflective attitude, not a technique, and

argues that it can strengthen the critical competence of ordinary people as well as of professionals and decision-makers. That makes it a candidate for professional education. It also raises the question this article takes up: how the boundary judgements of a system are learnt by the people who operate it every day. In higher education, data systems increasingly decide what counts as teaching and learning by deciding what is recorded (Williamson et al., 2020). Welfare work is subject to the same pressure, with the difference that what the record decides is whether a person receives a ration or a wage. Systems thinking has been brought to social work before. Munro (2010) argued that child protection services should be understood as complex, adaptive systems, and that performance management and a culture of blame push practice towards rigid procedure and make it harder for professionals to learn.

What Infrastructure Studies Adds

Infrastructure studies offers a more precise vocabulary for what happens in such work. Star and Ruhleder (1996) argued that infrastructure is relational: a system is infrastructure for someone, in relation to some practice, and not a thing in itself. Two of the properties they identified matter here. Infrastructure is learnt as part of membership: newcomers become familiar with its objects and arrangements as they become members of a community of practice, while outsiders meet it as something strange. And infrastructure tends to become visible upon breakdown: while it works it recedes into the background, and it comes into view when it fails (Star, 1999; Star & Ruhleder, 1996). Bowker and Star (1999) add that the classification systems built into infrastructure sort people and things, and that someone, usually without acknowledgement, does the work of fitting untidy cases into fixed categories.

Read together, these claims imply something that infrastructure studies has not much developed. If infrastructure is learnt as part of membership, then infrastructure teaches. It teaches newcomers what the community's objects are, which actions count and what can safely

be ignored. It does so without a teacher, a syllabus or an examination, through the conditions under which work can be done at all.

Welfare Infrastructure in India

Indian research supports reading welfare systems in this way. Chaudhuri (2019) shows that Aadhaar functions through human intermediaries whose labour makes the digital infrastructure work, and Chaudhuri (2022) traces how officials in the public distribution system translate between algorithmic rules and the people in front of them. Masiero and Das (2019) argue that the datafication of anti-poverty programmes raises questions of data justice that efficiency arguments do not settle. Azhagu Meena et al. (2022) found that a real-time monitoring application turned Anganwadi workers, whose work had centred on day care and community health, increasingly into collectors of data, with care standardised for state monitoring while still depending on workers' relationships with the communities they serve.

The pattern is older than the application. Before the application there was the register. Gupta (2012) analyses bureaucratic writing as a practice of the Indian state, and shows how the mechanisms meant to relieve poverty distribute care arbitrarily. Mathur (2016) follows the rural employment guarantee through the administrative machinery of a Himalayan district and finds it bound up in paper. Social work scholarship elsewhere has described a parallel shift in the profession's own knowledge, from the social to the informational (Parton, 2008), and an "electronic turn" in practice that reorganised what social workers were asked to record (Garrett, 2005). The digital system does not invent the bureaucratic curriculum. It changes its medium, its speed and its reach, and it removes much of the latitude that paper allowed.

The Infrastructural Curriculum

The *infrastructural curriculum* is the set of lessons about competence, membership and judgement that a welfare infrastructure teaches those who must operate it, through what it accepts as input, rewards with visibility and treats as error. Read through critical systems

heuristics, these are the system's boundary judgements, met from the inside by the people who must work within them. Three neighbouring ideas help to define it by contrast.

The first is the hidden curriculum. Jackson (1968) used that term for the unofficial lessons of classroom life, carried by its routines of waiting, evaluation and authority. The hidden curriculum is located in the school and carried by its social arrangements. The infrastructural curriculum is located outside the educational institution, in the workplace and in the delivery of welfare, and it is carried by technical systems. Nor is it hidden in the same sense. Its demands are written into required fields, prompts and error messages. What stays hidden is that these demands teach.

The second is digital literacy. Literacy treats a system as a tool and the person as its user, and asks how well the tool is used. The infrastructural curriculum treats the system as a teacher and the worker as its student, and asks what is being learnt, values and dispositions included. Gray et al. (2018) come closest with their idea of data infrastructure literacy, which they describe as the capacity to account for, intervene around and participate in the infrastructures through which data are made. That idea names something education could teach. The infrastructural curriculum names what is taught in its absence.

The third is technological determinism, from which the concept should be kept apart. A curriculum is taught but not necessarily learnt, and its lessons can be read against the grain. Workers contest mandates, as the cases below show, and research on Anganwadi work finds care persisting in relationships that the system does not record (Azhagu Meena et al., 2022). Calling the system's lessons a curriculum makes them an object of educational judgement, open to the questions educators ask of any curriculum: what it selects, what it omits, and what kind of person it is designed to produce.

Specified across Biesta's three domains, the concept can be set out as in Table 2.

Table 2

The Infrastructural Curriculum Across Biesta's Three Domains of Educational Purpose

Domain	What the infrastructural curriculum teaches	What reclaiming educational purpose asks
Qualification	Operational competence: authenticating, uploading, clearing pending entries and closing cases. Competence is defined as the completeness of the record. Leaves out judgement about whether the record is true to the situation it represents.	Teach infrastructure as an object of judgement: how categories are made, what required fields assume, and what happens to cases that fit none of them.
Socialisation	Membership in a data order: the beneficiary as an authenticated record, time as upload cycles, supervision as the review of a dashboard, and accountability running upward. Leaves out the profession's own traditions of relationship, rights and social justice.	Induct students into the profession before the dashboard, and use field supervision as a site of counter-socialisation.
Subjectification	Little while the system works, since the worker acts as its operator. At breakdown, an unprepared decision about a person the system has refused. Leaves out preparation for acting as a subject.	Design for breakdown: case conferences on failures, field diaries that record refusals, and exercises in which the system's answer is wrong.

Note. Domains of educational purpose from Biesta (2009, 2020).

In the domain of qualification, the infrastructural curriculum teaches operational competence: how to authenticate, upload, clear pending entries and close a case. These are real skills, and a worker without them cannot do the job. The difficulty lies in the definition of competence that comes with them. A system that registers only completed fields teaches that the competent worker is the one whose records are complete. Judgement about whether a record is true to the situation it represents has no field of its own.

In the domain of socialisation, it teaches membership in a data order. The beneficiary becomes an authenticated record. Time is organised by upload cycles and review meetings, and supervision becomes the reading of a dashboard. Accountability runs upward, to whoever reads the record, more readily than outward, to the person the record describes. None of this needs

to be stated for it to be learnt. A newcomer learns it as part of membership, in Star and Ruhleder's (1996) sense, by watching what the office notices and what it lets pass. In Ulrich's (2005) terms, the newcomer learns the system's boundary in the descriptive mode and is given no occasion to ask what it ought to be.

In the domain of subjectification, it teaches very little, because it is designed to make the next step automatic. When the system works, the worker acts as its operator. When it fails, the worker faces a person the system has refused and has to act as someone, not as an operator: to decide whether to send the person away, try again tomorrow, find another route, or record the failure and its consequences. Here Star's (1999) observation that infrastructure becomes visible upon breakdown takes on an educational meaning. Breakdown is the moment when the infrastructural curriculum falls silent, and so the moment when another education, if there has been one, can speak.

Three Indian Cases

Competence on a Platform: Mission Karmayogi

In September 2020 the Union Cabinet approved Mission Karmayogi, a national programme for building the capacity of civil servants (Press Information Bureau [PIB], 2020). Its guiding principle is a transition from "rules based" to "roles based" human resource management, and its method is to calibrate civil service positions to a Framework of Roles, Activities and Competencies, against which learning content is built and the competencies of officers are matched to the requirements of posts (PIB, 2020). Delivery is through iGOT Karmayogi, an online platform owned by a not-for-profit company that is to handle content validation, proctored assessment and telemetry data (PIB, 2020).

The programme is not aimed at social workers, and nothing in the argument depends on its quality. It matters because it is the clearest statement of how the Indian state now imagines the education of the people who administer welfare. Read through Biesta, it is a

curriculum built around qualification. Competencies are specified in advance, matched to posts and verified through assessment and data. The announcement speaks of officers who will be creative, constructive and proactive, but the instrument for producing them is a competency framework on a platform (PIB, 2020). Competence is not the problem. Biesta's point is that a system designed to measure competence will tend to treat it as the whole of education (Biesta, 2009).

The move from rules to roles is also a move in socialisation. The officer is inducted into an order defined by the platform's framework of roles, and the platform's telemetry becomes a running record of who the officer is becoming. Subjectification, the officer's existence as someone who might judge that a role or a rule should not be followed in a particular case, has no place in the framework. For social work education the case shows the direction of travel. Siddiqui (1987) proposed competency-based social work education in India almost four decades ago. A platform can now do at national scale what that proposal could only describe, and it can do so without the profession.

Learning the Data Order: Facial Recognition in the Poshan Tracker

The second case returns to the episode with which this article began. The Ministry of Women and Child Development's order of 30 May 2025 made facial recognition mandatory from 1 July 2025 for pregnant and lactating women receiving take-home rations under Poshan Abhiyaan (Shagun, 2025). Authentication required the beneficiary's Aadhaar number, a one-time password sent to the Aadhaar-linked phone and a photograph, repeated every time rations were supplied. Workers described scans that failed, slow networks and server crashes, and pointed out that the phones receiving passwords often belonged to male relatives. The All India Federation of Anganwadi Workers and Helpers demanded that the mandate be withdrawn and announced a nationwide strike for 9 July 2025 (Shagun, 2025). In the Karnataka High Court, a union affiliated with the Federation later challenged both the July 2025 mandate and a

December 2025 directive extending facial recognition to beneficiary registration and to monitoring children's attendance (James, 2026).

Read for what it teaches, the case is a lesson in socialisation. The system inducts workers into an order in which a ration is delivered when a face matches a record, in which the beneficiary is first of all an authenticated identity, and in which the worker's own compliance is visible as data and can be sanctioned. The show-cause notices reported in court make the last point explicit. The qualification on offer is real but narrow: workers become proficient in a sequence of steps. What they are inducted into is a way of seeing their work in which the record comes before the person. This sharpens what Azhagu Meena et al. (2022) observed of the earlier monitoring application: care standardised for state monitoring, while the work still depends on relationships the system does not see.

Subjectification enters the case at breakdown. When the scan fails for the fourth time, the worker is facing a pregnant woman whom the system has refused, and the system offers no field for what happens next. Critical systems heuristics asks who is witness to the interests of those affected but not involved (Ulrich, 2005). At the counter, the only candidate is the worker. The union's petition can be read as subjectification at the level of an occupation: workers refusing the position the system assigns them and insisting, in a court, that they are more than its operators. For social work education the case matters because child development projects and Anganwadi centres are among the settings where social work students are placed and social work graduates find work. Students who arrive in these settings learn the data order quickly, because learning it is how they become useful.

Breakdown as an Educational Event: Attendance and Payment in MGNREGA

The third case concerns breakdown directly. By a directive of 23 December 2022, the Ministry of Rural Development required attendance for all MGNREGA workers, except those working on individual beneficiary schemes, to be captured from 1 January 2023 through the

National Mobile Monitoring System application, as two time-stamped, geotagged photographs a day (Thanawala, 2023). Nikhil Dey, a founding member of the Mazdoor Kisan Shakti Sangathan, objected that MGNREGA workers are paid for the work they complete and not for attendance, that photographs could be manipulated, that genuine workers faced connectivity problems, and that the system "does not promote citizen oversight but bureaucratic oversight" (Thanawala, 2023).

A year later, wage payment through the Aadhaar-Based Payment System became mandatory, after its deadline had been extended four times. When the mandate came into force on 1 January 2024, about 12.5% of active workers were not yet enabled for it, and the Ministry had told the Lok Sabha that more than 5.48 crore (54.8 million) job cards had been deleted in 2022-23, an increase of 267% over the previous year (Press Trust of India [PTI], 2024). The Ministry stated that job cards could not be deleted merely because a worker was not eligible for Aadhaar-based payment. A researcher with LibTech India warned that mandating the system before the infrastructure was ready could lead to deletions when authentication failed, and a LibTech working paper cited reports of field officials deleting job cards after failed demographic authentication (PTI, 2024).

The systems were introduced to solve real problems. In Andhra Pradesh, biometric smartcards made employment guarantee and pension payments faster and more predictable and reduced leakage (Muralidharan et al., 2016), and nothing in this article disputes that such gains are possible. The case is instructive for another reason. Star (1999) observed that infrastructure becomes visible upon breakdown. In MGNREGA, breakdown is also where the infrastructural curriculum reaches its limit. An official facing a failed authentication has two lessons available. The infrastructure teaches that the failed record is a problem and that deleting it clears the problem. The profession would teach that the failed record is a person with a statutory right to work. Which lesson is learnt depends largely on whether anyone has prepared the official to

treat breakdown as a moment of judgement, and not only as an operational fault. The alternative that Dey proposed, citizen oversight through social audits and public wage payments, is itself an account of formation: it places accountability, and with it learning, among the people a scheme serves (Thanawala, 2023).

A Constructed Vignette

The three cases meet in an experience of the kind that a social work field placement can produce. The following vignette is a composite constructed for illustration, drawing on the features of the Poshan Tracker mandate reported above, and is not evidence.

Ananya, a student in the second year of a Master of Social Work programme, begins a field placement in a block-level child development project office in Bihar in July. The project officer asks her to help Anganwadi workers in three centres clear pending entries for take-home rations before the monthly review. Within a week she is faster on the Poshan Tracker than two of the workers she is helping, and the pending count in her centres falls. At the review meeting the officer praises her. In the third week the scan fails four times for a woman in her eighth month of pregnancy, whose Aadhaar-linked mobile number belongs to her husband, who works in Surat. The worker tells Ananya that the woman will have to come back another day.

In three weeks Ananya has learnt how to clear an entry, that cleared entries are what the office values, and that she is good at clearing them. This is qualification and socialisation, delivered efficiently by the infrastructure. She has not been taught what to do when the system's answer and the woman's need diverge, and nothing in the system asks her to decide. Her faculty supervisor will read her field diary on Friday. Whether the entry about the failed scan becomes the occasion for a conversation about judgement, or remains a note about connectivity, is the point at which her education either reclaims its purpose or concedes it.

What the Concept Adds

The three grounds set out in the methodology can now be applied. On differentiation, existing vocabulary describes parts of what the cases show. Exclusion describes what happens to the woman whose face is not matched or the worker whose job card is deleted, and data justice names what is at stake (Masiero & Das, 2019). The hidden curriculum names the unofficial lessons of an institution, and digital skills name what a worker must be able to do. None of these describes what the worker learns from repeating the sequence, and so none of them treats the worker's formation as a question in its own right. The infrastructural curriculum does.

On coherence, the cases differ in level, population and scheme: officers on a national learning platform, women frontline workers in child nutrition, and officials and workers in a rural employment programme. In each, the system's conditions of operation carry lessons in all three domains. In the two cases where the work brings a worker face to face with a beneficiary, breakdown is where those lessons reach their limit. That the pattern holds across settings this different is what an illustrative design can show. How far it holds elsewhere is a question for empirical work.

The lessons of the infrastructural curriculum also fall unevenly. In the Poshan Tracker case, authentication depended on a phone that many women did not control (Shagun, 2025), so the system's refusals followed lines of gender within the household. In the employment guarantee, the burden of failed authentication fell on workers whose records did not match, and the decision about what to do with them fell to field officials (PTI, 2024). Whether these burdens also follow caste, disability, age or remoteness cannot be established from the sources used here, and the question is better left to empirical work than settled by inference. The concept does supply a way of asking it: for each system, who is most often refused at breakdown, and what does the worker facing that refusal learn about whose claims count.

On utility, the concept revises each of the bodies of work it draws on. For Biesta's account, the cases suggest a refinement. Biesta (2009, 2010) describes how measurement tends to collapse education into qualification within a single educational practice. In professional formation inside digitalised welfare the risk takes a different form, because the domains are distributed across different teachers. The infrastructure takes over much of qualification and socialisation, and does so with authority, because its lessons are conditions of doing the work. The university is left with subjectification by default, not by design, and often without access to the moments when subjectification is called for, since those occur at the counter and not in the classroom. The difficulty is then a division of labour between curricula as well as a collapse of purpose within one, and the most formative lessons are taught by the teacher least concerned with purpose.

For infrastructure studies, the concept gives a pedagogical reading to two of Star and Ruhleder's (1996) properties. That infrastructure is learnt as part of membership has usually been treated as an account of how infrastructure persists and spreads. Read as a curriculum, it becomes a question about which membership is being taught, and by whom. That infrastructure becomes visible upon breakdown has usually been treated as an opportunity for the analyst (Star, 1999). Read educationally, breakdown is also an opportunity for the worker, and one that education can prepare people to use.

For critical systems thinking, the cases show that a system's boundary judgements are not only made by designers and contested by stakeholders. They are also taught, every day, to the people who operate the system, and learnt as the ordinary content of the job. In the studies cited here, boundary critique was brought to a situation by researchers working with stakeholders in an intervention (Midgley et al., 1998; Ufua, 2020). The infrastructural curriculum suggests that the workers inside a system are where boundary critique is most needed and least prepared for. Two implications for design follow. A system that records only

completed transactions makes refusals invisible, and so leaves nothing to reflect on. A field that records each refusal and what was done about it, together with a sanctioned route for manual override, would make breakdown visible to supervisors and educators as well as to the person refused. Whether such features exist is a design decision, and the concept suggests that it is also an educational one.

The concept also specifies a mechanism behind an argument made elsewhere about digitally mediated practice: that mediation neither simply erodes nor simply extends relational practice, but redistributes the conditions under which a person can be heard (Vriti & Roy, 2026). The infrastructural curriculum is one of the ways that redistribution is learnt. It shapes which parts of an encounter a worker learns to attend to, and which parts the worker learns to leave unrecorded.

Reclaiming Educational Purpose

The argument is not directed against digital welfare, and it does not suggest that social work education should withdraw from the systems described here. Students will work inside these systems, and refusing to teach them would leave the infrastructural curriculum unopposed. The claim is narrower. Educating students for these systems is not the same as allowing them to be educated by these systems, and social work education has to decide which it is doing. Three moves follow, one in each domain.

Qualification: Teaching Infrastructure as an Object of Judgement

The first move is to teach infrastructure as something to be understood and judged as well as operated. Students would learn how a scheme's categories were made, what each required field assumes about the people it records, where the residual categories lie, and what happens to a case that fits none of them (Bowker & Star, 1999). They would learn to account for, intervene around and participate in the infrastructures they work through, in the sense Gray et al. (2018) give to data infrastructure literacy. Ulrich's (2005) twelve questions give this

teaching a structure. Asked of the Poshan Tracker in the descriptive mode, using the sources in Table 1, they show a system whose measure of improvement is completed authentication, whose decisions are made by a ministry, and whose party affected but not involved is the woman at the counter. Asked in the normative mode, they open the questions of what the system should count as improvement and who should speak for the people it refuses. Operating a system then becomes one part of a larger competence, which includes judging when the system's answer should not be the last word. Indian social work education's long concern with indigenous foundations (Desai, 1985; Nagpaul, 1993) applies here with unexpected force. The categories of a national platform are another imported vocabulary, imported this time from the design of a database and not from a foreign textbook, and their purchase on local life has to be tested in the same way.

Socialisation: Inducting Students into the Profession before the Dashboard

The second move concerns sequence. If newcomers learn infrastructure as part of membership, then the order in which they become members matters. Field education that begins with clearing pending entries socialises students into the data order before they have been inducted into the profession's own traditions of relationship, rights and social justice. Field education could instead begin with the people a scheme serves, and introduce the system as one order among others to be examined. Faculty supervision then becomes a site of counter-socialisation. Supervisors can read pendency figures with students, ask what those figures leave out, and ask whose voice a record is able to carry. That last question matters because mediation does not simply erode or extend the conditions under which a person can speak about difficulty but redistributes them (Vriti & Roy, 2026). A student who has learnt to ask it already belongs to something other than the data order.

Subjectification: Designing for Breakdown

The third move follows from the observation that the infrastructural curriculum leaves subjectification to breakdown. If breakdown is where the student must act as a subject, education should prepare for it deliberately, and not leave it to chance and to the worst moments of a placement. Case conferences could be built around authentication failures and deletions. Field diaries could be designed to record refusals as well as completions. Classroom exercises could present situations in which the system's answer is wrong and ask students what they would do. Biesta (2020) insists that subjectification cannot be produced by technique. Education can only keep open the situations in which a person meets the question of how to act, and these designs do no more than that. What they change is that the question arrives in company, with a supervisor and with peers, and not alone at a counter. Gandhi (1953) tied education to useful work among others. A present-day counterpart for social work students may be the social audits and public hearings that critics of app-based monitoring have defended (Thanawala, 2023), where accountability runs downward to the people a scheme serves and judgement is exercised in public.

Field education is already organised around cycles of action and reflection, and it could be designed as action research in a fuller sense. Participatory research began as a challenge to research that claimed to be neutral and value free, and it asks whose interests knowledge serves (Tandon, 1996). A social work department and a placement agency could take authentication failures as a shared object of inquiry: students and workers record refusals, the cases are discussed in supervision, a change in practice is tried, and its effects are recorded in the next cycle. Worku and Dereb (2026) describe a university and school partnership in which participatory action research moved teachers' professional development from training towards co-designed interventions, classroom coaching and professional learning communities, and in which faculty learnt from classroom realities. A comparable partnership between social work

departments and child development or employment guarantee offices would bring the moments of breakdown inside the curriculum.

National policy offers some support for these moves. A policy that describes the purpose of education as developing "good human beings capable of rational thought and action" (MHRD, 2020, Introduction) gives social work educators grounds to insist that operational competence is not the whole of what they owe their students. What the policy cannot do is protect that purpose in settings where the infrastructure is the more insistent teacher.

Limits and Further Inquiry

The argument has limits. It is conceptual, and the cases are drawn from documentary sources, not from observation of how workers and students actually learn. Several of those sources are reportage, which records what workers and officials said but cannot show how typical their experience was. The cases were chosen to illustrate and examine the concept, not to establish how often the patterns they show occur. The three domains are analytically distinct but overlap in practice, and any specification of the infrastructural curriculum by domain simplifies what workers experience as a single job. The cases are Indian, and the concept's purchase elsewhere remains to be shown, although the spread of digital welfare systems across many countries (Alston, 2019) suggests that the question will recur.

Three lines of inquiry follow. Participatory action research in field placements in child development and employment guarantee settings could establish what students and workers actually learn from the systems they operate, whether the domains distinguished here are visible in their accounts, and whether recording refusals changes what is learnt. Analysis of social work curricula could show whether and how infrastructure is taught as an object of judgement and not only as a tool. And comparative work across welfare schemes could test whether the infrastructural curriculum differs with the design of the system, for example

between systems that tolerate manual override and systems that do not, and whether its burdens follow caste, disability or remoteness as well as gender.

Conclusion

This article began with a welfare application that would not match a pregnant woman's face to her record, and with the workers who must decide what to do next. It has argued that such moments are educational, and that they are the visible edge of a curriculum that runs through the whole of digitalised welfare work. The infrastructural curriculum teaches competence as the completeness of a record, membership as belonging to a data order, and judgement only at the point of breakdown, when the system falls silent and someone must act. For systemic practice, the implication is that the boundary of a welfare system is learnt as well as designed, and that boundary critique has a place in the education of the people who operate it.

For social work education, the practical implication is that the purpose of professional education cannot be settled by adding digital skills to the syllabus. The question Indian social work educators have asked since the profession's American beginnings, what the profession is educating for, has to be asked again in a setting where much of the curriculum is written by infrastructure. Reclaiming educational purpose means teaching infrastructure as an object of judgement, inducting students into the profession before the dashboard, and treating breakdown as a site of professional formation. That is a demanding standard. It is also the standard the profession has always set itself, applied to a teacher it did not choose.

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Author Contributions

Ved Vriti (PhD Scholar, Department of Social Work, University of Delhi; first and corresponding author) conceived the article, designed its conceptual approach, selected and analysed the cases, and wrote the manuscript. Sanjoy Roy (Professor, Department of Social Work, University of Delhi; PhD supervisor of Ved Vriti) supervised the work and critically reviewed and edited the manuscript. Both authors, Ved Vriti and Sanjoy Roy, read and approved the final manuscript.

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