CHAPTER 7

Understanding Community Waste Management through Service-Learning

Experiences from the Manipal University Jaipur K4C Hub, India

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Abstract

The MUJ K4C hub research reflects on the power inequalities, biases and institutional challenges in building effective knowledge relationships with the communities living around Manipal University Jaipur. They use the issue of waste management to illustrate how communities also have and use knowledge, and a community's expectations from academia to solve their day-to-day challenges of accessing municipal services. The role of community based organisations in facilitating community linkages to build trusting community university relationships is also highlighted.

Keywords

sanitation – Swachh Bharat Mission – waste management – institutionalising CURP – service learning

1 Introduction

Knowledge creation in university settings is usually through research (Marks, 2014) that is restricted to the conventional methods that are generally believed and followed by academicians. In contrast, knowledge creation by communities is open, far from the limitations of any conventional rules. Here, it evolves through years of experiences and is disseminated through family stories (Norrick, 1997; Stone, 1988). "The traditional knowledge acquired from their ancestors is freely transferred within the family" (Panghal et al., 2010, p. 6).

Knowledge can be used as a source of power. Exercise of power through control of knowledge – how it is produced, who owns the knowledge that is produced, how it is disseminated, and how and for what purposes the knowledge is used – is made possible through professionalism and monopoly over

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means of communication and learning (Tandon, 2002). Limiting and devaluing knowledge of the ordinary people is influenced through the control and use of this power (Gaventa, 1980). Devaluing popular (people's) knowledge is connected with the rise of modern, professional, knowledge-producing enterprises such as universities and the growth of the knowledge economy.

This chapter aims to understand the differences in knowledge creation between universities and communities. Specifically, it aims to understand whose knowledge counts and who validates what is knowledge? The authors argue there is an asymmetry in who controls the use and validation of the knowledge that is generated through community-university partnerships. They use a waste management case study to explain existing inequalities of knowledge ownership, use and validation in the Indian context.

The MUJ hub considered the case of waste management as an ideal example to understand how community knowledge can be valuable in managing the persistent solid waste management in India's cities given the limited financial resources of municipal authorities to reach every household for waste collection. Moreover, the Swachh Bharat Mission (Clean India Mission), launched by the Government of India in 2014, made waste management a priority for the government as well as to the community. To help every household protect their health and well-being, Swachh Bharat Mission (SBM) developed measures for improved sanitation and waste disposal (Singh et al. 2018; Swain and Pathela 2016). But these measures rely heavily on resources of local bodies and public engagement and support. Furthermore, Indian communities have traditionally been sustainable and sensitive towards waste management by recycling and reusing waste. Hence, the MUJ K4C hub chose to learn from the past (specifically local knowledge used by resource poor communities) to understand how academia can contribute to resolving the issue and support municipal efforts in managing waste.

The authors believe that partnership is essential in knowledge creation and knowledge sharing. A university can work as a partner between government and communities to jointly identify solutions to implement developmental goals in a way that is acceptable to the community as well as make this knowledge freely accessible for all communities to use.

2 The MUJ Hub and Service-Learning

Manipal University Jaipur (MUJ) was established in 2011. In 2018, the MUJ K4C Hub began as a collaboration between MUJ and Society for Participatory Research in Asia (PRIA). Currently, Mahila Housing Sewa Trust (MHT), a

local civil society organisation, is the community partner for the hub. MHT has been active in Rajasthan since 2005. MHT's mission is to strengthen grassroots collectives of women in the urban informal sector to advance constructive dialogue and action on improving their housing, living and working environments. The organisation been instrumental in motivating communities in Jaipur to segregate and use community bins for disposing waste, rather than throwing waste in and littering unoccupied land parcels. MHT has empowered communities by providing technical know-how to make organic manure from kitchen waste.

MUJ practises service-learning to promote community engagement. Service-learning refers to activities organised for the students to interact and work with the communities to solve their issues (Bringle and Hatcher, 1996). Through service-learning, students apply their knowledge to the natural settings of society. By making students partner with the community they are living in, they develop problem-solving competency.

Service-learning has always been an integral part of the Indian education system. The gurukul system believed in knowledge creation and sharing where the student used to live with the teacher (the Guru) (Selvamani, 2019) and practise the gained knowledge through service to the people (Kashalkar & Damodar, 2013).

In universities, service-learning is generally presumed to be 'community engagement', 'extension' or 'social connect' (NAAC resources, 2006). The university-community relationship in service-learning is uni-directional and cannot commonly be referred to as 'community-based participatory research' (CBPR). But, for the purpose of this case study, we use service-learning to mean some form of community engagement and community-based research. This study defines community as a group of individuals following similar beliefs, sharing a geographical location, and facing common issues.

3 Knowledge Society in Contemporary India

Civilisationally, the goal of knowledge in India has been to enhance mental and physical well-being of all. But, in the 21st century, with every nation trying to become a leader in the creation, application and dissemination of knowledge (Law, 2010), we have also seen some paradigm shift in the purpose of knowledge. Now creation of new knowledge principally depends on strengthening the academic institution, promoting research and innovation in laboratories and tapping foreign sources of knowledge. The important aspect of learning from the local community has slowly disappeared.

National Knowledge Commission of India has identified access as one of the most fundamental issues in a knowledge society (Law, 2010). Even if universities, research institutions and laboratories produce large amounts of knowledge, it will be of little use until the majority of the population actually possesses adequate means to acquire, absorb and communicate this knowledge.

Recent policy developments like India's New Education Policy 2020 and the Unnat Bharat Abhiyan program of the University Grants Commission lay emphasis on university-community partnerships in which students engage with communities to solve local problems through local solutions. The emergence and wider acceptance of community based participatory research (CBPR) has also helped to address the issue of making knowledge more accessible and useful, wherein knowledge is created and owned by both the community and university.

4 Case Study Context

MUJ is surrounded by rural areas. The MUJ Hub, quite naturally, began to engage with the communities living in the villages and slums around the university. As a part of the studio hours, students have designed and executed the transformation of a public space in the community, taking lessons and feedback from the users.

Initial engagement for the BKC project involved visits to houses in these villages by university faculty members, along with students. Local representatives (ward members) supported and accompanied us during these visits, assisting with the interactions.

We began to understand how communities produce and use knowledge that enables them to live their daily lives. This was different from how we, as academics and university students, were producing and consuming knowledge, and the purpose for which it was being used.

These initial interactions gave us a sense of how communities view the university. The locals viewed academia as an isolated entity, unconnected to their daily lives.

The gap in how knowledge is generated and consumed relates to how the current community-academia partnership is inherently unequal.

– The authoritative status enjoyed by academia by virtue of the university's formal recognition in the education industry and financial strength. University curricula is guided and validated by the education system through accreditation bodies and government policies. Formal employers only recognise the degrees granted through this structured education system.

- The knowledge coming from a community does not enjoy the same status as the university knowledge even in the general society itself.
- There is no integration of community knowledge into the knowledge that the university is imparting to its students.
- In terms of having knowledge, locals are considered ignorant, raw and unrefined by the academia.
- There is no platform to facilitate exchange of knowledge between locals and academia, both at the one-to-one (household) level and institutionally.

The BKC project gave us the opportunity and incentive to study these inequalities in greater detail. Specifically, through documenting the case study on waste management practices, we aimed to understand:

- How community knowledge is created, shared and validated – both in the community and by the university
- Identify and illustrate the power inequalities that exist between universities and communities
- How can these existing inequalities between the university and the community be bridged

The case study documents the waste management practices in two adjoining villages (Thikaria and Sanjhriya) and two slum localities in the city of Jaipur. The two villages are located in the fringes of Jaipur city. One slum (Kalakar Basti) lies within the city boundaries, while the other slum (Sarai Bawari) lies beyond the municipal limits.

According to the 2011 census, Jaipur is the 10th most populous city in India, with a population of 3.05 million. Jaipur region covers a total area of 2940 sq. km, consisting of 725 villages, one Municipal Corporation and two Municipal Councils, out of which the municipal area covers 484 sq. km. The Panchayat Samitis and Gram Panchayat are part of the rural administrative setup, while Nagar Nigam and Nagar Palika are part of urban governance (Jawaid et al., 2017).

There are 190 listed slums under Jaipur Nagar Nigam and 47 listed slums under the Jaipur Development Authority, out of which 56.13% are without drinking water access, and 19.0% are without access to sanitation facilities (Census Department of India, 2011). The existing sewerage network covers only 60% of the total population of Jaipur city.

The Public Health, Public Works and Mechanical (Garage) departments of Jaipur Nagar Nigam are jointly responsible for municipal solid waste management in the city. The city generates approximately 1831 metric tons/day of solid

waste with an average of 0.460 kg of solid waste, per capita, per day, where per capita solid waste is expected to grow at the rate of 1.5% annually. The current capacity of sewerage treatment plants in the city is only 89.5 MLD, against the requirement of 272 MLD.

Only 50,000 households confined in eight wards have house-to-house waste collection facilities. The waste collection data from Jaipur Nagar Nigam suggests a collection efficiency of only 48%. Also, most of the collection sites are open collection sites (Jawaid et al., 2017).

The main causes of land pollution in Jaipur are poor sewerage systems and solid waste management systems. A huge number of unlined septic tanks, indiscriminate garbage dumping, and the absence of a sanitary landfill site are some of the reasons for land pollution in the city.

5 Methodology

The waste management practices in the two villages and two urban slums were documented to understand how knowledge in a community is created, shared and validated. To document these practices, the MUJ Hub research team visited houses and conducted personal interviews. Data collection was based on a structured questionnaire containing both open and closed-ended questions.

The data collected from the households was shared with various stakeholders, including academic institutions, administrators and other social actors like non-governmental organisations working on the issue of sanitation and waste.

Interviews were also conducted with university administrators and faculty. This was aimed to seek information about knowledge creation by academia and extent of co-creation of knowledge with community. This spotlighted the existing power inequalities in the sharing and validation of community knowledge by the university.

Analysis of the community practices and the university practices around knowledge creation and sharing helped identify the gaps in university-community partnership and suggest a way forward on how the two knowledge systems can be bridged.

Trained Community Action Group (CAG) women members supported the Focus Group Discussions (FGDs) that were held with community women and local ward councillors.

In the sections below, specific quotes from participants have been anonymised to protect identities of individuals.

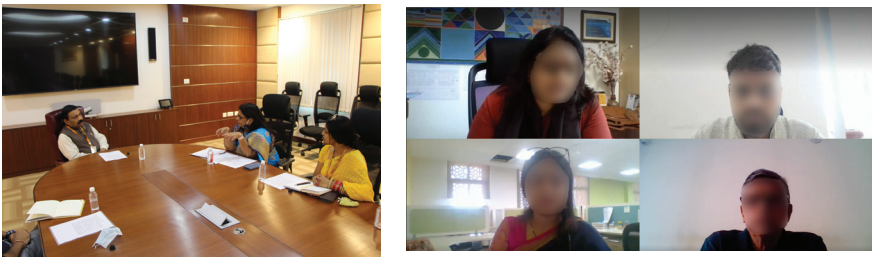

FIGURE 7.1 Interview sessions with university administrators

FIGURE 7.2 Community interaction with the project team on site

FIGURE 7.3 Women who participated in the FGDs along with the community facilitator

FIGURE 7.4 FGD with ward representatives and community members

6 Community Knowledge: Creation and Validation

> Our forefathers have taught us that vegetable peels are good for animals. (Community respondent 4)
>
> My son knows the waste disposal technique because we have taught it to him. (Community respondent 5)
>
> I, my family and my elders validate the knowledge and the same will be disseminated to our children. (Local leader 1)
>
> No school or university can validate or teach the knowledge that parents provide to their children. (Local leader 2)

In response to the questions regarding management of solid waste at household level, the Sarai Bawari community proudly mentioned their traditional practice. For ages, the community has segregated kitchen/vegetable waste and fed it to animals.

It was very clear from the discussions that those who have been managing waste locally through traditional practices are happy and proud of it. However, with launch of SBM, a system of waste segregation at source was introduced without any consultation with the local community. A new system was imposed on them – that of giving their segregated waste to the garbage collection van. They are hesitant to accept it as an alternate practice to their traditional practice of waste management, and replace their knowledge that has been validated in the community over a long period of time.

The community was using dry waste as fuel and were aware it causes pollution, especially the burning of polythene. But they were not aware of how it can be safely disposed.

In the absence of the mandated government waste collection mechanism being effective, communities find their own solutions that solve their contextual problem (*necessity being the mother of invention*). They usually dispose of their domestic waste on a vacant piece of land. This is unsustainable but considered a more straightforward, less time consuming alternative, instead of learning sustainable solutions such as producing less waste, or using specific material waste for creating household articles (glass bottles can be converted to light fixtures, etc).

Acceptance and learning of new methods to reduce and manage waste is higher when mediated through trusted community based organisations and leaders. Approximately 220 households live in Kalakar Basti. Despite being under Jaipur Municipal Corporation jurisdiction, most households did not have access to essential services like water, sanitation, and solid waste management until 2017, when MHT started a project in the slum. As part of its intervention, MHT facilitated the formation of a Community Action Group (CAG). CAG members were trained on various aspects such as the importance of collective leadership, structure of the local municipal corporation, entitlements and government schemes for urban poor and slum development, etc. Training provided by MHT played a pivotal role in the dissemination of knowledge which was then leveraged by the community to access various entitlements and services. The CAG managed to get legal water connections for almost all households, thus improving the overall water, sanitation, and hygiene conditions in the slum.

Learning about organic decomposition of solid waste, its benefits and ease of implementation from MHT, the community jointly agreed to dig a pit in which households could dump their wet waste, cover it with sand, and within a few months this would get converted to manure which could then can be used to grow trees. MHT helped set up the pit in their slum. Once the pit was constructed, responsibilities were assigned to members of the community to

ensure that waste is collected in the pit and the pit was properly maintained. Once a few households start doing it, it was quickly adopted by other households when they saw the benefits. The community was willing to learn new knowledge/adopt a new solution, and validate the knowledge into the community, because the solution provided a benefit (manure) that was useful to them locally, was created in consultation with them, and one they could practice without any support from outsiders or the government.

7 Is Community Knowledge Valued in the University?

> We know that communities possess great knowledge, but we cannot rely on them only. (University administrator 1)

> There is no significant proof of their knowledge as correct so it will not be possible to include it in the daily teaching-learning. But yes, we may provide them with a lot of validated and correct knowledge and that is why we do outreach activities. (University administrator 2)

> Students are sent to the local communities to have a practical application of the theories learned in the classroom. (University administrator 3)

From the interviews conducted with the MUJ academic staff and administrators it emerged that Indian academics believe the university must co-exist with the local community and the university does have an important role to play in developing solutions to the issues that a community faces. They do desire to conduct community-based teaching-learning and research, but lack the necessary direction and institutional support.

The institution is generally weak in community-based teaching and research. Lack of knowledge about effective community engagement methods, institutional policies that don't go far enough to support such engagement, and inadequate allocation of funds to try new methods emerged as the primary reasons behind limited efforts currently being made to co-create knowledge with the community. Universities engaging in community-university partnerships … can benefit from a realistic consideration of university readiness prior to the formation of [community] partnerships (as well as during later stages when considering institutionalisation (Curwood et al., 2011).

It is also evident from the interviews that the primary purpose of service-learning in MUJ is not the co-creation of knowledge but to give students an opportunity to assert and validate the theoretical concepts learned in the

classroom to the community. It is uni-directional, and there is little engagement with the realities of how the community actually lives, and then use the theory or knowledge acquired in the classroom to co-create a solution that is acceptable to the community.

University staff also felt that communities are not very open to partnering with them. The main reason for this is because university efforts to engage with the community are sporadic and generally on a project-to-project basis. Such temporary engagement does not allow trust to be established between the two parties, which is pre-requisite for knowledge partnerships.

The academics we interviewed in MUJ are aware that knowledge does exist within the local community. They have often learnt such knowledge during a project when a community member has shared it with them (for example, community practice of reusing kitchen/wet waste as garden manure). However, they are hesitant to validate such practical knowledge by including it in the university syllabus.

Practical community knowledge is occasionally valued by academics; at times may even be given value above academic knowledge as the community practice may be found to work better than textbook solutions. However, including this knowledge from the community in the formal academic framework requires validation from the academic and research community (through publications, for example), which takes time. Where community knowledge and academic knowledge converge, it becomes easier to accept community knowledge. For example, the CAG member from *Sarai Bawari* mentioned using vegetable peels as animal feed and to make organic manure. Academics accept this practice as sustainable, because formal research has validated it as a way of discarding waste to reduce dependence on cultivated fodder and replacing artificial fertilizers with organic manure.

Learning from the community has mixed acceptance. Though academics value the utility brought by community in terms of undertaking community-based research studies, or implementing pilots, accepting community recommendations and incorporating it in research does not have generalised acceptance. The usefulness of community knowledge (i.e., validating it by including it in the research process) is seen to be project specific and contextual.

8 Power Inequalities

There is no doubt inequalities exist in the value put to the knowledge generated in the villages around/in the slums of Jaipur vis-à-vis that created within the university system. Knowledge, for the university, is in the books

and academic papers that are updated through research as per requirements of the higher education administrators and the policymakers, and as verified by policy-making organisations like National Assessment and Accreditation Council (NAAC) and University Grants Commission (UGC).

The current knowledge culture at MUJ considers knowledge 'correct and valid' when it goes from the university to the community through the service-learning process. Inequality is affirmed in the service-learning component wherein the university/student need is the priority for which community engagement is forged. The project or issue for which the students go to the field may or may not necessarily address the needs of the community. And, most importantly, academics do not consider the possibility that students can learn from the community. Knowledge successfully practised by local communities for generations, which the students may learn during the service-learning engagement process, is not considered useful in itself, and needs to be verified with other sources, such as published research.

In the discussion with university faculty we learnt that the findings emerging from the research done in the community is rarely shared back with the community. This is primarily because the academics believe 'research results' are supposed to be used only for academic purposes. Hence, community continues to be treated as 'subjects' – to collect information and data from, to test new or existing ideas on – but are rarely the beneficiaries of the research project.

There is a lack of trust between the university and community. Sporadic engagement from the university doesn't help to build lasting relationships of trust. The MUJ Hub research team carried out FGD at the Kalakar Basti to capture the community's viewpoint regarding knowledge partnerships between community and academia. One of the key findings that emerged was that the community is only willing to partner with the university (or any other organisation) if they know them well and the project intends to address issues relevant to them.

Differences in how knowledge is dispersed widens the inequality. The university focuses on academic publications, conferences, books, etc, to meet global standards. Additionally, language widens the inequality. Academic publications are usually not in the local language (Hindi). This makes it inaccessible to the community. The community shares knowledge through stories and inter-generational hands-on practice, which is often shared orally in the local language and not documented.

The MUJ Hub researchers took care to translate the questionnaire into Hindi, and hold discussions with the community in Hindi. This made the community participants feel more connected and be open with the researchers.

Some respondents, especially women, are not comfortable (in Hindi) as they were monolingual, and prefer to speak in their local dialect (Doshi and Purohit, 1968). Community leaders (the CAG members) accompanying the researchers stepped in to help translate as they were familiar with the local dialects.

9 Bridging the Divide

> We have never thought about it (university role). (Community respondent 1)
>
> They (university) are literate; they know everything … why will they come to help us? (Community respondent 2)
>
> How can one question our techniques. It is developed through experience. Not every knowledge requires validation from government or universities. (Community respondent 5)
>
> How will a university help in this. Can they come here and collect waste? It is only government who can help us. (Community respondent 5)
>
> There are many big universities in Jaipur but they even don't teach waste disposal much. (Community respondent 6)
>
> Universities can find out new waste management methods, but they will do so only when government asks them to do it. Nobody works without an incentive and the government does not have money to incentivize universities for such petty things. (Multiple community respondents)
>
> Universities are concerned about marks and degrees. (Community respondent 5)
>
> Everyone is interested in earning (money). They (university) never think of the poor. (Community respondent 3)

The above statements were made during the FGD MUJ Hub researchers held with the community to understand their perspectives regarding the role MUJ can play in creating knowledge with them, and for them.

From the discussion it emerged that the communities were unable to envisage how MUJ may help them with waste management. They believed that universities possess knowledge on everything, so they might have some knowledge on waste management as well, but they were not confident that MUJ would come to the community and solve their specific problems related to waste. If the university is pushed by the government, it may try and find solutions.

Lack of trust emerged as a major issue. Why would the university help them? They believe that universities are only interested in making money, and awarding degrees. They have never in the past seen any university helping poor communities to solve their issues.

Bridging the divide then appears to be difficult. But there is common ground – both the community and academia want sustainable waste management practices. Community wants a solution to this persistent problem which causes health issues, while academia wants to identify *indigenous* solutions that can work in the Indian context and thereby help spread sustainable practices.

This can be the impetus needed to improve collaboration between MUJ and the village and slum communities. Solutions to convert kitchen waste to manure, waste segregation, use of plastic, etc are some of the areas for collaborative solutions. Solutions should value and consider existing practices and approaches in different communities. For example, we found some households already avoid plastic bags and use cloth carry bags to fetch articles. Other households collect the plastic bags to return them to the local vegetable vendor. Some households segregate organic, paper and plastic waste, and use organic waste for manure and cattle feed. This was overlooked by the municipal waste collectors, and they encouraged households to use single bins for throwing waste. This meant less work for the waste collector, but disregarded existing sustainable waste management practices in the community.

Setting up community bins in locations considered accessible and safe by community members, time of waste collection (in congruence with the working hours and availability of community members), waste disposal by small-scale commercial establishments like local food stalls, and frequency of waste bin replacement can be determined along with the community. Valuable insights and experiences in implementing the community-based solutions and training of waste collectors can be shared by the university using its considerable resources and modes of communication. The university can also work to fulfil the need to train waste collectors to understand current community practices.

10 Conclusion

The study concludes that power in knowledge generation, use and validation is skewed in favour of MUJ. This is seen is how the service-learning process is structured to benefit the students, and how information/data collected from the community and research findings are not shared back with them, even though universities possess significant resources to do so.

The research conducted by the MUJ Hub shows the academic's role in knowledge generation is considered primary. Though some academics do accept the ability and contribution of the community in generating knowledge, they find it difficult to embed it into the 'formal knowledge' system of the university without scientific validation. Community based research is gaining traction, but to make inroads into the wide-networked research and academic world, gradual enhancement in acceptance of local knowledge in tackling social problems is necessary (Hall & Tandon, 2017).

Knowledge intermediation by a community-based/civil society organisation that the community trusts to identify needs and priorities and support the co-creation process becomes helpful. In our research the support of MHT community facilitators and the community leaders trained by them was invaluable.

Though this initiative helped reduce the boundaries between the communities and MUJ (before this study, these communities were unaware of how MUJ could help them with waste management), the existence of a partnership between MUJ and these communities is missing. The communities remain unaware of the social responsibility role of universities like MUJ in solving their day-to-day problems.

There is a need to strengthen academics' capacity to encourage, promote, regulate and sustain research partnerships with the community. Given the static culture of universities and the longstanding tradition of independent scholarship, it is essential to ask whether universities are genuinely ready to contribute appropriately to initiatives that move away from a short-term charity model of community service to fulfil the potential of long-term social justice initiatives through community research collaborations (Marullo & Edwards, 2000; Ostrander, 2004).

It is evident from the study that as long as a consistent relationship is missing, the co-creation of knowledge is difficult and bridging knowledge cultures remains impossible. Sustainable partnership characterised by regular meetings and discussions between MUJ and its surrounding communities is vital to bridge the knowledge inequalities that exist.

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