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Supporting Real-time Peer-Mentoring of Rural Volunteers

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ABSTRACT

Telephone-driven community forums have been a widely proposed solution to address the unreliable internet connectivity and large geographic scope that characterizes many international NGO contexts. Primarily, these applications support asynchronous activities, such as information portals or forums to access rural journalism, but opportunities for real-time experience sharing remain largely under-explored. In this paper, we explore the potential of such forums to support remote mentoring of NGO volunteers, a practice that requires synchronous, dialogical formats for experience sharing and peer discussion. We engaged 28 participants from a rural Indian NGO in the design of peer-mentoring sessions that leverage synchronous audio discussions, using the structure and format of traditional talk-show radio as a starting point. The participants favored an entertaining approach to mentoring and discussed the logistics required to achieve this within their resource constraints. We conclude with design implications for designing media-driven community engagement platforms and the ethical challenges around protecting marginalized community interests.

CCS CONCEPTS

• **Human-centered computing** → **Human computer interaction (HCI)**; User studies; • **Applied computing** → *Collaborative learning*.

KEYWORDS

HCI4D; global south; international development; ICTD; mentoring; rural development; volunteers

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1 INTRODUCTION

Globally there are over 1 billion formal and informal volunteers [73], who enable NGOs to carry out their mandate of working towards socio-economic, political, and cultural change. These volunteers are of particular importance to NGOs that work in rural regions which are characterized by skill shortages and financial limitations. Thus, supporting the ongoing professional development (PD) of a workforce is of vital importance for effectiveness and retention of members. PD is a shorthand term that captures activities that individuals carry out in their workplace to maintain and improve their professional expertise [1, 3]. Organizations need to invest in PD to maintain high worker motivation and improving the efficacy of their work [1]. However this is only viable through regular engagements and reflections with peers and supervisors [16].

Organizations such as *Rural Action India (RAI)* that work with rural volunteers in South India face a dilemma in their desire to support their workers in professional development and applying training into practice. This training is often done through face-to-face training events. *RAI* have limited options as they are not able to bring their volunteers together for co-located events, as they are spread over vast distances in the southern states of India, ruling out regular face-to-face training events. Furthermore, in light of limited financial and time constraints, staff professional development is often not prioritized. This requirement for remote participation motivated us to explore how to support synchronous PD for *RAI* volunteers through an ongoing peer-mentoring format.

Within the geographical challenges and connectivity considerations, synchronous audio platforms, such as those built on the telephony infrastructure are particularly suited to address these requirements. Previously, Human-Computer Interaction (HCI) scholars [35, 76] have demonstrated the use of Interactive Voice Response (IVR) over telephony to ameliorate challenges faced in connecting rural communities, demonstrating their use in supporting synchronous audio-based group discussion. These platforms demonstrate that it is possible to support communities of interest in participating in structured group conversations (similar to a conference call).

We collaborated with RAI staff to conduct a workshop to understand the needs and aspirations of remote field-based volunteers in connecting to each other and take part in peer-discussions to make peer-mentoring possible. Through an ideation workshop conducted with RAI volunteers, we sought to explore key implications for the design of synchronous audio formats that support remote mentoring through peer-discussions. Rather than focusing on the technical infrastructure required for running ongoing audio shows, our work is instead committed to eliciting the preferences of volunteers around participation in established discussion show formats. Specifically, we did this by presenting mock formats (inspired from talk-show radio) of potential group audio participation. This enabled us to invite concrete critiques and suggestions from volunteers on these configurations and suggest alternatives.

This paper contributes to HCI's understanding of rural volunteers and their motivations in using voice technologies to increase community engagement through peer-discussion formats. Secondly, we discuss design implications for NGO practitioners and HCI researchers who build audio-enabled community engagement platforms when working with communities from resource-constrained settings.

2 RELATED WORK

2.1 Professional development and peer mentoring

Traditional conceptions of professional development emphasize formal courses or training units delivered by experts. However, the vision presented in the literature of PD, is not simply to impart knowledge, but to “prepare learners to know where (and to whom) to go for help” [2]. It takes into consideration the key role of *post-training support* i.e. supporting workers in implementing the skills they learn through training activities into practice, at a later point in time [77]. In this way, through participation in formal and informal activities, workers are not just passive recipients of knowledge but “active resources in the learning community” and are encouraged to develop responsibility for the creation of group knowledge [53]. The informal components of PD are essential: it is through this space that workers learn to ask their peers more targeted questions which take into account their shared context [33]. It is also about creating a learning environment where they learn about areas of unconscious incompetence [66]. Collaborative approaches to PD, through the use of study groups, coaching, and peer-mentoring have been shown to be effective modes of supporting meaningful development in the workforce [16], but are rarely applied within the NGO sector [77].

Of these, mentoring approaches to PD are considered the preferred method for junior staff [77]. Mentoring (both with experts and peers) provides a shared space for targeted worker discussions [33] that help participants gain competence and awareness in areas where they may have ‘unconscious incompetence’ [66]. Providing workers with access to mentoring relationships after training events “can greatly increase the likelihood that they will use what they learned in training” [62]. Importantly, these mentoring relationships are not just confined to a mentor-protégé arrangement where the (benevolent) mentor bestows knowledge upon the (grateful) protégé [60]. McLoughlin *et al.* notes the emergence of mentoring

models which consist of a “peer-based approach, in which there are partners of equal status” [47]. Hence, organizations should prioritize the creation of a social environment where training can be implemented through the support of fellow workers [2, 11] as the social environment at the workplace can “either inhibit or facilitate the use of what has been learned in training back on the job” [8]. Indeed, even in the most challenging work environments, research suggests that peer-support is a significant determinant on the successful transfer of training [46].

2.2 Supporting remote mentoring

Extended remote work can reduce short-term and long-term professional development opportunities such as mentoring, interpersonal networking and informal learning [16]. It is in such a context that remote mentoring, also known as *e-mentoring* emerged. E-mentoring describes mentoring relationships that are mediated by technology and are often “boundary-less, egalitarian, and qualitatively different than traditional in-person mentoring” [5]. Remote mentoring builds upon traditional co-located approaches [26] by supporting workers in participating in mentoring activities from wherever they are based. Workers and affiliates not based in a shared region can now benefit from organizational mentoring processes [50]. Even those in favor of traditional in-person mentoring processes concede that remote mentoring enables mentees to learn from a wider pool of experts, now that their options are not defined by geographical boundaries [69]. However, e-mail is the primary mode by which e-mentoring is discussed in the extant literature [34, 50]. Other practitioners have explored audio [69] and video [33] based mentoring platforms as viable options. Joshi *et al.* proposed *MicroMentor*, a video platform for experts to provide remote software assistance to mentees with short help requests [33]. Ferrer *et al.* [19] were motivated by the challenge of providing digitally-mediated training using mobile phones in humanitarian contexts characterized by limited internet connectivity.

Considering e-mentoring in light of challenges faced in Global South contexts presents fresh challenges for the development of e-mentoring approaches. Firstly, assumptions made by practitioners that high textual literacies is present among workers can be problematic. Secondly, many populations in the Global south utilize audio and visual modalities not simply due to lack of textual literacy, but due to a preference for mediums that better capture the richness of social interactions [44, 75]. Audio-visual formats in particular are more suited for rich interactions within a community of learners and are inclusive of diverse populations [32, 55, 63]. Thirdly, text-based mentoring through e-mail and online venues (e.g. online Q&A forums like StackOverflow [23]) are ill-suited for building deeper relationships between mentors and mentees, values which are important for any mentoring relationship [72]. Particularly for tasks of a problem-solving nature, multi-party real-time collaboration are needed for which synchronous media platforms are better suited [54]. Finally, inherent to many text-based approaches including email (which, incidentally, originate in Western European and North American contexts) is a drive to achieve efficiency in mentoring that is not a universal cultural value. In collectivist cultures, where shared working and rich social interactions are more

highly valued, remote mentoring needs to be real-time to utilize peer-feedback for knowledge construction [54].

2.3 Using synchronous audio for connecting communities

In areas where data connectivity is available (albeit in a limited capacity), mobile technologies provide opportunities for carrying out long-term professional development at scale [31]. Many existing audio communication platforms are available for regions connected to the internet (e.g. *Skype* and *Adobe Connect*), however, these are not always practical for rural populations in the Global South due to device and connectivity requirements. Instead, many regions rely solely on access to basic communication infrastructures such as broadcast radio or telephony [13], built on the powerful medium of audio (which is often preferred to text-based communication in many resource-constrained contexts [17, 48]). One notable example of this is *School of the Air*¹, correspondence schools for pupils from remote and outback Australia conducted using radio, telephone and limited internet use. Audio-driven technologies have a unique potential to address the speech-based requirements of marginalized and dispersed communities. Pioneering research has designed media-rich systems (emphasizing a non-textual interface) and empirically demonstrated the benefits of such over historic text-only approaches [17, 48, 67]. For example, using telephony systems have allowed low-literacy populations access to activities such as citizen journalism [49], grievance redress [45, 56], cultural archiving [76] and leisure [59]. When designing synchronous audio platforms, it is important to consider the roles that producers, hosts, guests and listeners play within the sessions facilitated through such platforms. This process, of structuring participation of stakeholders, is what we refer to as *scaffolding participation*. This is necessary for activities such as discussions involved in peer-mentoring, where invested parties have goals that they want to achieve through their participation, and to avoid disruptions due to unwanted interruptions [30]. To our knowledge, this is the first work that has looked at configuring peer-mentoring activities through synchronous audio.

We were inspired by existing audio dialog practices utilized in broadcast radio talk-shows and research around telephony platforms. Broadcast radio technology is the most commonly recognized platform delivering a synchronous audio experience, and though ubiquitous, broadcasters utilize a number of different formats for participant engagement depending on the purpose or ‘format’ of each show. Community radio is one such permutation, but is aimed at hyper-local contexts due to broadcasting limitations [14]. Synchronous telephony-based discussions are called ‘group phone calls’ or ‘conference calls’ in common parlance. While for the most part HCI researchers and practitioners have used telephony solely for asynchronous community engagements (such as the examples listed above), recent HCI scholarship has championed synchronous modalities for empowering rural populations [35]. Indeed, practitioners such as Kazakos *et al.* [35] have sought to explicitly style their telephony community engagements as *community radio* shows, a deliberate attempt to bring these two distinct entities together. While some have commented on the challenges of audience participation in these contexts [10], relatively little work

has explored the formats used within telephony ‘shows’ and the level of interaction afforded within the systems designed to support these practices [68], although some tried to address participation challenges by utilizing additional technologies (e.g. smartphones) to increase engagement [37]. Whether delivered through FM/AM airwaves or telephone cables, configuring participation in such spaces requires careful consideration of organizational context and politics [36].

3 STUDY DESIGN

Rural Action India (hereafter *RAI*), are a NGO based in South India who work with young people (18-25), training them for community volunteering roles. These participants are trained to enter schools and deliver awareness raising campaigns. As part of our collaboration with *RAI*, we wanted to take into account the culture, values and motivations of the local community [18] to design mentoring shows that would improve the participation experience and ownership of the shows among the target population. We conducted exploratory fieldwork with *RAI*, which involved the first author taking part in *RAI* meetings, training sessions and school visits over the course of two weeks. During the activities, we discussed their current approaches to training and mentoring with upper management and trainees. We also attended a youth boot-camp organized by *RAI* trainers, where the first author helped the trainers in their training activities observing current practice first hand.

The research was carried out collaboratively with *RAI* staff during a volunteer training workshop held by the organization over a period of two weeks. The project was granted full ethical approval by the institutional review board of the first author’s university. During the training event, our *RAI* contact briefed the participants about the collaboration with the research team, to design mentoring shows to support them, once they had left the training workshop, in their future volunteering. The research team then described the study in detail and stressed that participation in the study was voluntary and would not affect their training outcomes in the present event. Informed written consent was obtained from all participants before any activities were conducted. There were 28 participants (including young volunteers and junior staff) between the ages 18 and 25 (14 male and 14 female participants). Three trainers were involved in the training event (all male).

3.1 Activity 1: Taking part in mentoring shows

Before the training workshop, we worked together with the *trainers* to design three mock formats for the mentoring shows. These formats (expert-led conversation, facilitated discussion, and audience panel discussion) were drawn from three representative participation formats used in audio-driven community learning and discussion platforms.

After a short briefing about the structure of each mentoring show format, participants were recruited to play different roles required in the following three types of synchronous audio shows. For each of the shows, participants nominated individuals to play the roles of hosts, moderators and guests (according to the number and type of roles required for each format). The participants then took part in follow-up activities to critique aspects of this medium and how they expected this to work out in practice.

¹<https://www.australian-children.com/school-of-the-air>

3.1.1 Format 1: Expert-led conversation. The expert-led conversation is typical of mainstream radio talk shows. Hosts either share their own views or invite a guest with whom they dialogue. The conversation is chosen based on audience interest. However, there is limited direct interaction between the host/guest and their listening audiences. Increasingly, radio personalities use social media as a parallel channel to engage their audiences to dialogue about show content. Researchers in radio communications have argued that listeners to such programs “*have great trust in the personality hosting the program . . . gravitating to those whose judgment and knowledge they respect*” [4]. This is also similar to how community radio shows are commonly configured, where hosts engage with knowledgeable experts to provide “*timely and relevant information to people in the community*” [41]. These are considered participatory (despite the lack of direct audience interaction in the show) as the topics, show schedules, and guests are chosen through audience involvement at earlier stages in the production process. Listeners should not be considered “*passive and social isolates*” but rather as “*politically active, involved and knowledgeable*” [58]

Mentoring show format: One host and one guest were nominated by the participants to take part in a 30-minute conversation at the front of the room, while the other participants were sat around the room listening to the conversation. The topic for this show was about volunteer hobbies i.e. what participants did in their pastime. As a team-building activity, the host and guest chose to discuss their cooking interests as a way for other volunteers to get to know them better; they discussed the differences in cuisines of their respective state of origin.

3.1.2 Format 2: Facilitated discussion. In a facilitated discussion format, the host and guest initiate the conversation; however, audience questions shape the conversation’s direction. Hosts and callers have a rich conversation about potential discussion areas, and similar to *Format 1*, the topics for discussion and selection of show timings is usually based on audience preference. However, this format goes further in including audience members’ contributions within the show. Audiences are given the opportunity to call-in and selected callers’ questions or comments are discussed by the host and guest. This format is evident in shows such as *Sehaat Ki Vaani* [35], in which the authors designed IVR-supported shows run over a conference call to introduce information to rural Indian women about the management of Type 2 diabetes and maternal health. The audience were able to take turns in asking questions (and the host would filter the questions that were asked, and selectively put them forward to the health expert). On the other hand, Koradia *et al.* sought to augment community radio shows with increased audience participation by enabling hosts to speak to callers while broadcasting shows [38, 39].

Mentoring show format: One participant volunteered to be the host, and one of the trainers was nominated as the guest by the participants. They held a conversation about the trainer’s background in working with various social action initiatives across India. A second participant was nominated as a *moderator* who would source questions from participants in the room during the discussion and pass the questions to them (written down on paper) based on the moderator’s judgment about the question’s value.

3.1.3 Format 3: Audience panel discussion. The audience panel discussion is another common radio show format that gives show audiences more interaction opportunities with a pre-selected panel. The show content is dictated by panel members’ rich dialogues with audience members. These panel members usually share about their experiences with the topic under consideration, or are topic experts (e.g. health professionals). A host might be required to guide the conversation, handle disruptions, and facilitate coherent discussions between audience members and the panel. Such formats are useful for “*creating communication processes in which people in the community enter into dialogue and analytical discussion among themselves*” [24]. This can be part of a process in which local communities participate and decide among themselves the changes that are necessary to address local developmental challenges. Where possible, they can then address those challenges, either directly or through other stakeholders such as local governments and NGOs.

Mentoring show format: An open-ended panel discussion was held where the audience could join when they desired. A discussion was held by five nominated participants nominated by their peers (the panel); the topic chosen was about volunteerism in South India and how to promote a culture of social engagement in schools. Simulating a radio show environment, the panel members were sat in a different room, and they discussed via phone with the other room (where the phone was connected to speakers). Those in the room who wanted to ask questions were asked to take turns telephoning the panel.

3.2 Activity 2: Show critiques

The aim of the second set of activities were to better understand participant expectations and requirements of a real-time show. Participants were split into four teams for group work, and were asked to critique the different configurations of mentoring shows that they had taken part in. The purpose of this step was to enable participants to reflect and creatively think about adapting the mentoring shows to fit their requirements. Participants undertook five sub-activities in their groups.

- (1) **Creating an ideal format:** Brainstorming changes to mentoring shows formats and how to augment them. The participants were aware that only three formats had been present to them, and in this activity we encouraged them to think about combining different aspects of these shows, and in addition, bring in other ideas or format suggestions from their own previous experiences.
- (2) **Understanding audiences:** Discuss stakeholders (using a stakeholder map) and potential audiences for their shows. Questions of recruitment and logistics of how participants would be notified and join the shows were discussed within these activities.
- (3) **Developing Show content:** Imagining content for future shows that they would produce and deploy for ongoing peer-mentoring. Participants ideated several topics of interest to them for their professional growth.
- (4) **Deciding Show logistics:** Discussing aspects of running an ongoing show such as how frequently they would meet to produce the shows, how often would the shows be conducted, and the duration & themes for each session.

- (5) **Group Presentations:** In the final step, each team put together their responses to mini-activities 1-4 and presented to the entire workshop their rationale for the suggestions and critiques they had identified. They then received feedback first from their peers and then from the session facilitators.



Figure 1: Participants carrying out brainstorming for designing audio shows.

3.3 Data collection and analysis

After the design activities, we carried out focus group discussions [57] with each of the participant teams (abbreviated as *FGn*, where *n* represents the group number, from 1 to 4). Participants were encouraged to critique and comment on the each show format and reflect on their volunteering experiences to propose adjustments to show formats to better support peer-mentoring.

Discussions were audio-recorded and additional data in the form of design artifacts, show recordings, and researcher field notes were also collected. The first author took notes during the discussions recording details on who spoke, who was most dominant and other cues that would help during transcription and to enable the research team to get a good understanding of the focus group context. Discussions were carried out in English and Tamil (the languages used internally by *RAI*). We worked with *RAI* staff to translate and transcribe the discussions verbatim into English. Inductive coding [71] was then carried out to analyze the transcripts. An inductive approach helps to summarize a large corpus of raw research data and highlights links between research objectives and findings that emerge from the data [7, 64]. We assigned short codes to the data using NVivo after a familiarization step that involved repeatedly reading the entire dataset. Two researchers iteratively discussed and clarified the codes, which were merged to form four themes, as presented below.

4 FINDINGS

In line with our purpose to work with *RAI* volunteers in critiquing and ideating show formats, we focused our data analysis on participant motivations and aspirations for peer-mentoring. The themes that are listed below highlight the debates that emerged within the focus groups about their ideal show content, structure, and schedule.

4.1 Perceived benefits of using mentoring shows

The participants had traveled considerable distances to attend the training event: “around ten people in [this workshop] are from Trichy . . . there is a traveling distance of 8 hours” [FG 4]. For them, the inability to carry out real-time mentoring activities could be overcome through activities such as “using mentoring shows to engage immediately as live” [FG 4]. Participants appreciated this alternative to traditional approaches to mentoring where “we are forced to come and get together in some particular place” [FG 1]; an ordeal for participants in remote locations.

IVR has often positioned itself within the conventional community radio (CR) space. CR, however, is usually limited to areas of around 30km in radius, and immediately imposes restrictions on the potential reach of any engagement. A key benefit of mentoring through processes modeled on mentoring shows is its ability to connect participants who are dispersed across a region spanning hundreds of kilometers. In traditional mentoring contexts, “place and timings [are] not always comfortable” for rural participants [FG 1]. However, when delivered through mentoring shows format, mentoring “is comfortable in all places and times, for all persons” [FG 1]. A common aspiration among community radio practitioners is to treat their listeners as active participants and not just as subjects to be educated or persuaded to consume [9]. This aspiration is also shared by NGOs who value participant involvement in mentoring activities. In addition to not requiring participants to be spatially present during mentoring events, they could also engage in mentoring while doing other activities, similar to how commercial radio broadcasts are used conventionally: “we [can be] hearing the mentoring shows when we are traveling . . . we can hear new ideas and thoughts” [FG 1].

Secondly, audio communication was one of the major ways the participants engaged each other and members of their rural communities in social action, and thus mentoring shows would fit in with their current working practices which were audio-reliant: “In WhatsApp, we are already doing voice notes, based on social issues” [FG 3]. In the discussions with participants, social media platforms were repeatedly referenced and seen as the benchmark for peer-to-peer communication. However, social media platforms have their own limitations as a tool for volunteers to amplify their voice: “they are using WhatsApp and Facebook more. They keep themselves entertained but do not know how much effort is needed to solve the problems in our nation, that is the problem” [FG 3].

Platforms such as mentoring shows go beyond the mundane conversations that are a mainstay in their everyday use of technology for private communication, and offer potential to tease out greater social engagement from youth, especially in under-resourced regions. Indeed, the reflections on this issue revolved around the seeming impossibility of carrying out any other form of digital engagement in rural locations in which they work where even broadcast radio is still not available. Some participants who were from rural contexts, argued that “we do not have a radio in some rural areas or in unreachable areas, we do not have any radio facility. They have a cell phone, but they do not have the radio” [FG 3]. Others who had access to radio, chimed in, reflecting on their younger days when listening to community and broadcast radio was a regular

part of life: “when we were children, we always sat in front of the radio” [FG 3]. They envisioned radio as a naturally accessible way to reach the next generation within rural contexts.

Finally, rural women are particularly affected by the barriers of place-based mentoring; using processes like mentoring shows affords them opportunities to learn despite local and cultural challenges: “for women who are not going to many places, who have restrictions, about going to this place or that place. So for audio it is in the home also it can be heard, so it is useful” [FG 1]. Opportunities were also highlighted for engaging youth in schools that they work in, again, often based in remote areas. They conceptualized two types of audience members: *listening audience* and *active audience* members. While stakeholders such as school children they work with were characterized as listening audiences, the participants that work with those schools could take an active audience role as panel members in the mentoring shows. Since IVR technologies only require basic telephony infrastructure, which are present “in many schools, we can contact them and inform them that we are coming to the area” [FG 4]. Thus, “mentoring shows will be helpful for us as a volunteer, as a youth panel member from one place to another” [FG 4], connecting the participants with each other and with the school networks where they work.

4.2 Tactics to maximize engagement

It was perceived that the use of real-time audio could also enable participants to target other audience groups for the mentoring shows, such as potential volunteers (who had not yet received training). The participants also found themselves enjoying the experience of taking part in mock shows: “I thought like I was really in a radio station, and I enjoyed a lot” [FG 3]. Across the board, *Format 3* was chosen by most participants as their preferred mentoring shows format. The reason they offered for selecting this format was its flexibility to accommodate diverse opinions from audience members: “some person is asking the same question, so everyone is answering in their view, so that gives a larger picture to see a single concept” [FG 1]. The fact that audience questions and panelists’ responses were free-flowing was noted and appreciated by participants: “many students are asking questions . . . and the guest’s question is suddenly answered, so it is very nice” [FG 1]. The format allows for more significant interaction for participants who are involved in producing the show and also those who are consuming the produced content and engaging as listeners. In other words, everyone gets to take part, and the distinctions between host and audience are reduced.

On the other hand, in *Format 1* and *Format 2*, which are centered around conversations dominated by the hosts, more interest was expressed in allowing multiple viewpoints to emerge, which would allow mentoring shows stakeholders to see expressions of social action engagement in all their complexity. Even though a discussion-based show has the potential to be repetitive unless carefully managed, participants expressed the opinion that it would still create opportunities for the creation of useful content. Indeed, in the case of *Format 2*, the participants’ questions were felt to be mismanaged by the show assistant who was tasked with filtering the questions resulting in participant questions being misunderstood by the host, which caused much frustration for the listeners.

Format 2, which was introduced to find an intermediary approach to utilizing participation and knowledge dissemination, was critiqued for its inefficiency. The participants noticed that “only a few questions were raised through paper” [FG 1] and mentioned in no uncertain terms that as opposed to going through an intermediary, “they prefer to ask individually and ask [more] questions” [FG 1]. At other times, the intermediary’s abilities to comprehend and filter audience questions were called into question: “sometimes which questions we are giving, they perceive it another way, and they will ask another question” [FG 2]. *Format 2* host’s perspective was just as negative as they commented on their experience thus: “having two persons interacting only with themselves is very difficult, because I experienced that yesterday!” [FG 4]. Similarly, participants viewed the one-directional nature of *Format 1* as boring and uninteresting, “we cannot ask any question in Show number 1, so we [have] to just listen to the show. The conversation between the host and the [guest] is nice, but it gets boring” [FG 2]. To just listen, is seen as a negative aspect of traditional radio consumption practices, where the audience members have a limited role to play.

Commenting on the ability of *Format 1*’s host to manage the show, the participants commented that: “she is also getting boring and the audience is also getting bored, so that show . . . I enjoyed that, but it is just boring.” [FG 2]. The fault lay with the format, they argued, and not exclusively with the host or the topics chosen: “They are not bored because of the topic, if I took another topic like unemployment or women empowerment, then the people will get bored through that topic [too]” [FG 2]. The participants saw this as a persistent issue with low-interaction shows. This issue would be further exacerbated in future deployments of mentoring shows, if they were delivered in traditional show lengths: “but in the FM shows it will be 1 hour no? So it will get boring” [FG 2]. The non-interaction of audience members is perceived as listener exclusion (particularly in *Format 1* which is a one-way information-flow session).

4.2.1 Leveraging the role of radio personalities. Through participation in RAI activities, it was envisaged that their broader pool of volunteers would feel intrinsically motivated to contribute, as their volunteer identity would be cemented within the community: “we can seek help from volunteers and ask them about their views and ideas. So that makes the volunteers also satisfied; they feel that their contributions are also included in that. That is the main thing for me” [FG 4]. They foresaw that one of the reasons volunteers would be motivated by mentoring shows lay in its ability to make contributors equivalent to radio personalities, guaranteeing fame and recognition: “they will be interested because their voices will be heard by everyone. If it was a usual message [on social media], then you will get a normal [reaction] only in speaking and recording their voice” [FG 3]. The mentoring shows could thus be useful for organizational recruitment drives as well, as it takes into account volunteer identity and motivation. Not only does the organization benefit by being able to utilize volunteer contributions, volunteers are potentially empowered in their individual pursuits and aspirations.

Furthermore, the notions they held around fame and its utility as a motivation for engaging with mentoring shows also extended to other parts of the show. Participants recommended the inclusion

of subject matter experts and celebrities from the local area. Participants, however, were divided on how to include them within their programming, particular since their focus was on development challenges in the local grassroots context. Some believed that well-known personalities would aid their cause: *“Political or any type . . . if a celebrity promotes something good, then people will follow. But if a volunteer says something, people might not listen”* [FG 4]. This strategy was ultimately for the benefit of the show and the message of the organization: *“if many will follow them . . . we are able to capture [sic] them”* [FG 4]. The celebrities were thus a means to an end, to draw people to the show and *capture* them to the status of regular show listeners. Furthermore, the practicalities of getting regular (or one-off) celebrity contributions were also noted: *“it is a very big challenge, to call a celebrity as a resource person”* [FG 4]. These discussions highlight a core tension in the way in which mentoring shows is both an engaging concept, but furthermore introduces its own set of expectations around show engagement requirements.

4.3 Debating mentoring shows logistics

Participants were particularly concerned about the show’s ability to thrive long-term. The participants revealed a sophisticated model in their understanding of potential audiences, and were able to ideate strategies to respond appropriately to audience needs in order to ensure sustainability in maintaining their audience base.

4.3.1 Balancing host and listener needs. The awareness that more frequent mentoring shows meant more preparatory work convinced the participants that a lightweight frequency was to be preferred. *“It feels like homework . . . For one hour show, we have to prepare more than 2 hours to perfect”* [FG 4]. Deciding on a less frequent schedule meant that they could consistently achieve their aims: *“A small success will give us the energy on how to achieve more”* [FG 3]. Another participant noted, *“Only now have I realized that even a 1-hour show takes so much effort and how many hours it takes to prepare for that show”* [FG 3]. Taking part in the design activity made the participants aware that organizing and maintaining an ongoing mentoring activity was not a small undertaking.

By creating anticipation for the show, hopes are expressed that it may even aid as a promotional strategy in attracting a bigger audience. However, none of the groups was able to agree on show timings. Each group suggested different times through their design activity outputs. Repeatedly, finding a show time that would maximize audience turnout emerged as a core requirement of the participants in decisions they made about the show, such as show timing: *“we should first make a ‘which time they are free’ [survey], how to enable maximum participation, that time we should reach for it”* [FG 1]. Carrying out surveys were considered necessary by this group to find out ideal times for conducting mentoring shows. This was due to the varied responses this topic generated within the focus group. However, even without further inquiry, participants were aware that there were some rules to follow when selecting slots for the mentoring shows: *“if we conduct a weekend program then no people will listen . . . If we conduct on weekdays there may be a possibility, some people will listen”* [FG 1]. Furthermore, they preferred to maintain their core base of listeners through regular communication as well: *“regular listeners . . . we have to inform them*

about our shows that are coming up, so tell them ‘get ready for the program’. So we have to promote them” [FG 4].

It is thus evident that the main reason for choosing a particular frequency and timing was not decided by the amount and type of mentorship required desired by the participants, but by the perceived audience interest. It was important to the participants that their show should be appreciated by others, and the hallmark of this was the engagement levels of their audience. The corollary is that losing audience interest was perceived to be highly undesirable and increasing their audience each week was highlighted as the ideal.

4.3.2 Sophisticated model for reaching ‘audiences’. Drawing upon their experiences of being an audience, participants were able to shape their own discussions about how to design mentoring show schedules that could maximize their content’s value and attract sizable ‘audiences’. A number of participants wanted the shows to be entertaining and put forward various suggestions on how this could be done. One focus group had a lively conversation around how they were worried that there would be high levels of interest in the first few weeks which would be difficult to sustain in subsequent weeks. They presented suggestions for making their shows engaging, which included utilizing a variety of activities such as motivational songs, general knowledge questions, quizzes, giveaways and debates. The rationale that one participant offered for this view was: *“although we are not handling a fun show or entertainment show, and we are hosting a community-based or social show but we still have to maintain and handle the audience”* [FG 4]. They saw this as essential to ensuring that they attracted a sizable audience.

Since the primary audience for the shows were other volunteers, and the purpose of the show was to provide peer mentoring and support to each other, the emergence of an entertaining format as a key design requirement was a surprising finding. After all, listeners engage more when they respect rather than (merely) like the hosts and the show [61]. However, a tension can be seen emerging from some participants’ desire to appear serious (about their work input) and yet being lighthearted and entertaining (to attract an audience, who would presumably not be as engaged if the shows were ‘serious’). Perhaps, this is an empathetic course of action, as the participants understood that many of their peers would not listen to a show that was not entertaining, and thus they desired to put forth a likable show for each other.

4.3.3 Discussing financial models. Participants also had a variety of ideas on how to fund and maintain the show in the long run. Inspired by commercial radio practices, they suggested that sponsorship of segments or the whole show could be a viable financial model for resourcing the show. The concern for the shows’ sustainability prompted this discussion: *“[if] it started today, it should be continued, that is the main reason. If it stopped means, then your work only will be forgotten”* [FG 3]. All their work towards the creation of a successful show would be undermined by a short-lived project if there wasn’t a robust financial model in place.

The sponsorship of the show would be brought in during advertisement segments. In line with the views that they expressed about show quality and attractiveness, they desired that the adverts should also be catchy, suggesting that jingles (advertises in song

format) be utilized to good effect: *“when hearing on audio we cannot easily capture [ads] while putting it to songs it is nice though”* [FG 2]. The detailed conversations around funding that the participants took part in was surprising to RAI staff and the research team. However, it can be seen as emblematic of their investment in the success of the mentoring shows. An alternative means of fundraising, according to one focus group discussion, was through local crowdfunding e.g. asking friends, families and local institutions for support: *“I can meet many of them so that they can able to join in this. So if I am taking a small village or school, they can join with me, through crowdfunding”* [FG 2]. Participants actively thought through the aspects of funding and maintaining shows in the long term through the involvement of stakeholders in the broader community in raising support for volunteering activities.

4.4 Creating new spaces for social action

The range of digital technologies that the organization uses are determined by the inherent appeal they have to youth (their target audience). Presently, RAI uses social platforms to coordinate and collaborate with the participants and help them plan their activities: *“to keep in touch with contacts . . . to know what is the next day’s plans, which institute we have to go . . . [to conduct sessions]”* [FG 3]. Participants reflected that utilizing entertaining messaging was an important part of using social media platforms, as *“through that entertainment we also get important points”* [FG 2]. These twin aspects of social media (entertainment and engagement) are not replaced by a mentoring shows driven approach. Yet, as we have demonstrated already, both these aspects would heavily influence their aspirations for mentoring shows design.

The participants gave an example of how these myriad technologies could work together, in how they could use mentoring shows in the context of mentoring workshops that they took part in, augmenting the active role that social media platforms often played. *“We can... record the mentoring... and assess how the programs have gone. Through the shows, we can give awareness, the staff & volunteers can get to know the information and the way, how they can train the village people or the community. So the mentoring shows can help to communicate after the [mentoring event]”* [FG 2].

In this scenario, the use of mentoring shows helps to document every aspect of the mentoring and capture shareable media from mentoring activities, which can be distributed to non-attendees. Furthermore, they wanted to be involved in mentoring quality monitoring. In summary, mentoring shows’ strength doesn’t lie in re-creating functionality already possible through other channels, but in serving (i) as an essential documentation tool for their mentoring events; (ii) the curated recordings from such events to audiences further afield. The outputs of mentoring shows can then be repackaged *“through social media we can continue the mentoring to other people . . . [by] uploading under the RAI Facebook page”* [FG 2]. Mentoring shows support such processes by helping create artifacts that can be used in a variety of distribution formats (e.g. podcasts), helping participants capture and share *“what we learned in the mentoring programs through [mentoring shows] so that we can continue the mentoring sessions”* [FG 2].

Additionally, social media platforms have been used extensively for raising “social awareness”, as it allows the participants to “enjoy

themselves and keep themselves entertained” while involved in social action [FG 3]. Nevertheless, the participants critiqued over-reliance on social media for this purpose, as they complained that *“apart from social awareness, they do not know how . . . How much effort is needed to solve the problems in our nation, that is the problem”* [FG 3]. Solely relying on social media for their engagement strategy could lead to an engaged citizenry who are nevertheless not socially mobilized. In other words, social awareness does not necessarily translate into social action.

The recorded outputs of the mentoring shows could also be used to engage informal volunteers and non-attendees who are interested in the work of the organization. This is a particular benefit if the staff members of the organization want to avoid repetitive presentations in places they visit: by using a mentoring shows setup they can *“produce the recap”* of the activities previously conducted [FG 1]. This is particularly useful for RAI participants as they have to visit several institutions each day to carry out youth engagement, and they may not have enough time to carry out all the activities within their allocated time (often, participants are only given one school period, which typically lasts 60 minutes).

“Many young people are very interested in being involved in volunteering activities, but they do not know how, where to contact anyone... we have to focus on young people, to use and access the shows” [FG 3]. The participants were confident that with the aid of mentoring shows, they can help raise the profile of volunteerism among the communities in which they are based, in addition to recruiting additional volunteers for their respective organizational causes. Reflecting on potential audiences, they would engage with; some noted that *“most of them are not familiar with [local] NGOs”* [FG 2]. They were excited by the possibility that mentoring shows represented an opportunity to engage communities in social action and volunteerism so that they can be reached and given concrete opportunities for involvement in local development.

4.4.1 Opportunity to receive media skills training. The participants also discussed the practical skills required to initiate and maintain organizational activities through mentoring shows. The skills required to conduct mentoring shows were thought to be off-limits to remote populations like themselves. They added that by *“hosting mentoring shows they will also get well trained for their career... and it helps in volunteerism as well”* [FG 4]. In addition, the media training required for hosting was stressed as essential to a successful mentoring shows experience for the production team and for listeners. The participants opined that without sufficient training, the hosts *“will feel difficulty in expressing their ideas . . . even when they have the concept, and they know what to say”* [FG 1]. The participants understood that media training in this instance included technical skills as well as communication and journalism skills. Going further, another group commented on their expectations of the training they would receive, and the need to be well prepared: *“when sitting in front of the resource person, there will be some shaking. So the shaking should be reduced, for that, we have to work more, we have to practice more. Then we will have less fear”* [FG 4].

Ultimately, the participants stressed, intensive training and personal development are necessary because the host’s performance is directly linked to how well the show performs: *“Almost 50% of the success of this show is in the hands of the host”* [FG 4]. The

emphasis on training hosts served the dual purpose of enhancing participant skills and more importantly for them, increased listener engagement. The hosts' fluency is also essential to the success of the show, as *"the fluency of the host will attract the audience to the show"* [FG 4]. The participants were not fazed that initially there would be challenges to overcome as the participants who would host shows confront their own lack of media literacy. However, after acknowledging this aspect, they were determined to overcome these challenges with sufficient practice. The nature of practice was described in precise detail so that when they do the final interviews with guests on their mentoring shows, they would be well prepared. *"We have to practice ourselves in front of a mirror . . . practice the way of sitting, speaking, giving talks. Everything should be learned before interviews [FG 4]"*. They were also self-conscious that the synchronous nature of the show might put themselves and fellow participants under pressure to make high-quality contributions on the spot. For instance, if they paused for too long, *"in case we have to think, we take up too much time"* [FG 1]. Thus, they were conscious of designing strategies to support participants in speaking confidently and fluently on-air without taking too much time.

5 DISCUSSION

When considered alongside current debates around structuring meaningful participation, our findings reveal novel insights for HCI researchers. These insights apply to the design of audio systems for participation of dispersed communities.

5.1 Designing for peer-mentoring as entertainment

Simply having the opportunity to access a learning and sharing platform was not considered a self-sufficient motive. The participants discussed various strategies to ensure that they would be able to attract and maintain their membership base and ongoing contributions. Rather forcefully, one participant argued: *"without the audience, we are nothing"*. Many participants were inspired by the role that radio personalities play in traditional broadcast radio and sought to introduce such roles within the peer mentoring program. This highlights how the participants were able to draw on their media consumption preferences (and the lack of participation that was present in previous mentoring processes) and use those to shape their future mentoring show production process. They felt that making entertaining shows was the best way to share knowledge, for example, by utilizing humor and alternative modes of presentation to share content.

This also represented a tension for our engagement with the participants. The research team were initially motivated by our collaboration with the NGO staff to explore effective formats for remote mentoring shows. However, the participants focused their discussion on the content and style of the shows (e.g. discussing how to make it entertaining, and how to bring on board local celebrities). Our participants were not content to merely *participate* in the production of the mentoring shows: they expressed clear preferences for the style and 'feel' of the mentoring shows they would want to take part in. It was equally evident that participants felt that any audio outputs they created needed to be entertaining first and informative second.

Many researchers working in development contexts have found that systems built for community learning are adopted by community members for their own creative purposes that are more meaningful to them. Communities subvert expectations by using platforms to share song recordings, religious verses and other performances [49, 59]. As HCI researchers, at the outset of projects, we recognize the importance of incorporating human values such as community, privacy and autonomy [21]. Such prioritization has been especially foregrounded through value-driven approaches like *Values in Design* [22] and *Value Sensitive Design* [25, 74]. Through these approaches, designers can aspire to build in values dear to the eventual users, from the onset of the design process. In this way, we ensure systems are not just designed around purely instrumental concerns such as efficiency and expenditure.

When it comes to working with marginalized communities, we should explicitly build in evocative and emotionally-rich processes within communication and discussion strategies [40]. Indeed, such an approach recognizes the emotions and motivations involved in human experience, where entertainment is not simply a means for hedonic pleasure, but in addition, serves other aspects necessary for human flourishing such as the search for truth and meaning [52]. Proponents of *ludic design* forcefully argue for playful or ludic activities can promote engagement in the production of meaning [65]. In under-resourced settings, ludic design can help designers in not being surprised by user demand for play in the way systems designed for them are subverted by them [12].

More specifically for our volunteers' context, group discussions and communal learning approaches can be highly effective when they effectively utilizes the *affective domain*, as previous studies have shown [6, 70]. The importance of affect can also be seen in *edutainment* approaches [42], which aim to revolutionize learning through a mixture of collaborative learning and enjoyment. The assumption made by edutainment practitioners is that enjoyment is central to an engaging learning experience. While historical perspectives have tended to associate this finding with children's learning, adults benefit just as much from an intentional learning focus on fun and enjoyment [43]. This has led [43] to state that *"having fun and experiencing enjoyment are proven ways to build a socially connected learning environment"* for adults. HCI researchers should actively seek to include community values of entertainment in synchronous audio systems that they design to foster participation. It is important to see this as more than just an acknowledgment of people's desire for entertainment [12]. In other words, as part of requirements gathering and design processes, researchers should seek to explicitly understand under-explored elements of human experience; seeking to understand how culturally appropriate values (e.g. entertainment, fun, and humor) can be incorporated into community engagements.

5.2 Designing for data privacy in public discussions

Many of our participants saw technology's potential to transform civic engagement and interactions [79] through the ability to share their voices to mentor their peers, and opening up spaces for expression, in particular, for female participants who were restricted in their mobility. From the perspective of the participants, they

prioritized an ability to share their voice freely with minimal effort above other concerns. This aligns with a common conception of technology in third-sector organizations, where technology is viewed as a neutral platform for efficiently engaging community members with limited resources [79].

To our surprise, participants expressed no privacy reservations about how their voice could be misused by others or whether their contributions could be taken out of context. This might be explained by shortcomings in participant awareness around data justice and data literacy, particularly in the use of media platforms [29].

A key consideration that emerges here is that when working with marginalized community groups, we need to actively build in processes to engage participants in data issues; it is not enough to simply debrief participants during the design phase. This is particularly important when considering how content produced in these processes might potentially be used by the wider community of stakeholders (e.g. re-use for training elsewhere). It's not enough to just discuss relevant data literacy issues in the design phase, but in addition we need to actively design around them and build them into our design processes. This might involve discussions with local representatives and NGOs about the long-term implications of data capture and use. Crucially, we might have to do this even if it may not be a topic of interest to the collaborators or communities, in order to equip participants with critical skills to identify potential data privacy and safety issues in future. Such initiatives cannot be considered optional when we consider the social injustices that are introduced when people are politically misrepresented, which in turn renders them democratically voiceless [15, 20]. We (the research team) introduced the technology space according to standard practice within HCI: describing audio-visual media as a potentially suitable way to enable more engaging and richer forms of volunteer mentoring, and we had also presented previous examples of audio platforms used for community discussions. In doing so, we had also acknowledged limitations of our approaches and addressed any concerns they had.

The participants did not recognize that audio platforms could also be used to effectively monitor the delivery of volunteering by the participant and could potentially be used by management to maintain a catalog of volunteering actions and experiences. In other words, technology that is used for volunteer peer-mentoring could also be used (unintentionally) for performance monitoring of volunteers through data such as records of volunteer attendance and contributions on the peer-mentoring shows. Even an empowering approach such as a real-time audio platform could also potentially be a tool for increased supervisory control, whereby participation becomes a mode of control, and participatory systems could be co-opted to evaluate volunteer performance and used to decide on allocation of more lucrative opportunities to volunteers. There are numerous ethical dimensions that remain under-explored in the use of technology within the mentoring and organizational learning contexts.

Thus, we are conscious that any future attempts to deploy mentoring in this form need to be preceded by discussions with volunteers and the NGO management about what records (if any) are kept and how analytics data will be de-identified to ensure volunteers are not identified and discriminated against for non-participation

in mentoring shows. To introduce genuine dialogue and to value participation in mentoring and peer-learning programs, HCI researchers need to stress the importance of a robust conversation between stakeholders about ethical considerations. Design methods introduced without this commitment may become self-defeating if organizations only involve their members in instrumental ways [27, 28]. As part of project configurations with marginalized communities, HCI researchers should describe the fine balance between benign and intrusive monitoring methods in NGOs and community groups [80]. HCI researchers have a responsibility to the population groups that they work with, in line with the broader ethical commitment to *do no harm*. Specifically, researchers should proactively protect the interests of marginalized groups, whether or not those groups raise concerns about data privacy.

5.3 Setting expectations for participation

Another aspect to consider here is that regardless of their comfort with voice technologies, many volunteers might not have previous experience sharing feedback, synthesizing and summarizing opinions. Making insightful contributions within talk radio formats requires in-depth, synthetic thinking skills [78], a skill-set acquired over time. The participants were comfortable with the real-time audio approach as can be seen by their eagerness to take part in shows and generate ideas for future sessions. Further investigation is required to understand potential barriers to effective participation in the discussions. This is compounded by the fact that volunteers in Global south contexts face immense pressure to deliver targets with limited resources. NGO staff have a lot of other (more pressing) responsibilities within the challenging environments in which they work.

Indeed, peer-mentoring does not necessarily need to be highly participatory, and can also be conceived through a motivation for an efficient and effective organizational structure for learning. That is, a motivation to create a single point of connection on an ongoing basis. In that case, minimal overheads would be required to enable all their volunteers, spread out over considerable distances, to reflect together on a regular basis about volunteer challenges and opportunities. However, processes that require high levels of engagement from NGO workers, are only possible when an organization has highly motivated participants [51]. Where volunteers are given creative freedom, and not just valued as human resources to fulfill pressing organizational tasks, volunteers are able to expend extra time and energy into social interaction with others. This particularly enriches activities like mentorship or peer-learning.

Nonetheless, such a valuation of time (at the expense of efficiency) is in tension with a desire to meet the needs of diverse volunteers and varying levels of interest in the task at hand. Naquin *et al.* [51] urge employers that they “*must consider how to work with individuals who are not predisposed to be motivated to improve work through learning*”. Our participants were highly desirous to design and take part in peer-discussions as long as they were able to shape the interactions to their own context. Their preferences were evident in how they gave primacy to shared and rich interactions with each other over simply gathering together through an efficient organizational structure. While NGOs and communities

members recognize the potential of technologies and digital media to support them in addressing the local challenges they face, for NGOs with limited resources, the costs of participation and designing rich social interactions in activities like mentoring (in terms of work-hours of their volunteers and staff) can be costly. Thus, we acknowledge that the processes put forward by our participants could prove burdensome to other groups with which RAI works with.

This has a number of design implications relating to the importance of setting clear, mutually-agreed expectations for community participation in order not to burden participants. We see three possibilities here to reduce the dangers of *over*-participation. Firstly, participants could create individually tailored expectations, i.e. allowing participants to voluntarily agree upon roles and commitments with which they are comfortable. Secondly, we can design processes with transience in mind i.e. stressing that processes will carry on as long as certain other variables are met. For instance, as long as a committed group of participants who are willing to commit their time/skills are present. Finally, risk management strategies should be prepared i.e. planning for resource gaps in structured participation due to unforeseen circumstances such as volunteer drop-out. When planning for long-term participation structures (like ongoing mentoring shows), if particular shows rely on particular participants fulfilling essential duties, unreliable participants can increase the load on other participants. Thus, the initial planning stages need to consider how design can incorporate risk planning and mitigation.

6 CONCLUSIONS

Historically, audio systems have been used to connect rural communities with one another, whether through conventional broadcast radio or through more recent efforts enabled by conference call technologies. Drawing inspiration from the structures used within these systems to engender participation, we describe a workshop carried out with 28 rural volunteers from a South Indian NGO to design participatory mentoring shows to enable ongoing peer-mentoring. Our findings suggest that participants sought to maximize participation within peer-mentoring shows, and drew on their familiarity with broadcast radio metaphors to purposefully design shows that were not boring. We conclude with implications for HCI researchers including the importance of utilizing under-explored human values such as humor and fun, alongside the need for discussing data literacy with marginalized communities. These implications can inform designers of community media processes who collaborate with community groups and NGOs in underserved contexts².

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²in two-column ACM-Small format this paper is 9.75 pages

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