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Scaffolding Young People's Participation in Public Service Evaluation through Designing a Digital Feedback Process

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Young people facing marginalisation often rely on publicly funded services for support. Such services must include users in improving their provision, but often lack the processes and tools to facilitate this. The civic turn within HCI means that we are still tackling the complexities of community-based design research required to provide digital tools of relevance to public services. To address this, we worked with groups of young people to explore the design of a service evaluation process, supported by digital resources, intended to support marginalised youths to influence service delivery. Our findings demonstrate how the groups of young people participating in processes of service evaluation using our digital tools embraced the opportunity to express themselves. We also identify tensions from the social values underpinning the youth voluntary sector that impede their participation. We close by discussing challenges for community-based design and implications for digital technologies that facilitate the participation of marginalised young people in civic processes.

CCS CONCEPTS •Human-centered computing~Human computer interaction (HCI)~Empirical studies in HCI

Additional Keywords and Phrases: Digital civics, User participation, Participatory community-based research, Marginalised youth, Public services, Digital Feedback

1 Introduction

In many countries, a lack of investment in public services increasingly leads to the exclusion of vulnerable or marginalised young people. In England, a period of austerity politics has led to social care and community-based advice and support services being neglected [44]. Such services are essential for supporting certain individuals to participate in

society in meaningful and fulfilling ways. Marginalised youth in particular face significant barriers in accessing certain types of public and community service, with entire youth departments within local government being forced to close. As a result, it is more important than ever that the remaining provision addresses specific peoples' needs and publicly funded organisations are increasingly seeking ways to do this better [48]. Indeed, much public funding now comes with the stipulation to demonstrate user engagement [58]. In this work we explore a youth-led service evaluation process, as a means to start addressing some of these concerns.

In the field of HCI, research into social media use and recommender systems has shown the value of community driven platforms for creating resources of use to communities [1,15]. Prior research has also explored the design and use of bespoke technologies in relation to engaging citizens in shaping public service provision [18], as well as addressing the domains of health and care services [21], in some cases unearthing a richer picture of local service offerings [4] while helping to identify gaps in provision [17]. This is part of a growing body of civically oriented work, digital civics [40], emphasising the participation of citizens in civic technology design, exploring digitally supported inclusion in civic life [2,10,16,36], and creating new opportunities for local communities to come together and organise around local and civic assets [14]. An extreme example of this is the exploration of a TripAdvisor-style approach to the delivery of disability services [34]. As a result, scholarship within digital civics has often been concerned with investigating the qualities required of community-based design work to ensure that it is responsibly carried out and underpinned by the values of trust [12], care [47] and authenticity [50].

Building on the above, our research set out to understand and explore the ways in which participatory processes and digital technologies might support young people to evaluate and shape the design of publicly funded services they use. Our research was conducted with young people that find themselves facing marginalisation either through having a disability or being perceived as vulnerable and eligible for the receipt of social care services. This included young people with special educational needs (SENs) or physical disabilities, as well as those acting as carers for family members or experiencing material deprivation. Common to these groups is their reliance on public service provision, and the support of mentors or group leaders to access provision. We worked with three youth advocacy organisations who were forming groups of young ambassadors, young people brought together by a city council to be advocates on behalf of their peers. These groups were formed to support the young people involved to develop their skills and confidence, and to provide an opportunity for them to evaluate services and spread the word about service provision relevant to their peers. Together with our project partners we mounted a community-based research study guided by the following research questions:

RQ1: What is the role of technology in supporting participatory processes for marginalised youth?

RQ2: What are the challenges and opportunities for digital tools designed to support participation in service evaluation?

To explore these research questions, we carried out a qualitative study spanning 20 months involving three different groups of young ambassadors. Working with these groups, we explored the challenges and opportunities for youth inclusion in service evaluation; investigated a digitally enabled service evaluation process using a series of co-designed digital tools and; evaluated the efficacy of digital reports, comprising a range of digital media, which were shared with service providers. Our findings demonstrate how simple digital systems can foster inclusion of marginalised young people in processes of service evaluation that have traditionally been opaque, or of little interest, to them. Moreover, we highlight that there are benefits for young people's agency and ability to be critical of services while at the same time generating ideas for change. We also highlight ongoing contextual challenges to meaningfully involving young people, and citizens in general, in service evaluation and civic decision-making processes.

We contribute to the growing body of literature in HCI concerned with civically oriented digital technology in three ways: (i) we report a situated, empirical study comprising rich and nuanced insights into the role of technology in supporting participatory processes of evidence collection and advocacy for marginalised youth in the context of service evaluation; (ii) we build on existing scholarship seeking to increase the involvement of young people in civic processes; (iii) we highlight contradictions in the social values held by youth sector organisations that create barriers for the participation of disenfranchised groups.

2 Background

Within public sector service provision, there has for some time been an emphasis placed on ensuring service users play a central role in the development and commissioning of services [22]. In England, there is now government policy stating that those who regularly use certain public services should be consulted in order to determine the form that service provision should take [58]. This ethos of service user involvement is not one that is particular to the UK, similar approaches can be found globally [3] and are endorsed by the World Health Organisation [54].

Vulnerable and marginalised young people often rely on public services to develop skills, maintain autonomy and support their health and care needs. However, cuts to social care budgets mean that access to appropriate provision can be limited and the contraction of state service provision has led to the closure of youth departments within councils [56]. Local governments must therefore rely more on external organisations to deliver youth services. As a result, public services in the UK are delivered across a wide range of organisations – some provided by reduced state departments and local councils, some provided by charities and voluntary and care sector organisations (VCOs), while others are provided by community groups.

This patchwork of service delivery means that provision of services that support young people, for example, youth mentoring and guidance services, can vary drastically according to geographical area. Moreover, a given organisation might be involved in the delivery of a wide range of services to an extremely diverse and homogeneous user population: for example, young people experiencing social exclusion or behavioural issues as well as forms of physical and learning disability. Often young people might have to travel to another area in a given city to attend a social group or meet with support workers.

Ensuring that service provision remains funded, in many cases, follows the successful acquisition of grants and contracts with a local council. Establishing a need within a particular area is directly linked to the gathering of evidence and the demonstration of successful outcomes [30]. However, it is challenging for organisations to collect data from young people. The current reliance on form filling or the artificial scoring of social and emotional outcomes can be exclusionary for some. This is particularly the case where a young person has a disability whereby they might struggle to travel to the site of service provision; to concentrate on such a task; or have difficulty with reading or writing. Organisations therefore readily acknowledge the need to explore innovative approaches to data collection.

2.1 Service Evaluation with Young Ambassadors

Local councils in the UK have established a range of evaluation programs aimed at better understanding this diverse offering of services, including bringing together groups of 'young ambassadors' [26]. Typically, this involves bringing together groups of young people with lived experience of services, as well as other forms of social exclusion, to evaluate the provision of local services of interest to them. There are many examples of organisations taking an interest in supporting young people to be ambassadors for their peers, supporting them to speak up for themselves and be advocates on behalf of others [33]. This represents part of an ongoing attempt to build co-productive communities within cities and diverse spaces across society [57]. Such initiatives are country-wide with national youth advocacy organisations working in collaboration with local government to establish and support such groups [26].

However, there are many challenges to the initiation and sustenance of these groups. Group membership can be extremely fluid; it takes time to train and increase the capacity of young people to work as service evaluators [8]; and the resulting engagement is often in danger of being tokenistic [39]. Indeed it has been noted how young people may spend many years participating in such initiatives, going to considerable effort and time, and see no evidence of change in the services on which their opinions are sought [53]. Moreover, the precarious nature of funding within the sector can lead to groups being abandoned, as initial funding pots run out or follow-on funding found lacking. The result of which is the loss of the experience and knowledge acquired.

Concurrently, government policy increasingly calls for provision which is 'digital by default' [55]. Many local governments are now turning to digital technologies to explore more flexible means to collect data related to local service provision [17,37]. This work typically aims to directly involve citizens, giving them a voice and benefiting from their experiences. It has been noted, however, that this can be an exclusionary practice and too often 'involvement'

simply means putting a feedback form onto an existing website; methods which fail to account for the social and participatory qualities of meaningful civic engagement.

2.2   Digital Civics, Participation and Community-based Research

HCI research in the area of digital civics explores how digital technologies can be designed and configured to create new infrastructures for civic participation [5,6]. This provides new tools that serve to capture and promote civic dialogue and debate [27,41]; foster awareness and engagement with matters of local concern [45,51]; and support citizens to collect data with which to evidence and strengthen views [31]. Researchers have shown how such technologies can create new spaces in which dialogue can flourish [45,51] while providing new tools whereby citizens can capture aspects of their experiences. These projects demonstrate how digital tools can be configured to complement the work of social movements or community groups, helping citizens frame complicated issues for themselves and generate evidence to create action [32]. Recent work in CSCW describes how non-experts are increasingly involved in data collection and explores how data capture can be more citizen-led in nature [27,42]. This comes with an acknowledged need to support citizens in their efforts. However, while these projects go some way towards accounting for the social and participatory qualities that characterise public involvement in civic matters, often they fail to provide the socio-technical infrastructure required to implement the ideas generated.

More directly related to our work with VCOs and public sector partners is Dow et al.'s [19], who investigated the role of technologies designed with charity organisations to collect feedback and opinion from users of public services. They worked with individuals with learning disabilities and older adults with a cognitive impairment to investigate capturing and presenting feedback on care service provision. Dow et al.'s deployment of a simple digital system was key to their success in creating new avenues of feedback collection situated at the site of service delivery. However, as these authors note, a challenge faced with this work was its focus on designing from the top-down with care professionals and senior staff in management positions rather than on working with the populations that the organisations serve.

Researchers in digital civics explore citizen engagement and participation that is more relational in nature [40]. Within this, community-based research endeavours highlight care, trust and authenticity as important dimensions to consider regarding the composition of relations between citizens and governing bodies [10,29,46]. Meng et al. observe how, especially when it comes to disenfranchised communities, formal governance structures lack a crucial dimension of care impacting their accountability to their citizenry [36]. Echoing the work of Asad and Le Dantec [2] and Peacock et al.[41], they demonstrate how responsible research design means working with the proximal individual or community, situated at the site of care giving (and receiving).

Taking this further, we answer the call of Peacock et al. [41] in collaboratively developing a toolkit with young people to support their participation in civic processes. Following Peacock et al., we seek to highlight the gap in young people's involvement in processes of decision making important to them. Building on this work, we aspire not to translate the sanctioned processes of local government planning, but instead to find ways in which young people can capture aspects of their experience, to transmit their ideas and perspectives on service provision, in ways that are shaped by them. Our engagement also draws from existing evaluation processes allowing us to explore the multifaceted dimensions of participation across diverse stakeholders in a community-based context in a way that is led by young people.

As a priority, we sought to engage service users directly in technology design and, through that, their participation in the evaluation of services, rather than only in the testing and trialing of new digital systems. Allowing young people to set the agenda for what was being evaluated and how. The emphasis in our work is on partnership and coproduction in how young people may collect and make sense of data about their experiences, and iteratively share that information with service providers. It is on supporting young people to articulate that which is of most importance and how existing evaluation processes might be disrupted or modified, with the goal of creating and driving change.

3   Research Approach

It was a central motivation of our work to foster participation with those young people directly in receipt of services. Following Meng et al. [36] the sum of our activities and the use of the various artifacts produced was intended to further

the understanding of the design of digital feedback tools, while exploring how they infrastructure meaning making and civic action through the shaping of a participatory evaluation process. We will call each discrete execution of this process 'an appraisal' as a shorthand, for its utility in creating an evaluation, or appraisal, of a specific service. Overall, our focus and goals were arranged in collaboration with, and in relation to, the communities within which we worked.

To achieve this we carried out our design work through a process of community-based, participatory design [36], involving communities of young people tasked with achieving a given set of goals relating to service evaluation by local government. We sought to involve the young people in a participatory design process related to the technology through which they would capture their experiences, following Asad & Le Dantec's call to prioritise the concerns of research participants in community contexts [2]. In so doing, we draw on participatory design methodologies for the democratic and emancipatory values that underpin their use [7].

Our research was conducted over the course of 20 months and set out to explore how participatory processes and digital technologies might support young people to evaluate and shape the design of publicly funded services they use. In the following sections we introduce the network of participants involved and the associated advocacy organisations we worked with showing how the study developed organically from an initial encounter with just one organisation. We then describe the main phases of activity in the research, and the participatory processes of evaluation and associated digital tools developed and tested through these phases. However, we begin by explaining the ethical procedures adopted to ensure equitable inclusion and participation of all of our participants.

3.1 Ethical Procedures and Considerations

This research was subject to an in-depth university internal review board (IRB) procedure. Ethical approval was sought under the guidance of care sector workers who were able to give feedback and input into planned research activities, many of which were overseen by the same professionals. Moreover, we sought guidance on producing related research materials, created easy-read versions of all forms and documents and gained consent from parents or guardians of participants under 18. For all participants, consent was assessed on a case-by-case basis, and young people were only included with the guidance of care sector workers. Regarding, the use of different media capture techniques used in field trials, this was also assessed on a case-by-case basis. For example, those attending a particular event where data would be captured were all consented participants participating in the study including those that reviewed the final outputs, collections of captured media and associated data. Finally, all iterations of the digital tools that were tested were only available on mobile phones onto which prototype applications were loaded directly (i.e. at no time were they made freely available through an app store). Similarly, the final website displaying report data was not made available on the internet and was accessible only with the assistance and oversight of the lead researcher.

3.2 Participants and Participating Organisations

Research activities began with a meeting with *Penguins,* a youth advocacy and support charity (all organisation names are pseudonyms). Penguins had created a group of young ambassadors tasked with evaluating service provision by a local government in an effort to comply with legislation calling for service users to give feedback and input into service provision. Initially, we had been approached by group leaders as a result of a prior project we had worked on together. The group leaders were keen to explore different means by which the ambassadors could collect materials to aid in their evaluation work. The ambassadors were a diverse group of young people aged from 11-19 with a variety of disabilities including autism spectrum disorder (ASD) and physical disabilities. The original group began with 5 regular members but over time this expanded to 11. The ambassadors at Penguins met once a month at a youth centre owned by the charity and the lead researcher was invited to attend these monthly sessions. This helped in getting to know the group's members, while also providing the opportunity to run workshops interspersed with the group's regular activities.

As the research progressed, other organisations working with similar groups of young ambassadors learned about the work we were doing. As a result of a presentation given by the lead author and the team at Penguins at a youth work regional networking event, *Youth Voices* also became involved in the research. The ambassadors at Voices were taking part in an employment program for young people (aged 18-24) considered 'farthest from the workplace' either through having a disability, or because they were a lone parent or young carer. The employment program involved working with

other organisations who were providing skills development and employment experiences. Voices were interested in giving young people the tools to evaluate the program to improve it for the future.

Later in the research, *The North East Academy* became involved after hearing about the project through word-of-mouth and visits to our research group's facilities. They had been invited to take part in a project exploring youth inclusion and accessibility in job centres being run by the Department of Work and Pensions (DWP). This project was being run by a new youth inclusion team formed at the DWP to look in particular at the participation of certain excluded groups likely to leave school early, for example those living in poverty or experiencing material deprivation. As such, there was an interest in supporting young people in evaluating these job centres which were seen as the next step in their transition from high school into the workplace. The Academy group was made up of eight young people, aged 16-18, that for a variety of reasons were excluded from mainstream school lessons and as a result were seen as at risk from leaving school early and assigned to a specialist unit within the school.

Altogether, across the three different organisations, 24 young people took part in the research (YP1 – YP24) each taking part in different workshop activities and going along to services to evaluate their offering. See table 1 for summary.

<div align="center">

Table 1: Young People (YP) Participating in Appraise Project by Organisation

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| Participant Codes	Organisation	Organisation Description
YP01 – YP04	Youth Voices	Employment Program provider targeted at young people (aged 18 – 24) with a disability, that are lone parents or acting as young carers.
YP05 – YP15	Penguins	Youth charity supporting young people (aged 11 – 19) with a disability, providing a variety of social groups, practical classes, befriending and advocacy services.
YP16 – YP24	The NE Academy	High school in the Northeast of England with YP drawn from a specialist unit supporting students (aged 16 -18) at risk of exclusion from regular lessons for reasons relating to disability, behavioral issues or familial circumstance.

3.3 Workshops

The first phase of the research involved the project team running four exploratory workshops with two of the groups of young ambassadors, Penguins and Voices, in order to explore their experiences of using public services and to generate insights and ideas for designing service evaluation processes. The workshops were intended to iteratively develop our understanding of the contexts of the work and build on each other, while also affording the opportunity to build trust and rapport with the different groups of young people. The two workshops that were ran with the Penguins ambassadors took place in the youth centre where they met regularly as part of their usual monthly sessions, the two further two workshops with the ambassadors from Voices took place in a room reserved for this purpose in their city centre premises with which the young people were familiar.

The first workshop was conducted with 5 ambassadors from Penguins and focused on engaging the young people in articulating what made a good experience for them when using different types of services. This led to discussions about what they may wish to look out for and give feedback about: for example, friendly or unfriendly people, noise levels at particular venues or examples of fun activities. Following this, the second workshop (with the same ambassadors) built on this by exploring how they might share their experiences with their peers. Discussion focused on which forms of expression and communication were familiar to them; which social media platforms they used and the features they found useful. While they were, in most cases, familiar with mainstream social media applications such as Facebook and Instagram, given the ethical concerns of capturing and sharing images and data pertaining to young and, in some cases, vulnerable adults, the use of such platforms in our research was immediately discounted. When testing prototypes of the digital systems under study, we ensured the security of data collected (e.g. images and audio and video recordings), as

well as supervised moderation of interactions between participants afforded by these prototypes, by conducting all research activities using bespoke digital tools and websites over which the research team had complete control. In this way we could ensure participant security and privacy in accordance with the ethical approval acquired for the project.

Workshop three was carried out with three young ambassadors from Voices. This workshop was run to introduce the new group to the project and compare and cross-reference with the Penguins group how they communicated with their peers and expressed their opinions through social media. The ambassadors from Voices used a range of different apps to communicate with their friends, e.g. WhatsApp and were particularly interested in emojis as a means of self-expression. This was built on in a further workshop at Voices, workshop four, which focused on exploring the use of emojis as a way of expressing themselves and involved designing new emojis to convey specific aspects of service experience, for example when an activity is too loud.

In the second phase of the research, eight further workshops were carried out. These workshops comprised a combination of planning sessions, conducted prior to each of the site visits to services being evaluated, and review sessions where the young ambassadors looked back and studied what they had collected. A total of 12 workshops were ran altogether: four exploring technology use; four where the ambassadors planned their evaluation visit; and four where collected material was reviewed and curated. Due to fluctuations in group attendance these workshops were run with between two and eight participating young people and lasted between 26 and 98 minutes.
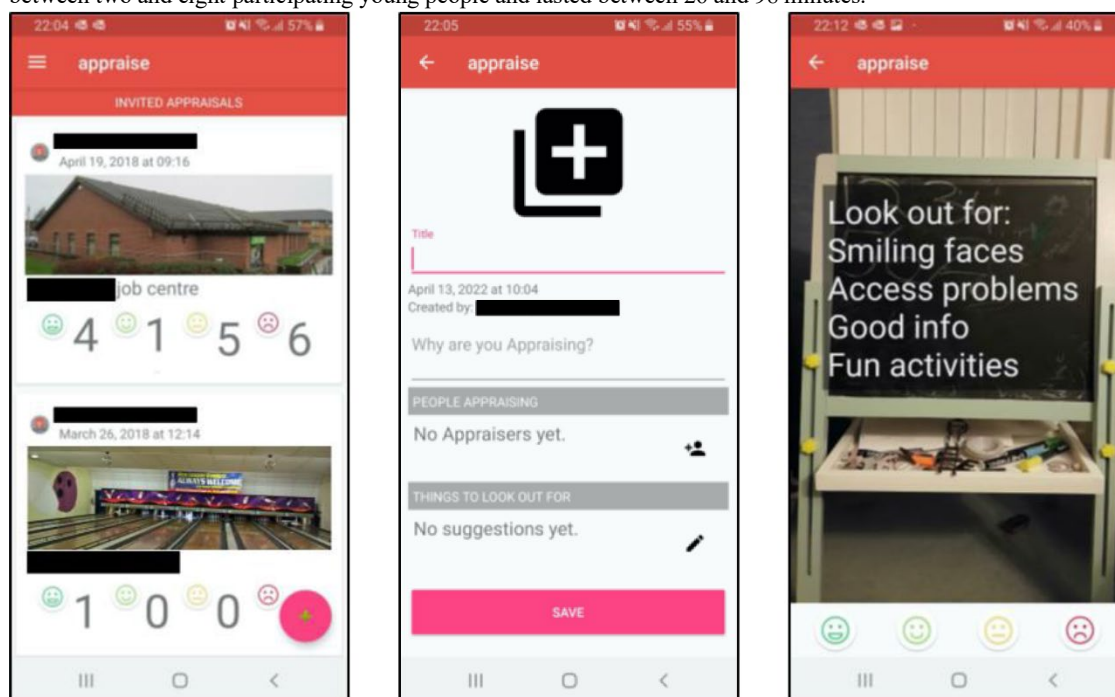
Figure 1: Appraise app screenshots: Main Appraisal Feed showing ongoing appraisals (left); Configuring a new appraisal (centre); Capture prompts overlayed on camera preview (right).

3.4 Appraise Mobile and Web Application

After the initial exploratory workshops, we developed an early prototype of the *Appraise* mobile app and website to support the young ambassadors' engagement with the appraisal process described in greater depth in the following section. Appraise was designed to respond to a number of design goals (DG) defined on the back of the initial workshops conducted with the groups of young people from Penguins and Voices. These were:

DG1: provide in-situ prompts to remind young ambassadors of things to look out for on their visits, as defined in planning workshops. *DG2*: provide a range of simple tools that allows the young ambassadors to capture and document parts of their visits using a combination of image, audio and video media. *DG3:* provide a simple means for ambassadors to rate different aspects of their experience and be tagged next to media; *DG4:* create dialogue between users giving the option for others to rate and comment on the media collected by everyone; *DG5*: gather all of the collected media, ratings and comments together to be reviewed and reflected upon by the young people before being shared with service providers.

Using the Appraise mobile app, young people were able to create a new project to design an evaluation plan for a particular activity or event. They could share the project, inviting other appraisers to contribute, and work collaboratively with their peers and the group leaders to configure and run their evaluation process (Figure 1, centre). Appraise projects could be configured with prompts for things to look out for on visits to support the experience capture and data collection (*DG1*). These prompts were then displayed as an overlay on the capture preview screen (Figure 1, right) and could be dismissed by tapping the screen. Once it was time for the site visits, the young people could access the project via the mobile app on their smartphones where a feed of ongoing appraisals could be browsed showing an image defining the appraisal, the title of the appraisal (usually the name of the service or activity being evaluated) and aggregated rating scores (Figure 1, left). The mobile app was designed to provide a quick and simple means of capturing and sharing images, audio and video (DG2). Participants respond to a prompt by tapping on the mic (audio), camera (image) or video camera (video) icons to capture the respective media item. Following the media capture, ambassadors are invited to rate their experiences with that particular aspect of the visit related media (*DG3*), using a Likert-scale of emotion faces (Figure 2) and leave a comment using a textbox.

Appraise then locally stores the media and rating, annotated with the corresponding prompt as metadata; all entries are uploaded to the project on the Appraise platform (via Wi-Fi, when available) and shared with others in the evaluation project. Appraisers could add their own comments or rating to any media being shared which in turn created dialogue and engagement around different elements of the activities under evaluation (*DG4*). Following taking part in an activity, the collected and annotated data could then be exported to a web-based report to be shared with the provider of the activity for their consideration and to create learning to inject into service improvement (*DG5*). Alongside the selected materials the report also provides simple, aggregated data such as how many ambassadors attended, how they rated their experience, and how much material was collected.
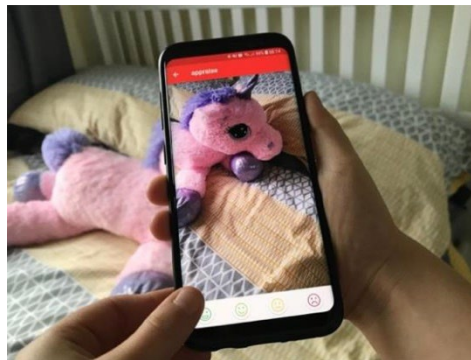
Figure 2: **Application prototype; image capture and Likert-style ratings**

3.5 Shaping a Youth-led Service Evaluation Process

After the initial exploratory workshops, we started to develop and define processes to support the young ambassadors in their service evaluation activities. This led to the definition of a youth-led service evaluation process intended to be executed in discrete and cyclical phases comprising: (i) a Plan, Do, Study, Act (PDSA) evaluation technique, and (ii) the mobile and web application, Appraise, that scaffolded the young peoples' engagement with the evaluation process. We explain each of these in more detail in the following.

From previous collaborations with partner organisations, we were aware of their use of Plan, Do, Study, Act (PDSA) cycles as a Quality Improvement technique [38] for their own internal review processes. The PDSA technique provided a basis for us to define a service evaluation process that would enable the young ambassadors to plan, conduct and review services and then share their insights with their providers. The traditional PDSA approach involves planning a specific intervention, carrying it out, observing the result and acting on the learning to bring about change. Adapting this to our service evaluation context, we reconfigured the PDSA process as a means to capture data about existing practice in a structured way, reflect on that data and inject into organisational change, envisioning that the cycle could then be repeated allowing each phase to be built on into the next. Our adapted PDSA process (See Figure 3) defined with our partner organisations went as follows:

Planning: prior to each visit, we ran a preparatory workshop where the young ambassadors were encouraged to think about what kinds of information they might be interested in gathering from their visits, as well as what would work well from an evaluation perspective. We would also at this time define prompts with the young people in this workshop; short questions or topics that the young ambassadors could take with them to guide and remind them of things to look out for. These prompts could be consulted during a visit, with the young people accessing them via the Appraise data collection app described above, to serve as guidance for them once they were on the visit at the service or activity.

Doing: this phase focused on carrying out a visit to an organisation providing a service. These visits would involve the young ambassadors experiencing the service first-hand, and documenting aspects of their experience for later review using the Appraise mobile app (explained above).

Studying: the young ambassadors came together again in a workshop following the visit to reflect on their experience and to look through any material they had gathered. This material was presented to the ambassadors, in some cases by being projected onto a wall in the room where workshops were carried out, along with the associated capture data including attached comments and ratings. To scaffold this step of the process we drew from [24] to help the group decide what they wished to *keep, lose or change* about the service based on their visits, categorising their reflections on the visit and any associated material around these three categories. During this process they would omit some of the material collected, while expanding on others through further comments and discussion. This process would culminate in a more curated set of materials selected by the group, which was combined into a summative web-based report for presentation to the service provider.

Acting: finally, the reports generated were sent to the service provider for comment and to guide them in service improvement. For the purposes of the field trials, and to create resource which could be presented to the service providers being evaluated, these web-reports were compiled in collaboration with the young ambassadors who made final editorial decisions, again in workshops, about what should and should not be included. The final reports were then produced by the research team as mock-ups and presented to providers using a locally hosted website on a secure laptop.
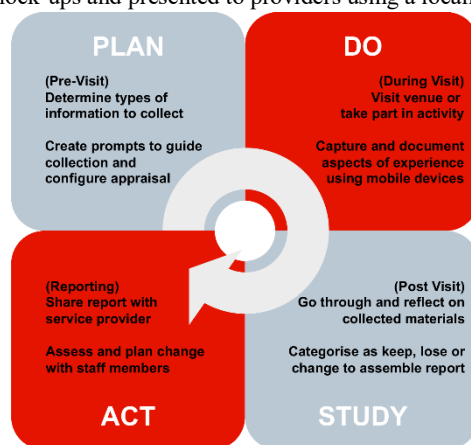
Figure 3: Diagram visualising and describing the adapted Plan, Do, Study, Act phases

3.6 Field Trials

The Appraise evaluation process and associated digital prototypes were trialled with three groups of young ambassadors across four visits. For the purposes of the trial, four site visits were carried out in total, including attending: (1) a family and youth festival comprised of various events and performances across a city at a variety of locations (with the Penguins group); (2) an accessible boxing taster session at a local gym run by a charity (again, with Penguins); (3) an employer's conference for young people furthest from the workplace (with the Voices group); (4) a post-school options session at a job centre in the North East of England (with the North East Academy group). Common to all visits was that each were provided by an organisation or charity in receipt of government funds and as such are here discussed as different forms of public youth service provision supporting positive social outcomes for disadvantaged or marginalised young people. In all cases ambassadors were accompanied by a group leader, the lead researcher, and often support workers as well.

3.7 Interviews with Service Providers

In order to assess the reports from the perspectives of those overseeing some of the services being evaluated, interviews were conducted with 14 individuals involved with organisations taking part in the design of the PDSA process and Appraise and staff representing the services evaluated (see Table 2). Interviews lasted on average just less than an hour and were an opportunity to assess the appraisal process and associated app for its efficacy as a service evaluation and reporting tool. Interviews were focused on speaking with service providers about the value of the web reports as an evaluation of their service as well as their view on the young people led evaluation process.

Table 2: Interviewee professional roles and sector affiliations

Participant Codes	Role	Organisation Affiliation
YW01 – YW06	Youth Worker	Voluntary Sector
SEW01 – SEW02	Social Enterprise Worker	Voluntary Sector
SW01 – SW02	Social Worker	Public Sector
DWP1	Dept. of Work & Pensions	Public Sector
JCM01 – JCM02	Job Centre Manager	Public Sector
CA01	Careers Advisor	Public Sector

3.8 Data Collection and Analysis

The process detailed above led to the generation of a large amount of research data. Each workshop was audio recorded, and subsequently transcribed. During visits, field notes were recorded by the lead researcher. The semi-structured interviews were also audio recorded and the recordings transcribed. Furthermore, following each workshop, discussions were held with other members of the research team to highlight issues and identify recurring themes relevant for the future iteration of the process. At the completion of the workshops, and evaluation visits, the totality of this data was combined to create one data corpus for analysis.

Thematic analysis [9] was conducted across this data corpus. Following Braun and Clarke, audio data was transcribed, inductively coded and then clustered into themes. These codes were checked in meetings and discussed in relation to our evolving understanding of the context. In the following sections we describe and discuss the final themes that resulted from this iterative process of analysis.

Table 3: Summary of evaluation visits and data captured. (YA = number of Young Ambassadors)

Event	Visit ID	Evaluated By	YA	Images	Videos	Audio Recordings
Juice Festival	1	Penguins	4	9	2	-
Inclusive Boxing	2	Penguins	5	13	13	4
Employers Conference	3	Voices	3	61	5	-
Job Centre	4	The Academy	8	28	-	-
Totals			20	111	20	4

3.9 Limitations

As the research was conducted over a 20 months period and was, therefore, longitudinal in nature, the researchers were able to establish rapport with the young ambassadors. However, we remained outsiders to the communities within which we were working. Community-based design research often requires involvement in relationships that are nested and interconnected. For example, the local city council was both tasking the young people with evaluating services while providing the services that were being evaluated. Such interrelated structural factors can impact on the research process and may impede the forthright or critical nature of the evaluations collected. Moreover, the study involved young people with a disability and none of the members of the research team identify as having a disability or lived experience of this. Developing partnerships with the relevant youth advocacy and support organisations takes time, and as a result the recruitment process was incremental, using a snowball sampling approach. This required flexibility and was impacted by factors such as fluctuating group membership. As a result, while findings cannot be easily generalised, they do none the less produce strong design ideas of value to similar systems aiming to scaffold participation in service evaluation and broader civic engagement processes.

4 Findings

By virtue of incorporating an initial planning phase before each visit, the ambassadors had a clearer idea about what they had to do and crucially how they had to do it upon arrival at the services and activities they were tasked with evaluating. This meant that at each of the visits, the Do phase, most ambassadors were able to capture data related to their experience (see Table 3 for summary). There were times when the young people gave their phones to support workers or group leaders so that they could be captured taking part, or to ensure that they did not miss out on activities. At other times they required additional support, for example when attempting to conduct an interview one ambassador was unable to think of questions to ask on the spot and a group leader intervened to pose some questions of their own. While our study captured a number of challenges and opportunities in relation to using the Appraise app and appraisal process to scaffold participation in a service evaluation process, the ambassadors were able produce, in the Study phase, and share an evaluation report, in the Act phase, for all of the services visited. We explore these in greater depth in the following section by reporting the themes identified in our data corpus and associating them to the original research question (RQ1 & RQ2) to which they most strongly speak.

4.1 Capturing and Recording Reflections on Approaches to Data Capture (RQ1)

Starting with RQ1, we found how Appraise could play a role in supporting participation through capturing and recording the conversations with the young people about the evaluation visits that they were about to undertake. As outlined above, before the groups set off on their visits, they took part in workshop planning sessions, the Planning phase. In these sessions the young people could bounce ideas off one another to collaboratively define their approach to the task of data capture that was both grounded in their own personal experience of services and framed by metaphors that they could easily grasp.

Group leaders, the VCO workers responsible for organising the young ambassadors, were present at these workshops, as were representatives of the provider organisation. Often these 'adults in the room' would help guide conversations or support group participation, while the research team were mindful to base decisions on the input of the young people. However, our field notes captured these, at times, fraught interactions: It was a group leader that suggested that they draw on their own experiences to get started in thinking about their approach. For example, they knew that YP11 '*didn't do well*' with loud noises, so she wouldn't be confident going along to certain types of events where potentially there would be a noisy environment. This led the ambassadors to thinking that an audio recording could capture noise levels. In this way the shape and substance of the evaluation process that would be being undertaken started to come together, both in terms of what was being captured and how.

Repeating this planning process at Voices, to understand the task of collecting evaluation material they used different metaphors. For example, one girl, YP04, liked the idea that she would be like a journalist and that her mobile phone would be like her journalist's notepad. This suggested that they could capture interviews with people about which she could take notes while asking questions. One of this girl's peers in the group, YP02, said that he would be more comfortable being behind the camera and between them they agreed that she could be conducting interviews while he was her photographer able to capture snippets of interviews or vox pops.

As the young people applied their own experiences and attempted to make sense of the evaluation task through these simple metaphors, the evaluation process became demystified to them. They moved from being apprehensive and sometimes baffled by the idea of taking part in an evaluation to being able to see exactly how their role related to their own past experiences of services and even imagining how they would carry it out. This exploration helped the young people to reflect on the role different types of media might play in the evaluation they were conducting and allowed them to define specific prompts, that could be recorded within the app, to help ensure that they stayed on task throughout their data collection efforts.

4.2 Creating a Space for Collaboration, Curation and Debate (RQ1)

There was, further, a strong role for both the technology and the appraisal process itself to create a space where conversation and debate could be carried out in relation to collected data. This occurred throughout, but was most notable in the Studying phases where the ambassadors curated the different materials, deleting some while highlighting the importance of others. Working together they were able to effectively collaborate on curation, developing their skills in relation to having something to say about the data and leading to a rich discussion and talk about data.

The ambassadors at Penguins were especially enthusiastic about participating in the curation workshop as it was a chance to revisit the material that they had collected. The workshop was held in an informal setting in their recreation room at the youth centre where the group was based. Despite lots of potential distractions, such as a pool table, the young people were keen to see what they had collected and stayed engaged for the whole duration.

Working through the images and videos there was a very supportive atmosphere amongst the group, which led to very few pieces of data being removed from the final set. Most images were given a thumbs-up by the group. When asked why they liked a particular video, one girl said, "*I liked [Anon.] talking*" (YP07). This kind of positive engagement with materials was repeated by others, such as YP13 enjoying watching himself taking part in the boxing training and saying, "*It was a piece of cake and it was a laugh.*" (YP13). Their willingness to engage and discuss the different data points was conducive to an engaged and lively discussion.

In the curation workshop with the young people from Voices, some of the young people did not want themselves to appear in the photos and videos that were being considered for the final report. They also explained how delegates at the

employer engagement event they had attended had told them that they did not want their photos included either. This created a challenge for the ambassadors as they worked through the material and realised that they had taken photos of those people: "*No, she said, she didn't mind the back of her [but] She didn't want to be in it.*" (YP03). In discussing what could be done, there was a suggestion that in future people could be given lanyards as a visible sign that they did not want to have their picture taken.

In the few cases where they could not recall why they had taken a photo or recording, the comments they had attached to the material at the time of collection were, at times, unhelpful and gave them little guidance. The majority were short, simple statements, for example: "Venue", "Teamwork", "Sign". Comments such as these attached to an image or video added little and still left work to be done to assess its value as an addition in the final report. In such cases the young people felt they needed more information to guide them, something to help remind them of their thinking at the time of capture. Eventually, it was agreed that this was where the custom emojis designed previously could have value, or even a smiley-face being used to quickly tag an image or video as it was recorded as a form of simple rating.

For the data curation workshop with the ambassadors from The Academy, the ambassadors reviewed materials that they had collected at the job centre and talked heatedly about particular images that they had collected. When it came to an image of the sign stating that mobile phones were not allowed, there was a split within the group. Explaining how they personally felt about it, one young man said he agreed with the restriction, explaining that he understood this as the rules of that environment which he was perfectly prepared to follow: "*It's data protection […] it's a professional place.*" (YP17). While another said he would remove the image from the report as he felt it negatively impacted his experience of the event: "*I didn't like how the rules were there or that I can't use my phone in there, you might be getting an important call!*" (YP16). For YP16 it was a reminder of how strict and regulated the job centre was and both ambassadors agreed that this was '*the way it is*'. In discussing this together they found that although the staff there were very '*friendly and polite*' that, as an overall experience, it was '*too formal*'. In this way different aspects of the data collected encouraged the young people to debate one and other, resulting in these more nuanced insights into their experiences.

Again and again throughout the Studying phase workshops we heard suggestions for better ways of carrying out the evaluation, or strong reflections about the nature of the young peoples' experiences. By virtue of these taking place as part of our structured PDSA appraisal process, these insights were of course recorded by the research team. However, it was apparent how this valuable information could add much to the record of the evaluation that was being built overall, and we reflected how future versions of the app might include a feature capable of recording and preserving these constructive and engaged debates.

4.3 Using Reports to Identify and draw out Insights (RQ1)

In the Acting phase of the appraisal process, the web-based reports were brought before the service providers and the focus became the role of the final reports in creating insights for action and change, the ultimate end goal of a whole process of participation. Engaging with the reports generated by the young people, they talked aloud about their thoughts regarding the data and any actions they might take. This led to them discovering insights about their own services. Some service providers were happy to draw conclusions from the reports as presented, remarking about how some of the images and videos gave them new ideas. SEW2, the director of a charity providing boxing classes to young people with a disability, was immediately impressed with how strong the visual element conveyed privacy and identity issues:

"*[A] lot of young people are like, I'm not doing that, I'm on centre stage, so [the report shows] it probably isn't as bad as you think. So, for all the camera is on this young girl here, there's actually loads going on in the background so nobody's really looking at her.*" (SEW2)

In this way the short video clips and images recorded were thought to have use in addressing preconceptions that young people might have. Moreover, watching feedback from a young person criticising the music that was being played in the gym during their time there, he said:

"*I appreciate that and then we can change that. Like the music thing, yeah, if we had an iPad that was linked up to iTunes or Spotify I think that would be really good and I'll probably take that on board to be honest.*" (SEW2)

It was fantastic to hear service providers respond so enthusiastically and constructively to the reports provided after all the hard work put in by our young participants. One limitation to this, however, was that there was no mechanism for

reporting these outcomes back to the ambassadors, beyond the research team feeding back to them directly. The PDSA process employed is designed to be cyclical and one could imagine the ambassadors returning to the service in future to use Appraise once more to evaluate the fruits of their labour. In practice this would be difficult to achieve, partly because there are so many services out there that could be targeted with this approach. This alerts to us that future versions of the system, or the appraisal process itself, should seek to find ways of collecting feedback from the service providers and delivering that to the young people. It would be a trivial matter to place a feedback comments box at the end of a web-report which, for example. Which, once completed, could be shared via a notification with all the appraisers attached to a given evaluation. In this way the young people could both further develop their skills in participating in evaluation activities, while also being assured that their efforts were having an impact.

4.4 Group Leaders as a Barrier to Participation (RQ2)

With respect to RQ2, one particular challenge to designing and deploying the Appraise app in a way that preserved the views and perspectives of the ambassadors was negotiating the terms of its use with particular group leaders. As explained already, a goal of the planning sessions we ran was in determining what the prompts would be that the young people would take with them to guide them in capturing evaluation data. Group leaders, as the conveners and organisers of all of the groups with which we worked, played an important role in planning what the young people would be looking out for at events. As a result, they had much input into coming up with the prompts they would have with them. And, as mentioned, representatives of the organisations being evaluated were also able to attend and have input into these sessions as well. These were structured sessions designed to include as many of those young people attending as possible and ensure that their voices were integral to the planning of the evaluation visits. To do this, the young people were encouraged to think about what was important to them, as well to take into consideration that which they thought might be important to others of their peer group.

The group leaders also behaved in a way that showed that they felt that it was important to keep the ambassadors on message as they saw it. For example, when YP04 suggested that a prompt say: "*Look out for deviants.*" (YP04), her suggestion was flat out dismissed as being unsuitable. The young person was told they were suggesting a thing to look out for that was wrong and were subsequently guided as to what was appropriate. This kind of interference was always done with a light touch and framed as coming from the boring grown-ups keeping the young peoples' whacky ideas in check. Similarly, when a young person asked why they could not evaluate a local supermarket, a public place many of the group spent a portion of their time on a daily basis. Again, group leaders responded with a shake of the head and a plea that the ambassadors take things more seriously.

In this way group leaders challenged how the digital technology could be used, shaping the plan for data capture while outright dismissing particular voices. However, part of the challenge of community-based research in general is in gaining access, and it would be unachievable without the cooperation of staff and volunteers in leadership positions at the organisations involved. Moreover, they are used to helping support the young people with which they work in achieving their goals and carrying out tasks in ways which are effective. What is not captured by the current process is the extent to which they have been involved in shaping that process, and again this is something that could be designed into system's like Appraise. For example, in the current design it is not possible to have an assigned user role of anything other than an appraiser. However, it would be a simple matter for group leaders and support workers to be added to appraisals on the system as part of the configuration process and for these workers to be assigned a role within the app as a 'supporter' to the appraisal. Such a feature would foster greater transparency, recording and making visible the input and influence that group leaders had in shaping the evaluations.

4.5 Challenges with Capturing Digital Material using Appraise (RQ2)

It was in the Doing, or data capture, phase where the young people attended their site visits and showed an understanding of how they might use their phones to capture different types of data and a willingness to give service evaluation a try. They quickly encountered challenges to using digital technology for this purpose, however, but worked within these to develop their own workarounds.

At the Employer Conference (Visit 3), the young ambassadors from Voices were nervous about approaching people cold to ask them for an interview, which was something they as a group had planned to do at their planning workshop. For example, when asked about this YP03 explained that she would speak to people with whom she was familiar but "*not people I don't know though!*" (YP03). This left YP03 with a quandary about how to get feedback from delegates, or how she would be able to conduct any interviews at all. This showed how ambitious the young people had been in thinking they would act like reporters or photographers and left them with looking for a workaround. To address the problem, she approached an older peer and asked if they could speak to an employer on her behalf. Once they had a good quote, she wrote that down on a piece of card and photographed that, creating an unanticipated type of feedback in the form of an artistically represented quotation.

In another example, a group of ambassadors experienced significant barriers to gathering material from the organisations they were evaluating. The group of ambassadors from The Academy visiting the job centre (Visit 4) learned close to the time of their visit that mobile phones were not permitted on the main operations floor of the building. This was explained by managers at the job centre as being a matter of data protection policy and indeed there are signs above the entrance to the building to this effect. It came as something of a surprise to the DWP team organising the visit, especially as the project was centred on the ambassadors using their phones to record their experiences. However, since the member of DWP staff responsible for the visit was present at the planning workshop, the ambassadors were able to negotiate permission to use their phones in one room of the job centre, otherwise they were instructed to take photos of the building's exterior. Such constraints left the ambassadors with a narrow set of possibilities in terms of capturing material.

Moreover, the careers event at the job centre was set up so that the young people would rotate from table to table talking to different organisations in small groups. Sitting at a table facing the delegates made it awkward for the young people to be on their phones and many were also reluctant to record with them as well. This meant looking for another workaround which was taking photos of leaflets that were spread out on the tables in the room capturing text comments about them throughout the session. Additionally, the ambassadors arranged themselves into groups of three making it possible for one to be using their phone while the others engaged with the organisation representatives. However, since groups moved between the same tables, this approach of capturing images of service resources and leaflets led to a lot of duplication.

Contextual factors both relating to rules about the use of recording technologies in public places and social anxiety of engaging with and capturing images of service staff or other services were always going to be critical to the success of digital participation tools like Appraise. In testing out the prototype, however, our ambassadors were easily able to find ways of using the app to collect data, spontaneously coming up with workarounds while carrying out their work. A great strength of digital tools is in their flexibility to be used in a variety of ways and, with creative thought, this can result in the creation of unexpected or unforeseen materials of value. Perhaps an even greater strength, however, is the decision to carry out the capture task, as well as the entire PDSA process, as a cooperating group or team. As a result, the ambassadors were able to work together to help each other come up with practical workarounds and support each other in collecting data in new and creative ways.

4.6 Generating Resources for Communication and Promotion (RQ2)

In speaking with the service providers that were being evaluated, further opportunities were identified for carrying out service evaluation supported by digital resources. When reviewing the web-based reports with members of the research team, they were also considered to be a means for providing a valuable resource for communicating the work service providers do and creating action within organisations. For example, reviewing the report compiled by the young people from Voices who took part in the employer engagement event, the service provider thought that it held promise for communicating and promoting similar events, *"This is more like promotional [...] as a visual representation of the day, that is exactly right"* (SEW1).

The manager of the job centre that was visited by the group from The Academy could see how the report could fit into improvement sessions, "*this could work in group information sessions evaluation analysis.*" (JCM2) There was enthusiasm for its role in creating resources to bring into sessions to promote discussion around particular issues. Videos were thought to be especially well suited for this, for their ability to convey a richer picture of potential clientele and

their perspectives on the service they provide, putting a face on them and bringing their voice into staff development sessions. She also thought it could support new forms of engagement with young people, *"Analysing that [...] is much more effective than us going on to advise a customer to go onto an online page and fill in a questionnaire."* (JCM2).

The reports were also seen as a way of communicating with those harder to reach managers and executives, but at the same time doing so in a way that was efficient. Notably, it was thought to be a good way of communicating with senior members of local government that were involved in, but were perhaps furthest from, the point of service delivery, *"It brings it alive, doesn't it? [...] I've found the use of video and pictures is much more useful now when meeting with senior colleagues."* (SW2) This was echoed by JCM1, the front of house manager of the job centre:

"I think that if the senior leadership team see that feedback, I think that's got to be in. It's so positive and as we've said that in a couple of hours that's the feedback that we got, it shows it's been a worthwhile exercise to do." (JCM1)

5   Discussion

In exploring the design of a digitally supported service evaluation process, our goal had been to make such processes more participatory for often disenfranchised groups such as marginalised young people. The aim was to offer support for evaluation and reporting tasks that were already being set by local government bodies in collaboration with VCOs. This is in line with current sector-based thinking about how to deliver more effective services, by co-producing them with those that use them. We carried out our design work on the basis that digital tools could both better incorporate the voice of young people into the production of such services, especially those intended for their use, while creating evidence for impact and change. To do this, consideration had to be given as to how to involve those young people in an evaluation process. In beginning our collaborations, we found that organisations had not given this much consideration that went beyond simple form filling.

We therefore planned and carried out a series of probing activities whereby different elements of an existing evaluation process were supported by simple technologies configured in different ways, developing them iteratively with the young people tasked with the evaluation of activities. In doing so we saw how the use of digital technologies, embedded in a structured, participatory process, could support young people to evaluate and shape the design of publicly funded services they use and offer design insights for digital tools to be used in this way. Further, our encounters with a variety of stakeholders made us rethink how participation can both be defined and shaped through more readily configurable designs that were accommodating of a range of behaviours and were more personalised. At the same time, tensions were surfaced whereby it was hard to reconcile the sector's commitment to capturing and incorporating the youth voice with their need to record and demonstrate compliance with expected outcome measures. We expand on these challenges in the following sections.

5.1 Challenges to Incorporating the Youth Voice in Service Evaluation

Through our study we found that while there are both many opportunities and barriers to the role that digital tools can play in supporting participation in service evaluation processes, that some of the more significant challenges arise from the configuration of the public sector context itself. As we have seen, there is legislation and policy in place to promote inclusion and participation of public service users [58]. To that end, some of the elements that inspired the system and the basis on which we were working with our collaborating organisations was because they could appreciate how a "Trip Advisor for public services" [34], where the reviews would be generated by young people, could create a valuable resource for learning and service improvement. This reflected the thinking behind innovation in local government services [58]. Such a model has seen some success within HCI research in collecting and sharing data for breastfeeding-friendly places for mothers [4]. The logic of such an approach fits well with the New Public Management ethos applied to public service provision in England in recent decades, where service users are considered consumers, work awarded through tendered contracts and successful outcomes demonstrated through agreed metrics [30]. Feedback from young people could therefore act as customer reviews, alerting providers to what is or is not working about their services and broadcasting these 'authentic' views to peers for guidance regarding service provision in the local area.

One challenge to this line of thinking, however, is in considering just who the audience is for the reviews being generated. If the intention is for young people to generate content, then, to follow Trip Advisor, this implies a platform

for young people to share and to talk with other young people. However, the unique configuration of our community-based design setting implied a necessary shift in this model from users (young people) sharing experiences and reviews amongst themselves to organisations that are aiming to collect information about their own provision, i.e. service evaluation data. This amounts to a shift in the audience for the data being collected, at the core of which is a misconception about the workings of online recommender systems. Where the reliability and trust in the reviews comes from the independent reviewers being able to be free and honest about their experiences. Our findings show how applying this to service evaluation, where the goal is often to evidence particular successes around specific elements of delivery creates tensions and 'reviewers' become restricted in ways that can be disempowering.

Partly this was driven by the way in which the voluntary youth sector is underpinned by a commitment to empowering young people, and key to this is amplifying their voices [56]. Viewed through these long held social values, the principle of Trip Advisor is sound and, on the surface, appears to honour a commitment to listening to young people about service provision and bringing their voice into decision making. However, what our exploration reveals is that when the audience for the proposed "Trip Advisor for public services" is not the platform users and instead the service providers themselves, then there are questions that begin being asked about the data collected, beyond whether or not a given service is worth the time and effort to consume. It reveals that it is hard to reconcile the commitment to listening to the youth voice on the one hand and the fact that service providers are not accountable to that voice. Rather they are accountable to a number of stakeholders, parents, funding organisations, local government bodies, none of whom are the young people with whom they work so closely.

Asad and colleagues describe how their design work into new digital tools within a civic context was one way to articulate particular tensions within contextual systems and processes [2]. Similarly, we found that our work highlighted points of tension while revealing contradictions, specifically relating to the problem of collecting the voice and opinions of young people only for organisations not to hold themselves accountable to that voice. Vines et al. encountered a similar problem when they worked with older people to explore recommender tools for assisted living technologies [50]. Our findings reinforce that the traditional recommender system model is unsuitable, especially within contexts where peoples' care, health and wellbeing are the focus.

One way that the Appraise system departed from this model, was in the collaborative nature it adopts to the collection and curation of feedback. Whereby multiple users contribute data, comments and ratings regarding the same service and then proceed to curate and refine that data before presenting it in the form of a report. The ambassadors were then able to interact with each other and we have seen how discussion was engendered in relation to differences, or indeed agreement, between opinions. However, as we have also seen, there is a missing view or perspective on this feedback and that is of the service provider, having received the curated report. Future versions of the Appraise technology might reasonably *explore including features that allow service providers to provide feedback on the feedback that they receive*, or at the very least a response, to the ambassadors. Through the inclusion of such a mechanism we might hope to generate a feeling of responsibility to respond and through that *seek to find ways to increase their accountability to those that make use of their services*.

5.2 Issues in (Re)Shaping Participation

As our study progressed, young people were able to build capacity and capability through recurring group participation. They captured many images of the events they attended, creating a record of their experience and were able to add to this by coming together to talk in more depth about what they had collected. This led to points of self-reflection where certain young people got a lot out of looking back over the material in a structured way. They remembered things forgotten and asked questions prompting discussion from peers, support workers and group organisers. These became instances of co-discovery, sharing and communicating a young person's experience or point of view. In this way they explored both the positive and negative aspects of their experiences, identifying specific areas for improvement.

A significant barrier to this was the fluid nature of the groups we were working with. Where membership changed on a continuous basis and those present to go on evaluation visits fluctuated with those available to revisit the collected data. This, however, was a great strength of having a digital infrastructure on which to define and organise the evaluation process. Having collected the annotated information, those who had not been on visits learned something of the experience that they might have had, or could have in future, increasing awareness of provision. Concurrently, those who

were not able to attend particular sessions still had their views represented since a record of the evaluation as an ongoing project was recorded in different ways throughout; whether in the pictures they captured on visits, in the comments they added using the app or in taking part in discussion sessions to curate data as and when they could.

An initial goal had been to augment traditional surveys that are often too structured and exclusionary, especially for young people with a disability [20]. It is possible to conceive of such tools as the restrictive end of a spectrum of digital tools designed specifically to foster inclusion and participation. A spectrum that ranges from more restrictive and rigidly defined 'forms to be filled' to more open and expressive means of data capture such as video capture or photography. On one end of this spectrum, there is less definition given to what gets captured and how. For example, Goncalves et al. [25] have shown in their extensive work of capturing images from citizens on kiosks in public places that unstructured, often playful, capture of images in this way can amount to the capturing of a data set that can be put to a variety of uses, including for feeding into the decision making of public bodies. Similarly, within the field of participatory video a range of tools exist that scaffold and define the means of data capture, handling and presentation [43,49]. The limitation of such tools is that they do not easily communicate to what extent people have been led. They are a black box, lacking transparency about how people have participated and, crucially, the authenticity of this participation.

This calls into question the meaning of participation and authenticity in this space. In one respect, in our study, partly the data was hard to understand for service providers precisely because it is so authentic. This created work that had to be done on the side of the organisation to interpret or, in some cases ignore, the data that had been carefully collected and curated. Still participation and the means of participation meant that this was possible while still affording people the opportunity to get involved while being able to personalise the extent to which they wanted to get involved. The process we implemented allowed for many degrees of participation, including peripheral participation, since just observing and following an online discourse still represents participation. One of the strengths of the appraisal process, then, was that it honours the different degrees of participation that people wanted to put in.

More importantly, for our work, however, was that this particular configuration still *allowed young people with different disabilities to contribute and participate to an extent that was comfortable for them, lifting and reconfiguring the barriers of participation*. The young person that explained that they didn't do well with loud noises is a case in point. Through listening to and responding to these challenges they were still able to participate in a plurality of ways. This alerts to us that *similar evaluation tools should, in future, be similarly flexible and customisable to the groups with which they are intended to be used*. Only then can we start to make significant progress in scaffolding participation and make a stronger commitment to the further inclusion of marginalised groups.

5.3 Design Tensions in Community-based Research

As has been discussed previously, and observed by others, community-based design research is both messy and complicated. The specific communities within which we were working were assembled and brought together by youth organisations and charities tasked with delivering support services to marginalised, and often vulnerable, young people. It has been observed how neoliberal policies and practices are increasingly prevalent in how public services are delivered, whereby the public has been reassigned the role of consumer [11]. In the UK this is embodied by the adoption of New Public Management approaches to service delivery that emphasise the collection of metricised data in relation to the outcomes of service delivery [35]. Such practices lead in many cases to staff adopting specific strategies in relation to data, massaging or reporting performance indicators in particular ways or cherry-picking [19]. One success of our work has been that cherry-picking was not an option, and in this way we sought to address power imbalances created between the service providers and the citizen consumers at the heart of our research.

Le Dantec et al. have described the configuration of community-based research as comprising: "multiple us'es and thems, where the single narrative of authority and power found in the workplace is replaced by multiple and overlapping domains of influence and conflict." [28]. In our work with different organisations working with young people we observed a single 'us' (Young People) facing a multifaceted set of intersecting and fluid 'thems' many of which represented, directly or indirectly the interests and goals of local government: Taking *Penguins* as an example, they were a group convened by a youth organisation, which was funded through a contract with local government and visited two events on their evaluation visits, one delivered by a youth sports charity, another by the council itself through its culture and arts arm. Behind the scenes, all of these organisations are linked in ways that are in no way apparent to the young

people at the centre. Moreover, each of these stakeholders demonstrated a commitment to the social values of youth sector work, in particular the importance of listening to and addressing the youth voice. Our work reaffirms how the holding of similar values does not always mean unity of action and how the alignment of values often leads to differences in interpretation by different stakeholders within the context of work [52]. However, in the nexus of competing and shifting 'thems', it is hard to gauge exactly whose voice was being aligned with in the unfolding design process. This tells us something of the limits of participatory design approaches and how they flex within a community-based setting. In embracing flexibility, we, at times, allowed our allegiances to drift in ways that obscured the youth voice within the designs being tested. At these moments we did not honour our commitment to the young people caught in the middle.

Defining middle-out design, Fredericks' et al. describe a vibrant collaborative endeavour where the top-down, governing bodies, and the bottom-up, grassroots organisations, can meet in productive cooperation [23]. Dow et al. show how the middle can be a contested space defined by contradictions and tensions and from where the 'real' work flows outwards. They call for designers to embrace their middle-out position [17], without specifically defining what this middle-out role might look like or be. From our work, it seems clear that embracing this role should at the very least involve being transparent about our commitment to the young people we worked with, while giving consideration to our view on the values we encounter from the organisations charged with their care and support, and planning for mitigation strategies should tensions arise.

In this way our commitments and allegiances should be much clearer from the outset and we must find ways to communicate those with all of the collaborating stakeholders. One small step in this direction could be to draw from professional practice in interpretive communities [13]. These researchers have shown the *value in sharing and articulating the values of all stakeholders early on*. Using simple recording technologies these could be mapped into our messy, community-based, middle-out design spaces. *Feedback technologies could reasonably be redesigned to record these values in the form of commitment statements, either through short videos, sound bites or text.* In this way there would be new opportunities to discuss them, account for them and shine a light on slippages in interpretation.

6 Conclusion

We presented the design and trialling of a digitally supported service evaluation process and associated digital feedback capture tools, the Appraise app, with three groups of young ambassadors. In our empirical study, we saw how participatory design and evaluation processes were valuable, not only for creating ideas for service improvement, but in their potential to reveal challenges in messy, community-based contexts, while building the skills and capacities of marginalised young people motivated to impact the services important to them. We also highlighted key tensions for future design work for community-based, participatory design processes and digital feedback capture tools aiming to capture and integrate the youth voice in public sector service provision.

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