Engaging teenagers productively in service design

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ABSTRACT

Engaging young people in participatory design can be challenging, particularly in health-related projects. In a study co-designing diabetes support and information services with teenagers, we found framing activities using popular culture was a useful strategy. Various cultural references helped us stage activities that were productive for the design process, and were engaging for our young participants (e.g. exploring practical implications through discussions in a 'Dragons' Den'). Some activities were more effective than others and the idea of *language-games*, which has been widely explored in participatory design, explains why our strategy was successful when there was a clear 'family resemblance' between the popular cultural references and certain essential stages of designing. However, attention is required in selecting appropriate cultural references if this strategy is adopted elsewhere, and design facilitators should focus first on devising accessible language-games, rather than expecting popular cultural references to provide complete solutions to the challenge of staging participatory design.

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1. Introduction: The challenge of designing with teenagers

Pedersen and Buur [1] highlight the need to make participatory design workshops both *engaging*, to encourage participants' involvement, and *productive* to ensure that new design proposals are generated that are relevant to participants' lives. This can be particularly difficult when working with young people.

Being a teenager is a challenging period in a young person's development. According to the UK National Children's Bureau (2012) 60% of young people in the UK feel stress about school work and exams, 35% about their physical appearance, and 32% about friends. Further, parents are relaxing their control whilst remaining engaged with decision-making [2]. The challenges are even greater for teenagers who have long-term health conditions. For example, Type 1 Diabetes Mellitus[1] (henceforth diabetes) is a lifelong condition requiring indefinite self-care via regular insulin injections adjusted according to activity, diet and illness to maintain appropriate blood glucose levels. Poor control of blood glucose has short-term health impacts (e.g. the sickness, lethargy and disorientation associated with 'hypos') but crucially has potential long-term adverse health complications such as retinopathy, nephropathy and neuropathy [3].

In addition to dealing with school work, growing up, and boyfriend or girlfriend relationships, teenagers with diabetes also need to manage disciplines of blood glucose monitoring (both current and trends over time) and balancing their food and alcohol intake, physical activity, and insulin dosage accordingly. These factors affect the blood glucose levels of someone with diabetes along with stress, growth, and emotional excitement — all prominent features of being a teenager [4]. Even if a teenager undertakes all the correct diabetes management steps he or she may still feel frustrated, ashamed, afraid, or angry (ibid.). Teenagers need the support of their parents and medical workers, as self-management is challenging to maintain [5], but are also gradually taking greater responsibilities on themselves. Children with diabetes may not want to talk about their condition and this attitude becomes even stronger during adolescence when acceptance by peers becomes a central focus [2].

The early development of participatory design methods, exemplified by Bjerknes et al. [6], Greenbaum and Kyng [7], positioned participatory design within the workplace where adult

[1] Type 1 diabetes is typically diagnosed in childhood or adolescence and unrelated to lifestyle factors. Type 2 diabetes is a different condition that usually appears in adulthood, often linked to poor diet and obesity.

participants had clear external motivations for engaging (e.g. protecting their jobs, designing better working environments). As participatory design has moved out of the workplace, the question of how to motivate engagement has become more pressing particularly when participants feel little enthusiasm for or ownership of the design domain. For example, [8] experienced difficulties developing an emotional intelligence educational tool with teenagers with behavioural problems and recommend that designers pay attention to the design methods and communication tools that they apply: working in small groups, defining simple tasks and objectives, giving clear instructions, and using many short activities with immediate outcomes. Mazzone et al.'s work was conducted in the context of schools (and pupil referral units), as were many other examples of participatory design with teenagers (e.g. [9–11]). Outside of the school setting, [12], reflecting on their experiences working with teenagers to redesign exhibitions in a museum, report problems that arose when designers deconstructed young people's design ideas and prototypes to incorporate them into new design concepts. Tensions emerged between the young people and the design team, when some of the teenagers reported feelings of frustration that their ideas were not being implemented as they expected and considered withdrawing from the project. Developing a shared understanding of the design process is critical to maintaining trust, and Iversen and Smith (ibid.) recommend that designers should create design space for each concept as a way of showing due respect for the efforts of the young people involved.

This paper reflects on a ten-month project working with a group of young people with diabetes (all teenagers with the exception of one 8 year old participant), together with family members, to design innovations in the healthcare services that are provided to support self-management of their condition. Many of the activities that we conducted within the project drew upon elements of popular culture (TV shows, films, everyday activities, on-line social networks). In this paper, we examine how those elements helped to make co-design activities engaging and productive, but also on the limitations of this strategy.

2. Designing with teenagers

2.1. Teenagers as design partners

Our review of the existing literature identified a range of ways in which teenagers have previously been involved in design projects. Many projects have involved teenagers as a source of information for design via e.g. observation [13], focus groups [14], interviews [15,16], questionnaires [15]. Later in development, when designs have been developed to early stage prototypes, teenagers may be involved as design informants by involvement in user testing, e.g. [17]. Recent trends in design have emphasised the potential of ambiguous inputs as a way to provide creative inspiration for designers [18,19]. Drawing on this tradition various researchers have involved teenage participants in making activities to provide inspiration to designers, for example using workshops [15,12,14], visual materials and technology probes [15], role playing activities [14], Lego Serious Play [20], and comic-strip creation, scenario visualisation, and drawing and labelling facial expressions [8]. Some projects have involved teenage participants in various kinds of rating activities to help designers understand their preferences and priorities, for example, using a 'cool wall' [21] or by card sorting and dot voting [14]. Finally, some projects have worked with teenagers directly developing ideas for digital systems using e.g. focus groups, workshops, role-playing and paper prototyping [14], or collaborative prototyping with mock-ups [12]. Our case study is of this last form in that our goal was (as much as possible) to engage teenagers directly in developing new proposals for the health services that are provided for them.

2.2. Teenagers with diabetes

A few studies have engaged teenagers with diabetes in participatory research and design. Webster [22] engaged young people in workshops to develop personal strategies to gain confidence in self-managing their condition. Van Staa et al. [23] asked trained young people and chronically ill adolescents to conduct interviews at a disco to evaluate existing hospital services (however the young people were not actively involved in redesign of those services). Franklin et al. [24] developed the "Sweet Talk" text messaging system to support insulin therapy, adopting a traditional software development lifecycle involving requirements gathering, prototyping, implementation, evaluation and reporting. Thus their approach involved young people primarily as design informants rather than co-designers.

The closest body of work to our own is that of Glasemann and Kanstrup [4] who co-designed services to support self-management with young people with diabetes using visual materials (e.g. tool box, creativity pack) to envision mobile diabetes support. In a later work, [25] conducted interviews, observations, food quizzes and paper prototyping at a diabetes summer camp to support design of a carbohydrate counting mobile game. Glasemann and colleagues also reflect on the challenges working with young people with diabetes: recognising the difficulty of bridging the gap between their visionary ideas and possible implementation [4]; the difficulty in establishing discussions about diabetes [25]; and the importance of designing with a focus on a person's youth rather than their condition [26].

2.3. Motivating participation

Glasemann and Kanstrup [4] note the importance of motivating young people's participation and empowering them to consider themselves as innovators. Edwards et al. [15] provided cash rewards and noted the value of youth leaders and parents/carers as 'authority figures' in keeping teenagers engaged. Such approaches rely upon external motivation but engagement can also be motivated through attention to the participatory activities themselves. In contrast to Edwards et al., [27] found that open activities emphasising free discussion and collective decision-making were more engaging for participants accustomed to a youth centre's 'correctional culture'. When working with young people with low motivation, [8] note the importance of relating tasks to concrete examples and familiar situations, having short activities with clear outputs, and demonstrating the value and intended usage of participants' contributions. A common tactic in Mazzone et al.'s approach was also to ensure that activities were enjoyable for participants, e.g. icing emotions onto biscuit 'faces'. Danielsson and Wiberg [9] suggest avoiding activities that closely resemble how children create (e.g. manipulating low-fidelity prototypes) in favour of activities that emphasise teenagers' adult capabilities (e.g. focus group discussions).

This work emphasises the need to actively engage young people in design activities and enable their contribution, but highlights the complexity of this challenge particularly when certain tactics somewhat contradict each other (e.g. making activities fun but not overly childish). When co-designing health services with young people where personal benefits are initially unclear to them (as in our work), the potential for external motivation is limited and ensuring the design activities themselves sustain engagement is of crucial importance. Our aim was then to conduct a design process that provided intrinsic motivation for participation. In doing so, the key learning we took from the above examples was to *adapt* activities around young people [8] following the interests, themes and ideas that emerge [27].