Northumbria Research Link

Sex Talk: Designing for Sexual Health with Adolescents

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ABSTRACT

In this paper, we describe a user-centred design process, where we engaged with 58 adolescents over an 18-month period to design and evaluate a multiplayer mobile game which prompts peer-led interactions around sex and sexuality. Engagement with our design process, and response to our game, has been enthusiastic, highlighting the rich opportunities for HCI to contribute constructively to how HCI may contribute to sexual health in adolescents. Based on our experiences we discuss three lessons learnt: lightweight digital approaches can be extremely successful at facilitating talk among young people about sex; sharing control of the conversation between all stakeholders is a fair and achievable approach; even problematic interactions can be opportunities to talk about sex.

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INTRODUCTION

Adolescents have emerged as a priority in public health in recent years. In a recent commission on adolescent health and wellbeing, The Lancet [26] reports that although adolescence is often considered the healthiest period in individual's lives, its significance in global health is increasing. Partly, this is because of relative decreases in this population's overall health and wellbeing, but moreover, health amongst this population is a good predictor for health trajectories across the life course [12].

Digital technologies are repeatedly highlighted as holding some of the greatest possibilities in improving health outcomes for adolescents [26]. Mobile content has been identified as one of the primary sources in which young people access health information [22] and, as such, the novel communicational and networking opportunities presented by the digital, particularly in increasing health literacy, have been emphasized as an under considered area for health promotion in adolescents [16].

Sexual and reproductive health is a key priority for this population, particularly through changing patterns in risk in reference to sexually transmitted infections and unplanned pregnancy [4]. Changes in the sociocultural, political and legal contexts have been shown to play a key role within these new vulnerabilities [26], and here digital technologies have also played no small role. Popular representations in new social media are argued to be changing young people's attitudes around sex and sexuality, particularly around casual sex. For example, 'new' public health problems such as young people taking and sending sexually explicit photographs of themselves, or sexting as it has been termed, have been described by some as a new public health 'epidemic' amongst young people [33].

The provision of sexual health information and sex education is seen to come from two countering perspectives. On the one hand, there is a perceived need for access to 'correct' or 'trustworthy' authoritative information, often with the overriding objective of reducing sexual activity amongst young people (sometimes referred to as a 'restrictive' approach to sexual health and sex education). On the other, a 'permissive' approach argues that we should acknowledge young people as sexual beings, and put their needs and perspectives at the fore [1, 13, 14]. In grappling this tension, our paper details our digital response to adolescent sexual and reproductive health, a game we designed in conjunction with young people to promote 'healthy' discussions around sex and sexuality. We detail how, whilst proving popular with our participants, use of the game in youth group settings reproduced many of the tensions characterising this space. We pose these as lessons learnt for IDC, and HCI more broadly, in responding meaningfully to the complex and multifaceted design space of sexual health in adolescents. We propose the benefits of lightweight digital approaches for face-to-face interaction, suggest how all stakeholders can control the level of these communications, and suggest that when problematic interactions arose, these presented opportunities to our agenda of promoting discussion about sex and sexuality.

Sexual and Reproductive Health in Adolescents
Adolescents are defined by the WHO as individuals between 10 and 24 years old. This population poses an important yet also challenging setting for sexual and reproductive health. This age bracket covers a key transitionary period across the life course, particularly from a legal perspective, spanning from official 'childhood' to 'responsible adults'. Furthermore, perspectives from young people within this bracket can vary drastically, with adolescents often maturing sexually at very different times, which is influenced largely by socioeconomic factors [26]. This has resulted in the majority of sexual health interventions focusing the biological 'facts' of reproduction, the risks and dangers of unprotected sex, and often focuses on abstinence [13].

This 'restrictive' approach has been widely denounced by scholars working in critical sexuality [1]. It has been argued that a focus on abstinence reproduces unhelpful constructions surrounding male and female sexuality, for example, the view that men are the active, desiring sexual agents in sexual relationships (see 'the male sex drive discourse' [17]), which by virtue means that (heterosexual) women are required to protect themselves against men's sexual desire. There is also evidence to suggest that a focus on the risks and dangers surrounding sex, such as unwanted pregnancies and STDs, does not reduce sexual activity amongst young people, only that it discourages contraception use when young people come to have sex [21]. Moreover, a focus on the mechanics of 'sexual intercourse' we privilege a 'heteronormative' model of sex education, promoting heterosexual sex as the only legitimate form of sexuality [12]. Therefore, Taylor [28] has argued that by rejecting young people as being sexual beings, we are harming young people's overall sexual health. A preoccupation with the physical 'act' of sex, often reduced to be the insertion of a penis into a vagina [24], also prevents a focus on matters surrounding sex, such as relationships and intimacy [30].

Sex is not a Natural Act
Leanore Tiefer has made the influential claim that contrary to how sex is culturally constructed, that 'sex is not a natural act' [30]. By this she argued against the typical rhetoric of sex as an innate, and the idea that there is a standardized or inbuilt model of sexual response. Instead she argues there is very clear evidence that sexual behavior varies hugely from person to person. In contrast to being an inbuilt biological urge, cross cultural studies have shown us that sex is fundamentally shaped by the social context [21].

To these ends, Tiefer argues that the construction of sex as an inbuilt biological entity has resulted in most cultures simply not talking to young people about sex, with a "history of silence and embarrassment", based on the assumption that nature will simply 'take its course'. In [31] Walker suggests that young people in particular have desires to talk about sex with their elders, yet often find they are not able to have open and frank conversations about sex and sexuality, due to all parties, be it parents, schools or siblings, 'offsetting' responsibility for these conversations to others. She argues that the result of this is that needed conversations simply do not happen, and that the consequences of this are two-fold. Firstly, she argues that this prevents people from having a fulfilled sex life. The literature surrounding couples' sexual difficulties suggests that the major obstacles in couples' sex lives is simply being able to talk about sex - a topic we have been taught is 'embarrassing' or 'dirty' from an early age [20]. But more pressingly, she argues a consequence of embarrassment is people being exploited. By classing sex as a topic we don't talk about, conversations about consent, sexual violence and exploitation are reduced to the margins.

In contrast, cultures where sex is talked about more openly boast better overall sexual health. The Netherlands have some of the lowest rates of teen pregnancy and STIs, with research also suggesting that young people are more likely to delay sexual activity later than those in the US or UK. A cross-cultural study between the UK and the Netherland's sex education materials showed that the Dutch model of sex education taught about sex at a much earlier stage than in the UK [21], and that they also taught about the pleasurable aspects of sex. In response, Fine and McLelland [14] advocate 'a discourse of desire' in relation to young people and sexuality, acknowledging aspects of sexual pleasure, recognizing young people (particularly young women) as sexual agents in their own right, and being inclusive of sexual minorities. To these ends, we suggest that permissive, positive discussions for young people around sex and sexuality is an important goal for improving overall sexual health, and as will now be discussed, an opportunity for HCI.

Sexual Interactions and HCI
Digital technology provides clear opportunities for having conversations about sex. Previous research in HCI has examined the role that digital self-presentation plays in interaction around intimacy and sexuality. This has included how romantic relationships can be supported by technology, from their initiation [23] to their sustainment over time and distance [25]. The anonymity technology offers has been explored by [19] in investigating how explicit talk about 'making love' was expressed in various ways through a dedicated anonymous posting website, whilst [2] has investigated the (often) sexual content on anonymous Facebook 'Confession Boards' [5]. Research examining location based social networks such as Grindr and Tinder argue how self-presentation and anonymity become complicated in these online spaces [7], with [6] arguing that the prominence of these apps should now lead us to consider sex as a significant motivator in of itself for interaction with technology. An examination of these existing systems indicates how technology can create new or distinct ways for people to have interactions around sex,

yet despite this HCI has made little way in terms of scoping a design space or response to these identified opportunities.

Sex Education and Technology

"Serious Games" have been one of the few HCI responses to sex education [29], using a computer game, some 20 years ago, to "increase [young people's] skill and self-efficiency", while more recently [3] using a gameshow format to reduce 'risk' of sexual coercion. Design concepts from social gaming may also have good application to the context of young people's sexuality; for example, 'play' has been used extensively in therapy settings to improve wellbeing, through 'playing out' concerns and anxieties [9]. Yet an objective of 'playfulness' has also become a more common focus for HCI research in recent years [8]. Specifically, humour and play have been evidenced as promising strategies for 'taboo' design [10], with Almeida et al. [2] arguing that humour provides an effective tool for designers wishing to diminish social awkwardness around sensitive areas.

This positioning underpinned a perspective for our work. We wished to respond to the design space of young people's sexual health with a playful and permissive approach, orientated around young people's perspectives. Moreover, we wished to explore the opportunities of digital play and humour in this context, in seeking to encourage 'positive' interactions around the topic.

TALKING ABOUT SEX

We therefore identified 'talking about sex' as an agenda for inclusive, permissive sex education, and identified games and play as a suitable mode of response. The development of our design concept was a collaboration between the authors. The first author is a sex and sexuality researcher, with experience in working with young people. The second author is a games designer with interests in designing for improvised play and using games with card-based playful interactions. The third author is an interaction designer who focuses on designing for digital health and wellbeing. The work was informed by the critical literature around sex and sexuality, and 12 design workshops where we workshopped and tested several playful techniques for promoting interaction about sex and sexuality with young people.

As previously mentioned, the WHO defines adolescents as individuals between 10 – 24 years old. Since research around this topic with such a diverse age group would be a considerable ethical challenge, the decision was made, in the first instance, to work alongside local authority led youth groups who work with 13-19 year olds. Although this is a wide age bracket, all the young people in these groups knew each other, and regularly came together to talk about a range of social issues, including sexual health. These groups were also organised age appropriately, with only young people of similar ages participating in the same group as one another. This made them an ideal starting point for this design work, as we sought to develop a design which could be extended for adolescents' discussions about sex and sexuality across a broader context.

Our engagements with the youth groups started with the youth group leaders. We had several meetings where we discussed the nature their engagements with adolescents, and how they ran their sessions. We then conducted 3 design workshops with 4 youth groups, who comprised of adolescents from both urban and rural environments and from a range of socio-economic backgrounds. Altogether we engaged 21 adolescents in these sessions.

Building on the existing activities used by youth workers, we developed a series of design activities to trail with young people, each designed to promote discussions about sex and sexuality. These were (1) a body mapping activity where young people were asked to plot their ideas of sex and sexuality onto inflatable mannequins, (2) an activity where young people were asked to timeline when they learnt about sex and sexuality and where from and (3) an activity using Lego where participants were asked to design some sexual health interventions. These workshops were looked at broadly for the types of interactions we found amongst our participants, and we identified two sensitising concepts: that of *inclusivity* and *digital playfulness*.

Inclusivity

There was a broad diversity of the topics covered by the workshops. Although our sessions were orientated around generating conversation about sex and sexuality, these engagements led to topics, as directed by participants, around body image, appearance concerns and mental health, alongside many other areas. Whilst a design response may not address all these complex matters, it did prompt us to extend our conception of sexuality for young people. While some young people presented themselves as experienced sexual beings, e.g. "I know what I'm doing!", others presented themselves as uninterested by sex, e.g. "Still now, I don't find sex appealing at all". Ideas of sexuality and intimacy often presented themselves in subtler ways, such as talking about the role of friendships or in using social media.

Digital Playfulness

The use of digital technology, particularly social media, was a prominent part of these youth group settings. This was illustrated most strikingly in a visit to one group where first arrivals immediately logged into Facebook on the available computers. Mobile phone use was a prominent part of these workshops, with participants regularly taking pictures on their phones, messaging friends, playing music from their phones and using social media. Although occasionally disruptive e.g. "Youth worker: Come on, get with the programme!", we were particularly interested in how digital technology organically introduced opportunities for social play in these community settings, for example sharing pictures of artefacts they had produced in the workshop on social media. This reinstated the assertion that

mobile technologies were a particularly suitable medium in which to focus our prototype.

The Prototype

Building on these insights from the workshops in conjunction with the dialogue in the critical sexuality literature, our prototype was a result of numerous design sessions and discussions, paper based prototyping and body storming. 'Talk About Sex' is a multiplayer game, developed for iOS, designed initially for young people to play together. Using a peer-to-peer network over Wi-Fi or Bluetooth on players' devices, the game begins by instructing all players to turn their phones face down. After a three second pause, one player's phone vibrates and makes a short sound, indicating that it is their turn. Once they turn their phone face up, it presents the player with a task presented in Figure 1. To progress, all must return their phone face down where the process is repeated with the next player. This continues until all tasks have been played through. Figure 2 shows screenshots of how these tasks were presented to players. Further details about our game design can be found in [32].

The set of tasks for our initial prototype were devised by the authors, informed by the above findings of inclusivity and playfulness. Due to the diversity of perspectives presented to us in the workshops it was important that our tasks retained a sense of inclusivity. None of the tasks explicitly referred to sex, instead using more ambiguous terms such as 'moment' (tasks 4, 7) or 'tickly bits' (16). Additionally, it was important that our tasks had an element of playfulness, particularly through digital play, such as using the phone's camera or drawing functionality, but also tasks which explicitly encouraged head up [27] interactions, playing with the social setting of the game.

GAME PLAYING SESSIONS

We conducted two phases of game playing sessions with young people. In phase 1, we presented young people with the game with tasks generated by us, to explore broadly how the game was appropriated and played in youth group settings. Then we conducted phase 2 where, after playing through the tasks as devised by us, and describing our rationale to the young people, we invited participant-led content for the games' tasks.

We have played 'Talk about Sex' with a total of 46 young people across these two phases of game playing sessions. Four groups participated in the first phase (n=24) and three in the second phase (n=22). These sessions have been conducted in the three different locations where we held the initial workshops, and in one additional setting. All young people participating in the design workshops were invited to this gameplay phase, but most players were new to the project. Each of the sessions was audio recorded, and we made field notes around the interactional qualities of the gameplay. After play, all groups were also asked about their experiences of playing the game. This data was then analysed using thematic analysis, which we organised into

three 'themes' around the most pertinent interactional elements in these settings: *'physical' play*, arguably *'problematic' play*, and *'exclusion' & a lack of direction*.

Overview

Overall, the game was met by enthusiasm from most participants. At the young people's request, the game was often played multiple times, starting with a different player each turn: "I really want to play the game again!" / "I'd like to do it again". On one occasion, the youth workers had trouble to get young people stop playing the game to move on to the group discussion: "Come on, put it down now!" When we asked how and where this game could be played, one participant told us: "I could imagine all our friendship group at school playing this game", and another: "This would be brilliant cos we have like free periods where we basically should be doing work but instead we get games on our phones that everyone can play". We were particularly pleased by how the young people framed this game as 'not' education, i.e. they "should be doing work", as it was our aim to distance our prototype from the traditional, restrictive discourse of sex education. Youth workers were also positive about the game: "If you could get them to sit that long and do that it says a lot about the resource".

At the same time, some, typically older, participants (16+), were more cautious of the game, responding less enthusiastically than younger players. For instance, in post-game discussions a 17-year-old player commented: "I just think that I wouldn't play it, because (.) I just think I'm a bit old". Similarly, in almost all groups, at least one player suggested that the game "wasn't really talking about sex" or could go further in how 'extreme' it was. Furthermore, some 16+ young people and youth workers appeared somewhat unsure about the 'purpose' of the game, suggesting it should focus more directly on the delivery of information. Here, we consider how the game was experienced by both enthusiastic participants and those more cautious, before indicating some of the challenges and opportunities encountered in our second phase of game playing where we invited participant-led game tasks.

Phase 1: Gameplay

There was almost always a palpable sense of curiosity as the game began, and in the livelier groups participants were often excitable, turning their phones over prematurely to see what might have happened. When the first device indicated a player's turn, there was often a tentative negotiation over whose device had buzzed. Play in all groups began hesitantly, as the players got familiar with the protocol of turning over their phone, completing the task, and then placing it back face down. Players showed signs of anticipation before their go, often showing visible signs of apprehension before turning over their phone, e.g. "oh shit!" / "I'm scared of what it's going to say!" Participants also often non-verbally enacted shock, embarrassment, surprise or confusion as the tasks were revealed. As the game then progressed onto the second and third turn, more

1. Write the name of your first kiss	13. Sing, hum or whistle your best sexy theme tune
2. Blow a kiss to another player	14. Stop playing the game. Return in 1 minute (timed)
3. Read out loud this paragraph:	15. Choose a song from your mobile that you associate with someone or romance
Alexis brought me close to their neck, and I smiled as I took in the smell of their sweet aroma, once more. I let out a contented sigh as my thoughts irrevocably slipped to my Skye. What would they make of our blossoming relationship?	16. Draw some tickly bits on your phone
4. Mark on Google Maps where you've had a 'moment'	17. Simulate a massage with your phone
5. Take a photo of a body part	18. Draw something to do with sex, intimacy or sexuality NOW and quickly
6. Hold your phone and draw a love heart in the air	19. Swap phones with another player and don't give it back to them until the end of the game
7. Get everyone to leave the room then describe poignant or daring intimate moment to another player	20. Take someone else's phone and record a private message for them
8. Draw a body part	21. Take a selfie on someone else's phone
9. Use google image search to find a photo of a romantic location	22. Hold hands with another player clasping the phone and swing your arms together
10. Shout a pet or slang name for a body part	23. Shine the light to illuminate a part of your body
11. Wink at one of the other players	24. Write a message to someone important in your life
12. Choose a friend(s) – then place your phones in your pockets and swing together to an imaginary beat	

Figure 3: The 'final set' of tasks presented in the prototype version of the game

enthusiastic groups relaxed into the rhythm of the game, with rapt attention, and often laughter as each player completed their task. In less enthusiastic groups it took rather more time for participants to 'get comfortable', yet gameplay almost always reached the stage where participants were playfully completing tasks. A notable exception was with one group of 16+ young people, where almost all tasks were hastily passed without completing them, much to their amusement, before playing them through again 'properly'.

Physical Play
Younger groups (under 16) typically displayed enthusiasm when joining in activities together. Although many tasks were individual, often all players wanted to play the turn, such as all shouting names for body parts (task 5) and often players took full opportunity to play in physical space. For instance, when the game asked for all but two players to leave the room (task 7), in one lively group of young men a participant shouted: "Right, everyone out!", while other members of the group attempted playfully to hide under the table. However, in a group of older teenagers this task was met with a 'sigh': "Do we really have to leave the room?", who collectively then changed this task to "two people leave the room" as some players didn't want to get up.

As such, it was the more physical activities such as swaying, dancing and singing that were most often 'passed'. While some participants took to these requests enthusiastically, all joining in singing a popular pop song for example, participants did sometimes skip these or completed them warily, reluctantly humming a nondescript tune as a 'sexy theme tune' for example. On one occasion, a young man repeatedly turned the device face-up and face-down many times (tasks 12 through 16) to find a task that "wasn't rubbish". Our attempts to utilize digital play also had mixed success. Whilst almost all groups were happy and excited to "take a selfie on someone else's phone" (task 21), the task to "mark on Google Maps where you've had a 'moment'" (task 4) noticeably held up the rhythm of the

gameplay, as participants navigated to the app and took time in finding a location. For other tasks navigating outside the app was dismissed as "pointless", for instance in the task 'Use a Google image search to find a picture of a romantic location' (task 9), where on two occasions participants changed the task themselves to "just name a place" as that was "easier".

Perhaps one of the most successful tasks was task 2, blow a kiss to another player, played on by most groups as a humorous display of affection, but also introduced a surprising dialogue around sexuality between a young man, who didn't want to complete the task, and the youth worker: "Just cos you're blowing a kiss to someone doesn't mean it always has to be a sexual thing". It was therefore often the simplest tasks which led to the most successful gameplay. Whilst more complex activities using maps (task 4) and image searches (task 9) stalled gameplay, the 'selfie' task (task 21) and 'take a picture of a body part' (task 5) were typically more successful, where the process was less involved.

'Problematic' Play
Our invitations for digital play also led to some difficult scenarios, most prominent in our evaluations with groups of young men. In swapping phones with another player (task 19), one participant repeatedly entered the wrong passcode into his friend's phone, so he was temporarily locked out of his device, resulting in mild upset. In another group of young men, the task to 'take a photo of a body part' (task 5) was met with the suggestion to "take a photo of your penis brah!" As the young men got to their feet, suggesting they may do something inappropriate, slight chaos ensued as the youth workers intervened: "Seriously, not your penis" / "If the police caught you with that".

The conversations and interactions that the game initiated were broad and far ranging, from the sexually explicit to discussions that avoided the topic of sex altogether. For instance, responses to tasks where players were requested to

Figure 2: Screenshots from 'Talk About Sex'

describe a 'moment', varied from subtle, nondescript accounts: "I don't really have one. Lying on the grass. There we go" to very sexually upfront: "The first anal in my life". We witnessed some conversations about participants' first kiss: "I remember mine, it was quite embarrassing", or relationships: "Was that your boyfriend? How long have you been together?" Yet overall, conversations did not extend far beyond the tasks set. Moreover, in some instances our 'ambiguity' resulted in participants going somewhat 'off topic'. The 'pause' we inserted into the game (task 14) intended to prompt reflection on the gameplay often resulted in conversations around other things: "I'm really tired" / "I'm getting my nails done tomorrow". Likewise, when one participant commented that they "don't have a moment" in response to task 4, their conversations occasionally forayed into the obscure: "P1: Just make up one! P2: Right, there was a donkey, it turned into a unicorn before my very eyes".

'Exclusion' and a lack of direction
Some participants had difficulty interpreting some of the language in the game, such as the word 'poignant' (task 7), and although the term 'moment' was intended to "mean anything" as one participant acknowledged, the lack of direction meant some thought the task didn't apply to them: "I don't have one" / "I haven't done anything". Some participants expressed frustration at this lack of direction, with one commenting that task 20 "didn't tell me what kind of message to record". Therefore, the game was sometimes accused of "not talking about sex" or "what to do".

Simultaneously, however, some expressed our game had gone too far. One (older) participant refused to read out the 'bad sex' paragraph (task 3): "Oh gosh! Oh no, I don't want to read it", commenting that the text was "So dirty, how are 14 year olds going to cope with this?" On another occasion, a participant exclaimed "I am not doing that! Take a photo of a body part, as if!" Although another member of the group reflected to the participant the ambiguity of the task: "It could be any body part!", this vagueness, particularly surrounding the taking of photographs, was clearly less than ideal, as our 'problematic' example illustrated earlier. Additionally, the seemingly innocuous task "Write the name of your first kiss" implies some level of experience, and indeed sexuality, which was flagged as potentially difficult by some participants: "[our friend] hasn't had her first kiss yet, it's quite a big deal for her".

Summary
Reflecting on these initial play sessions, the premise of the game appeared to have promising design elements which were interesting and leading to good gameplay. Asking players to interact with each other's phones during gameplay drew on broad ideas of intimacy and trust, flipping the device before revealing tasks added anticipation and momentum, and tasks around physical play were generally received positively, particularly for younger players. Yet there were also several problems with the tasks we drew up. Activities had mixed rates of success when they were perceived to have higher 'barriers to entry', whilst others appeared to legitimize arguably problematic behaviour. Curiously, in taking an indirect approach with the hope participants would mediate these interactions at a pace comfortable to them, we had managed to be simultaneously too tame, with tasks "not talking about sex" or "not telling me what to do", yet also too extreme: "She hasn't had her first kiss yet" / "That's so dirty, how are 14 year olds going to cope with this?" Based on these findings, we felt we could involve our participants more through a second round of gameplay and design sessions.

A further challenge in these play sessions was the unpredictable nature of youth groups, meaning the environment was less than ideal for a multi-device networked game, particularly one played on young people's own phones. Young people often joined and left the game haphazardly, meaning the ad-hoc networking was disturbed and the flow of the game interrupted. Additionally, we had underestimated just how much young people relied on their phones. Notifications came through young people's devices at an often-rapid rate, causing further disruptions, and young people indicated that even ten minutes was a long time to go without access to their phone's functionality. Due to these factors, although gameplay always began on individual devices, often it continued a single device shared by players, using their own devices to complete tasks. Therefore, in this second round of evaluations, we decided to present the game as a single device experience.

Phase 2: Participant Generated Content
This second set of play sessions followed a process where young people played through our set of tasks on a tablet or phone, and used their own devices to complete tasks. After reflecting on the gameplay, the group was then asked for their suggestions. We explained our rationale for creating

tasks, that we tried to make them playful, inclusive and use the digital affordances of the mobile phone, but we did not dictate these as conditions for their tasks. We asked participants to imagine playing the game with their friends, and to write down on cards either specific tasks they thought the game could play through, or more general topics/areas they thought the game should address. Where the group was big enough, we split the group in two so that each half could play through the other half's suggestions. The workshops were audio recorded and observational notes were taken. Suggestions from participants resulted in 67 participant-driven tasks, which were collated and analysed thematically into: "Personal sharing", "Playful tasks" and "Health orientated tasks", which we will discuss.

Play on a single device

In comparison to the networked gameplay on individuals own mobile phones, we saw the single device version leading to more flexible gameplay, meaning everyone, no matter what their make of device, could use their own phone to complete tasks. It also meant young people could spend more time on them, such as recording a message for a friend, whilst gameplay continued centrally. This led to hastier, non-disrupted gameplay, and tasks revealed in the centre were seen by everyone, meaning completion of them was more collective. This also resulted in turn-taking negotiation by players, which was typically policed rigidly, and led to instances of players 'trading' tasks: "I did the last one, now it's your go!" In this more 'public' version of the game, young people also often insisted that the youth workers joined in as well.

Playful tasks

A minority of players' suggestions (11) had a 'playful' element. Some were like our task, 'Blow a kiss to another player' (task 2): "Say I love you to a friend" / "Say 'you are beautiful' to someone", whilst others introduced a guessing element: "Get a friend to guess your crush". There were also some suggestions for 'physical' tasks, particularly around movement, such as "Do Gangnam style" / "'Dab' [dance] with your friends". Yet other tasks did start to verge on something that might be inappropriate: "Take off one piece of clothing" / "touch a body part of your choice". The latter task was commented on specifically by a youth worker as something he couldn't do in this setting: "It would have undermined my safeguarding role in the group". Only three tasks suggested use of mobile phones: "Text from another player's phone", "[give a player your] unlocked phone" and "let someone send one message".

Personal sharing tasks

More tasks (21) requested a level of personal sharing. Young people's suggestions were generally more upfront than our 'set'. The use of our word 'moment' was interpreted more specifically to "share an embarrassing moment" or "school moment", and was also extended to a "tell the group a once in a life experience you have had". Requests to share also became more specific to "share something you regret" or to "tell a story about your first

kiss", whilst others became more dark, e.g. "Who do you hate?" The 'act' of sex was focused on more specifically by some, typically older, members, such as more vaguely suggesting tasks around "your ideal first time", or perceptions around "first time – hurt?"

Other tasks started to verge into close-ended 'truth or dare' territory, again more especially around the act of sex: "How many times have you had sex?", "have you had sex while drunk?", "what age did you 'lose it'?", "Name one famous person you would have sex with". The topic of 'talking about sex' was also touched on in some tasks, rather than giving more specific suggestions for activities or conversations: "Do you talk about sex? If so, who with?". The tasks which prompted some sense of personal sharing were perhaps the most successful when played through, prompting several conversations around celebrity crushes and regrettable experiences, e.g.: "Oh man I've got so many!" / "You've got to name yours now."

Health orientated tasks

The tasks suggested by youth workers, and some 16+ young people were largely 'health' orientated, or around the provision of information. One youth worker in particular, "Joel" (pseudonym) was seemingly unsatisfied with the game simply being a playful experience, asking, "What is it that the game really supposed to do? [...] I think it should be about misconceptions about sex". Countering our 'playful' approach, Joel suggested two knowledge based tasks: "Explain the C-Card scheme [UK condom distribution scheme]", and "What is the legal age of consent in the UK?". He also suggested that the game could instead be a 'fact or fiction' game around specific statements, a suggestion given by a few youth workers and health professionals in response to seeing our game. This rhetoric was supported by a minority of young people, typically older teenagers, who also suggested some knowledge testing tasks such as "What does STI stand for?", and questions more focused around morality such as "what do you think of teen pregnancy?" Some young people expressed dissatisfaction at these 'health orientated tasks', particularly Joel's suggestions, with one young person suggesting: "That sounds boring!" in response. This dialogue mirrors debates in sex education and, as we will discuss, the game embodied such tensions around what role technology for young people's sexuality 'should' have.

Playing Young Person-Led Tasks

In most workshops, numbers were sufficient to enable us to split the group in half so that young people could play through each other's tasks. Tasks were placed in the centre and participants played through these as if they were a card game. Participants typically took to playing each other's tasks with considerable interest. Sometimes the tasks were questioned by each half of the group, for example: "Can I just ask, boys, who wrote 'remove one item of clothing'?" However, some of the older players who were more hesitant when playing through our initial set of activities took to

these 'user-centred' tasks more enthusiastically. This was particularly evident with those that required a level of personal sharing, and in some of the 'moral' questions such as 'What do you think of teen pregnancy?': "I have some serious opinions on that, don't get me started!"

DISCUSSION
We present our process of user-centred design as a successful enquiry between young people, researchers and youth workers on the topic of young people and sexuality. 'Talk About Sex', has resulted in enthusiastic, lively and fun gameplay, particularly from younger participants, with tasks providing a focus for interactions. Nevertheless, we have also encountered ongoing challenges working within this space. Gameplay sessions did at times have a lack of focus, while some tasks led to exclusion and legitimized 'problematic' behaviour. Moreover, the presence of technology in these settings epitomized many of the tensions around young people's sexualities, and the perceived role technology should be having. We present these as lessons learnt, suggesting adolescents' sexuality as a fruitful, if challenging, design space for HCI.

Lesson Learnt: Lightweight Digital Play
'Talk About Sex' began as paper based prototyping, and participant-generated tasks were played through as a card game in the latter stages of our process. Our game is therefore in some ways like analogue-based discussion games, such as 'spin the bottle' or 'truth or dare'. Despite this, we argue there are many benefits to our game as a digital experience. Not insignificantly, the very act of delivering a game through a piece of technology provided a focus for some participants, with one youth worker commenting it said "a lot about the resource" that it "could get them to sit that long" while another jokingly remarked that she'll "do all my sessions on an iPad now!" Moreover, the 'pause and reveal' mechanism provided rhythmic gameplay and a sense of anticipation before each task, which was lacking in our early prototyping sessions. Indeed, one of our early testers commented "it's way better on phones than cards!" This was particularly evident when the game was played uninterrupted on a single device, where the timing of the game provided a fast, but clear, directive pace to these interactions. With the game audibly indicating a player's turn, all players were given the opportunity to share, as directed through the device.

The digital medium also gave novel opportunities for play, such as introducing a timed 'pause' in the middle of the game (task 14), and requests to use the digital functionality of the phone. Tasks using the camera (task 21), messages (task 24), maps (task 3) and image search (task 9) all gave opportunity to explore how uses of mobile technologies intercept with intimacy. Yet we found that digital play was received most successfully when simple and easy to understand. For example, 'take a selfie on someone else's phone' (task 21), or 'shine the light to illuminate a body part' (task 23) were more successful in comparison to tasks

which required more involvement, such as 'mark on Google Maps where you've had a 'moment' (task 4). It was also notable that one of our most successful tasks was the non-digital 'blow a kiss to another player'. Therefore, in a game where we were seeking to encourage interaction between players, it was much more important to seek broader ways of promoting 'head up' [26] interaction through the device, rather than focus on more granular digital interactions.

Despite this, a card game also possesses qualities, which we are now looking to explore in a further iteration of this game. The analogue nature of physical games means they are easily reproducible by individuals wishing to use ideas in their own practice, and there are also rules which dictate traditional games which make external facilitation less necessary. In our deployments, the researchers and youth workers very much facilitate play of this game, whereas in a card game play sessions facilitated by young people may be more easily enabled. The tangible quality of cards in a game is also preferred by some. The interrelation of traditional card games and games with digital elements, and utilising the affordances of both effectively, is an aspect we are exploring in further work.

Lesson Learnt: Share Control of the Conversation
We took two different approaches to involving young people in our process of user-centred design, spanning the different levels of involvement Druin highlights in 'The Role of Children in the Design of Technology' [11]. In the first stage of our research we treated young people as 'research informants', whereas in the second stage of our research we treated participants more as 'design partners' by inviting their suggestions for tasks. We found that in each case these approaches had individual benefits and drawbacks.

The initial set of tasks we developed for this game were based around insights interpreted from our initial engagements and our interests in digital play. This resulted in several tasks that were successful, e.g. 'take a selfie on someone else's phone' (task 21), but also tasks that were too fiddly e.g. 'mark on Google Maps where you've had a moment' (task 4), and tasks that had problematic elements, e.g. 'take a photo of a body part' (task 5). Different tasks also had varying degrees of success with different participant groups. While one younger group took enthusiastically to our request for all but two to leave the room (task 7), some older groups were more cautious, i.e. "do we really have to leave the room?" Moreover, in all the groups, one or more players commented that our tasks "weren't really talking about sex", and some of our tasks were interpreted as exclusive - "I don't have a moment" / "[our friend] hasn't had her first kiss yet".

Taking a participant-led approach to the devising of tasks avoided some of these problems. In general, the tasks that participants wrote were more specific and had an element of personal sharing; for example, "share something you regret" and "celebrity crush" resulted in some of the

liveliest conversations. Equally however, some of these tasks had problematic aspects. Only a minority of tasks had 'playful elements', and many were closed ended, e.g. 'How many times have you had sex'. In most cases, this resulted in play which was rather more static, lacking an 'energy', and closed-ended tasks which didn't invite further discussion. Moreover, some of the tasks were defined by youth workers as actively problematic within a youth group setting, for example 'touch a body part'.

Many of the youth workers and some older young people often suggested tasks around health promotion, for example: "Explain the C-Card scheme" / "What services could you access?" This reflects arguments within the sex education literature discussed earlier, centred on the debate between a 'restrictive' discourse of sexuality seeking to control young people's sexual activity, or a 'permissive' approach seeking to legitimize and acknowledge sexuality [14]. When Joel, one of the youth workers, explained why he thought the game should have an explicit educative purpose, he said "because that's my job". Yet, this was simultaneously seen as a problem by a young person, stating that his tasks sounded "boring".

This variety of perspective indicates the complexity of young people and sexuality as a design space. None of these approaches is the 'correct' approach to take, rather, we argue the standpoints of these stakeholders needs to be balanced and shared. If we were, as is planned, to hand over control of this game, our users, be it young people or youth workers, are likely to use the game for their own purposes. This could be 'truth or dare' style tasks, closed tasks around specific sexual acts, or being used as testing adolescent's knowledge. It is a benefit that stakeholders are able to utilise the tool for their own purposes, yet in treating young people (and youth workers) as 'design partners', we argue researchers should be aware that in doing this, the outcome of user-centred design may no longer align with the agenda it was originally envisaged with. In this case, the game may no longer possess the playful and inclusive agenda it was designed with.

As discussed, the 'agenda' of our game was broad, in that we wished to open a dialogue about sex and sexuality with young people through the medium of a game. We have discussed the extent to which this was successful, with discussions breaking out in both helpful and perhaps less-helpful ways. Also, the necessity of human facilitation due to the nature of the game meant this inevitably shaped the conversations, such as the power dynamics between youth workers and young people. These are aspects that we are looking to explore in further work.

Lesson Learnt: Problems can be Opportunities to Talk
On several different occasions, our own conceptions of child sexuality, and how young people should behave in these settings, were challenged. One task appeared to legitimize unkindly locking another player out of his phone (task 19), and another prompted a player's threat to produce child pornography (task 5). We were also more than a little alarmed, as our readers may be, for an underage man describe "first anal" as a 'moment'. Yet the fact that these uncomfortable issues were raised enforces them as legitimate areas of enquiry in young people's sexuality, and highlights the importance of talk. Many young people did present themselves as mature sexual beings, and some youth workers reflected that young people's responses to the tasks reflected the complicated reality of sexuality, particularly in relation to technology. Discussing the incident around a player threatening to take a picture of his penis (task 5), one youth leader mentioned "that's a part of their life now, taking photos…so maybe do keep it [the task] in", and with one young man locking a player out of his phone, matters of intimacy and trust were actively played out even more than we were expecting. Therefore, although some of these tasks may appear on the surface problematic, they were perhaps one of the most meaningful sources of conversation with these young people, touching on the self-production of child pornography, and notions of friendship and trust.

CONCLUSION
In this paper, we extend previous work in HCI around sexuality, through suggesting young people, sexuality and technology as an agenda for the field. We have shown how in utilising insights from play and social gaming, and through taking an extended, multi-layered process of user centred design, we were able to produce work that distanced itself from HCI's more traditional, restrictive and problematic discourses around sex and sexuality [19]. Our approach took a 'permissive' approach [14], prioritised young people's perspectives, and respected their sexual agency, regularly lacking from 'interventions' in this area [21], particularly when sexuality is considered in conjunction with technology [29].

Young people's sexuality is a contentious topic, dominated by adult opinion, with conflicting views over how the topic should be approached. This research explored how this might be counteracted through a process of user-centred design. Our findings have highlighted the value of engaging all concerned stakeholders in this process of design, and suggested that even when problems arise in the process, this may be an opportunity to have productive and meaningful opportunities to 'Talk About Sex'.

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