

Equality = Inequality: Probing Equality-Centric Design and Development Methodologies

Rilla Khaled

► **To cite this version:**

Rilla Khaled. Equality = Inequality: Probing Equality-Centric Design and Development Methodologies. Pedro Campos; Nicholas Graham; Joaquim Jorge; Nuno Nunes; Philippe Palanque; Marco Winckler. 13th International Conference on Human-Computer Interaction (INTERACT), Sep 2011, Lisbon, Portugal. Springer, Lecture Notes in Computer Science, LNCS-6947 (Part II), pp.405-421, 2011, Human-Computer Interaction – INTERACT 2011. <10.1007/978-3-642-23771-3_30>. <hal-01590880>

HAL Id: hal-01590880

<https://hal.inria.fr/hal-01590880>

Submitted on 20 Sep 2017

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Equality = Inequality: Probing Equality-Centric Design and Development Methodologies

Rilla Khaled

Center for Computer Games Research, IT University of Copenhagen
Copenhagen, Denmark
rikh@itu.dk

Abstract. A number of design and development methods, including participatory design and agile software development, are premised on an underlying assumption of equality amongst relevant stakeholders such as designers, developers, product owners, and end users. Equality, however, is not a straightforwardly accepted feature of all cultural perspectives. In this paper, we discuss the situation of equality-centric methods in a culturally mixed setting. We present a case study of the Girl Game Workshop, a game development event intended to empower young women through game design and to promote diversity in game creation. While conducting the workshop, the organisers encountered numerous issues, which presented challenges to their assumptions of the desirability of an emphasis on equality during game design and development. In this paper, we focus on seven key themes relating to equality that emerged from an ethnography conducted during the workshop, including *location*, *cultural* and *classroom hierarchies*, *gender*, “*girl games*”, *stakeholders and boundaries*, and *risk mitigation*.

Keywords: equality, culture, gender, participatory design, agile methodologies, game design.

1 Introduction

Over the last several decades, there has been a trend in both design and development practice towards supporting flatter structures of hierarchy between stakeholders. For example, participatory design and agile development methodologies both rest on assumptions of egalitarianism between designers, developers, and end users.

In many settings, the assumption of equality is not problematic because it forms a conceptual fit with the local underlying social and cultural assumptions. But little has been reported about what happens when such methodologies are used in contexts where assumptions of equality cannot be taken for granted.

In this paper, we present a case study of a three day game development workshop, the Girl Game Workshop. The key objectives of the workshop were to give young women an experience of game development in the context of education and empowerment, and also to introduce more diversity of perspective to digital games.

The workshop was run at Den Islamisk Arabiske Privatskole (DIA-skole), a bilingual private school in Copenhagen specialising in delivering instruction in Danish and Arabic to students between the ages of 6 and 15. Ten female DIA-skole students took part in the workshop, all of whom had Arabic cultural backgrounds and were approximately 14 years old.

Using a methodology that featured elements of participatory design and Scrum, and with constant support from the organisers, the students developed two games from start to finish despite having no previous experience with game development. As one of the goals of the workshop was self-expression through digital games, the students were encouraged to make the majority of creative decisions. In the process of doing so, however, a number of embedded assumptions the organisers had made about the feasibility of applying methods premised on equality and flatness of hierarchy were challenged.

In this paper, we overview the current trend of equality within design and development methodologies in light of the cultural characterisations of Scandinavian and Arabic culture. Next, we provide a summary of the events that took place during the workshop. We then discuss seven themes related to equality that emerged from an ethnographic analysis of the workshop.

2 Background

Understanding the events that took place as well as our context of interpretation both during and after the workshop requires knowledge about several different topics. Here we present some general characterisations of the cultures of participants involved in the workshop. We also discuss participatory design and agile methodologies, both of which were very influential on our workshop process.

2.1 Culture

Culture, which has been defined as “the software of the mind” [8], is omnipresent. It is shared, learned, and shapes the way we think, perceive, and act. Cultural characteristics can be difficult to articulate for members belonging to those cultures, as cultural beliefs and values are often so basic as to be effectively invisible.

Over the last two decades, there has been an increased focus in HCI on culture and cultural differences, ranging from localisation issues and surface level conventions of culture [16] to deeper questions of how to address and incorporate cultural assumptions into design practice [22,12]. In many ways, this interest in culture parallels the growing consideration of situational and contextual factors in HCI, as supported by theories such as activity theory and distributed cognition [15,9]. Like culture, they point to the importance of context in making sense of action and use.

Turning more specifically to the cultural backgrounds involved in our workshop, we can briefly characterise both Scandinavian and Arabic cultures in terms of the work of sociologist Geert Hofstede and psychologist Shalom Schwartz. Scandinavian cultures (including Denmark, Norway, and Sweden) have generally been described as

individualistic, meaning that according to societal beliefs, the individual is more important than the group [19,8]. Further, Scandinavian cultures are described as egalitarian and flat in terms of power distance, that is, people tend to perceive one another as existential equals regardless of role or rank. Scandinavian cultures have also been ranked as somewhat low on the scale of uncertainty avoidance, indicating more tolerance of ambiguous or under-defined protocols and situations. Gender roles have blurry divisions, so rather than clear expectations about the roles of men and women, these roles are fluid, and overlaps and interchanges are not unusual.

Arabic cultures (including but not limited to Egypt, Morocco, Iraq, and Saudi Arabia) are generally strongly collectivistic, and place the importance of the group over that of the individual [19,8]. For example, when an individual has to choose between his own needs and those of the group to which he belongs, the cultural expectation is that he will prioritise the needs of the group. Correlated to collectivism, Arabic cultures feature rigid hierarchies and large power distances: unequal distributions of power and resources are accepted as legitimate, and the lack of upward mobility by society members with less power is accepted as cultural heritage. Arabic cultures also tend to be uncertainty avoiding, and place much emphasis on rule following and protocol adherence. Finally, in contrast to Scandinavian cultures, in Arabic cultures gender roles tend to be fixed and separated, in that there are clear expectations regarding acceptable roles and behaviour between the genders.

2.2 Participatory Design

Participatory design (PD), originally known as cooperative design, is a methodology that first emerged in Scandinavia in the 1970s, and has since experienced wide uptake especially within Scandinavia, the United States, and the United Kingdom. Many of its practices stem from a set of core assumptions, including but not limited to the belief that actions must be understood within their context of occurrence, that values should be democratically negotiated, that end users should be involved in decision making throughout the design and developmental process, and that methodological steps must be taken to ensure fairness of representation of developers, designers, and end users [14,3,10]. PD emerged as a result of action research addressing the concerns of workers and trade unions regarding the introduction of IT to the workplace, and fears that it would result in a decrease in the power, decision making, and participation of workers. It is an inherently political methodology, partly stemming from, and embodying the concerns and expectations of Scandinavian workers.

The incorporation of diverse concerns and perspectives of all stakeholders into the design process is central to PD. Wrapped up in these beliefs is an assumption of equality between stakeholders - not just between designers, developers, and end users, but also within these groupings. As discussed earlier, belief in egalitarianism is particularly characteristic of Scandinavian culture.

The assumption of equality is reflected in many of the tools and methods used within PD. For example, mock-ups and lo-fi prototypes afford collective modification from end users and designers alike, as their lo-fi nature means that no specialised skill is required for suggesting modifications [4]. Here, there is an effort to flatten skill differences between designers and users. Following in the vein of co-design, in Future

Workshops, users are invited to take part in design tasks with designers, in which they suggest design solutions for current design problems [11]. As another example, during on-site visit tasks, designers specifically seek to understand the working contexts of users, to develop clear and balanced views of the user and to ensure that their own design assumptions and perspectives do not conceal and override those of users [4]. In the final method we mention here, PD games, design concerns are presented within the context of games. This has the effect of flattening power differences and hierarchies, and facilitating contribution, sharing, and collective problem solving, alongside the formation of mutual understandings and vocabularies [5,14].

While the literature reports many successful applications of these methods, and indeed the success of PD more generally, it is worth noting that much of this research focuses on applications in Scandinavian or North American contexts. While there has been much lively debate regarding differences in Scandinavian and North American PD practice (e.g. [13,20]), the underlying values of egalitarianism remain present in both interpretations.

2.3 Agile Development Methodologies

Since the publishing of the Agile Software Development Manifesto in 2001 [2], agile methodologies have become very popular amongst industry-based game developers, and are also often used for academic game development [18]. While several variants of agile methodologies exist, including Scrum and extreme programming, most agile methods share a basic set of core principles.

One of these core principles surrounds the nature of development, which is assumed to be changeable, in that requirements may change over the course of a project. As such, development is often approached in a just-in-time manner and is conducted iteratively and incrementally, with an emphasis placed on producing deliverable, functional software at each iteration.

Another core principle is that teams are self-organising, allocating work amongst themselves and working on the assumption of a largely equal distribution of power between team members. Agile development teams do not pander to “star” developers and everyone must be aware of changes and developments. In some agile methodologies, development is approached through *pair programming*, where two programmers work together at one work station [1].

Collective code ownership is another characteristic principle of some agile methods, where code is owned by the team rather than any particular individual [1]. This is related to the cross-functional skills of team members, and the expectation that team members should be able to take over tasks previously worked on by others with minimal overhead. Thus, code quality and the maintenance of code functionality are prioritised, as code that has been checked into a collective repository may next be checked out by any other team member.

The final principle that we mention here, which has strong overlap with PD, is that close, ongoing contact is maintained with the client or customer throughout the project. In extreme programming, for example, at least one individual representing the interests of the customer is expected to be physically present at the development site 40 hours a week for the entire duration of the project.

3 Case study: The Girl Game Workshop

3.1 Motivations and objectives

The concept of the workshop arose in connection with a desire to address the imbalance in gender representation within the game industry, and also to address the lack of gender and ethnic diversity represented within mainstream games. Further, the organisers wished to provide young women with an experience of game development, for reasons of both education and empowerment. As a response, the organisers came up with the concept of a “Girl Game Workshop”, an intensive three day female-only event, during which students would become familiar with different aspects of game development. Specifically, they would create games from start to completion featuring narrative themes, game play, and audiovisual assets of their own creation.

Given that a major focus of the workshop was empowerment, both in terms of skills development and expression, it was important to the organisers that the students exercised a lot of creative and developmental control over the games. As such, the organisers settled on a design and development process featuring elements of PD and Scrum, but with design and development responsibility weighted heavily towards the students, and organisers limiting their input to guidance and facilitation. We point out that our use of the “workshop” concept differs from how workshops are often used within PD, that is, as means to facilitate stakeholders in communicating and committing to shared goals and outcomes [14]. Our intention was to use the workshop as a forum for support, and a space for creativity and game development. Further, we also note that by merging PD and Scrum elements into one process, it meant that we no longer had separation between end-user (player) roles and developer roles, as both roles were played by the students.

3.2 Host organization: the DIA-skole

The DIA-skole is a private school located in Copenhagen, Denmark that specialises in providing bilingual educational instruction in both Danish and Arabic. Established approximately 30 years ago, it was formed by a group of Denmark-based Arabic parents who wanted their children to have the opportunity to learn Arabic to a sufficiently high standard that they would be able to transition back into Arabic society if the need arose. Over the years, the initial focus on transition was replaced by a focus on maintaining bilingualism within a Danish context. Approximately 90% of the student population come from Arabic countries, while the remaining students come from countries in which Arabic is recognised as an important language, such as Pakistan and Bosnia.

After making contact with the principal and receiving preliminary approval to conduct the workshop with DIA-skole students on school grounds, two of the organisers presented the workshop concept to an assembly of students in order to gather interest. Following the presentation, students signed up to participate.

3.3 Workshop Process

The Girl Game Workshop participants were the organisers along with 10 female students of approximately 14 years of age. The organisation team was made up of six individuals: a game designer, an audio designer, a graphic designer, a game artist, a programmer, and the author who participated as a researcher. All three days of the workshop took place in the DIA-skole computer room, which was equipped with individual workstations, as well as other classroom equipment.

Each morning, the workshop activities commenced with a daily Scrum standup meeting in which everyone present stated their expectations for the day.

On the first day, the organisers introduced the students to some fundamental concepts in game design, focusing in particular on game objectives, core mechanics, obstacles, and resources. The students formed two teams, here referred to as Team A and Team B, and began a two-stage ideation process, which involved individual brainstorming around the concept of “home”, followed by team-level decisions connecting the brainstormed home associations to game concepts which were then paper prototyped. In the afternoon of the first day, the programmer presented the students with an introductory tutorial on Game Maker and fundamental concepts related to game programming. The students then began a series of programming exercises, which they completed individually at separate computers. During the exercise session, the programmer and other organisers circulated the room and assisted the participants.

On the second day, the organisers presented three more tutorial sessions on audio design, graphic design, and more advanced programming. After the tutorials, in accordance with agile development, each team determined their own role and responsibility allocations for programming, music, graphics, and story-related tasks, then began development. Development continued for the rest of the day under the watch of the organisers, who stepped in to assist when students specifically asked for help, when they appeared unable to progress further unaided, or when they seemed unproductive and/or distracted.

On the final day, the teams continued development work until the deadline in the late afternoon. During the morning, while Team A seemed on track for realising their game concept, it was less clear that Team B would finish without scaling down their creative vision and receiving significant assistance from the organisers. Thus, much of the morning was spent with the programmer and graphic designer closely directing and overseeing the work of Team B. Around midday, once it was absolutely clear that Team B would not be able to meet their targets, the programmer called a meeting with the team members and instructed them to make a prioritised list of features. Following a group decision, the team revised their vision and work plan. With about two hours remaining before the completion deadline, both teams focused on ensuring that minimal game functionality was complete, then turned their attention toward the creation of title screens and game narrative text. After the deadline had passed, the workshop wrapped up with a small party and an awards ceremony for the students.

3.4 Game Concepts

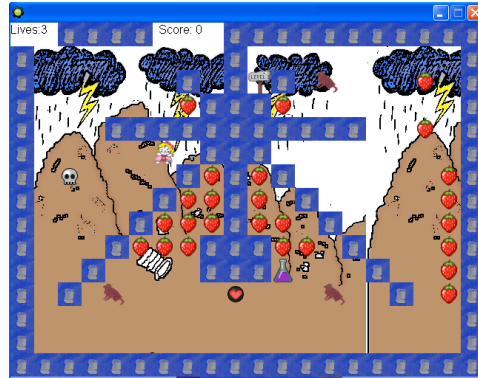


Fig. 1. Darbie in the dumpster in *Darbie Going Crazy*

Team A: Darbie Going Crazy *Darbie Going Crazy* begins with a doll named Darbie, with many similarities to Barbie, having been discarded by a disgruntled girl. The game opens with Darbie waking up in a dumpster, dirty and alone, and with a desire to get home. The game play takes place within two levels that draw on maze game tropes, with the player's objective being to get Darbie back to her house. During the journey, the player can increase Darbie's energy by picking up and eating strawberries, while sneaking past angry dogs, who are present at various points along the path home. The game also includes run-ins with characters inspired by Einstein ("Steinein") and Elvis Presley, who give the player mysterious and sometimes useless information. See figure 1 for a screenshot from *Darbie Going Crazy*.

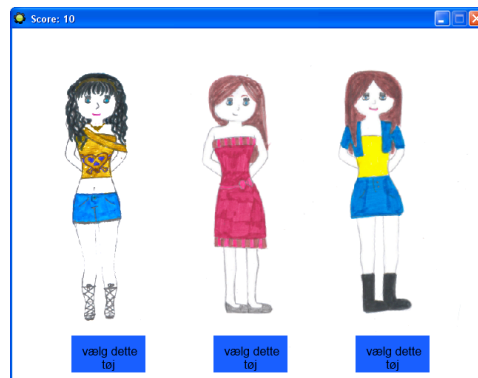


Fig. 2. Choosing an outfit in *Movie Night*

Team B: Movie Night *Movie Night* begins with the main character, a teenage girl, having been asked out on a date by the boy of her dreams. On arriving home, the

character is told by her father that she must complete housework before she will be allowed to go out on the date. The game features four interactive scenes, each focused on a particular point in the day. The first scene involves the player navigating the main character home through a maze, the second presents an interactive conversation between the character and her father, the third involves a dish washing challenge in which the player has to clean food remnants off a plate with a sponge, and the fourth concerns getting ready for the date, in which the player must choose an outfit for the main character from a set of three outfits. In the final scene the character meets her dream boy at the movies. See figure 2 for a screenshot from *Movie Night*.

3.5 Research method

The author was invited to participate in the project in the capacity of an ethnographer on the organisation team for the duration of the workshop. As culture is of central importance in this paper, we point out that the author is neither an ethnic Dane nor a Danish Arab. Prior to moving to Denmark, she spent most of her life in New Zealand, but grew up in a Muslim Bangladeshi household.

The author's objectives were to observe and capture the workshop process through participant observation and interviewing. She focused on maintaining an ongoing record of events, observing the effectiveness of the methodological process, and learning about the workshop participants and the DIA-skole.

The interviews with the workshop participants were generally unstructured, and conducted at regular intervals in response to the changing state of the workshop. The author's specific objectives with the interviews included learning about the students as individuals, their relationship to games and media, establishing their reasons for workshop participation, and more generally, gaining impressions of their experiences of the workshop as it progressed.

Due to the author's inability to speak Danish, all of the interviews were conducted in English. This progressed smoothly for some students and somewhat awkwardly for others, due to their varying levels of English and comfortableness speaking an unfamiliar language with an unfamiliar person.

After the workshop was over, all notes and observations made during the workshop were coded, analysed, and interpreted in accordance with grounded theory [21]. In grounded theory, during the theory building phase, the researcher attempts to avoid other related literature in order to maintain as clear and unpolluted a focus as possible on the specific data collected. In addition, an iterative approach is used for analysis, such that any emergent categories and themes arising from the codes can be repeatedly checked and cross-checked against the original data, to maximise the chances of a strong conceptual fit. A theory saturation stage is reached once core categories and their relations have stabilised over analysis iterations, and categories are able to accommodate new data. At this point, the important themes arising from the data are ready for discussion.

4 Results

Both of the methodologies that informed the workshop, participatory design and Scrum, rest on an underlying assumption of the importance of equality of perspectives between and within stakeholder groups. Over the course of conducting the workshop, we encountered various obstacles and mismatches in expectation related to our process. During the analysis phase, a picture emerged that connected the difficulties encountered to the core assumption of equality. In this section, we discuss seven key themes from the analysis.

4.1 Location

Site has been discussed in the PD literature as playing a key role in shaping how perspectives are shared and taken into account [14]. The choice of site usually involves a decision between bringing designers to the workplace, or bringing workers to the design site. Bringing designers to the workplace has the effect of allowing workers to feel at ease and contextualise explanations of their practice through references to specific tools and processes. In contrast, bringing workers into the design site shifts focus to more general conceptualisations of issues, which may in turn create possibilities for new insights and innovation. Muller notes that a more subtle consequence of choice of site is the inclusion of perspectives of marginal participants, i.e. stakeholders who were not initially considered core stakeholders [14]. Typically, design activity is undertaken at both sites.

The Girl Game Workshop was conducted entirely at the DIA-skole, as we had been granted exclusive use of their computer room for all three days. As such, the workshop was held in the “workplace”: it was a location that the students associated with daily practice and was unfamiliar to the organisational team. Conducting the workshop at the DIA-skole had a number of advantages, including reduced overhead costs for the workshop and reduced perceived barriers of entry for the students. While these reasons alone contributed greatly to the successful running of the workshop, the location as a workplace, and particularly as DIA-skole territory, also led to complications.

At no point during the workshop was it possible to forget that the workshop was taking place on school grounds. There were ever-present audiovisual reminders that we were in a classroom, including the room layout, the active PA system, and spontaneous visits from faculty members. In terms of equality of perspective, simply due to location, the DIA-skole perspective (not necessarily equivalent to the students’ perspective) was given priority.

As an example of this, whenever faculty members dropped by there was a mood change amongst the organisers. We felt an obligation to show that the school’s decision to host the workshop had been justified. For each visitor, one or more organisers stopped what they were doing to explain what was currently happening, to show off the progress the students had been making, and to discuss how well the students were picking up key concepts. Thus, we found ourselves giving preference to the DIA-skole perspective and feeling an implicit need to obtain DIA-skole approval. Even though our objective was to conduct a workshop featuring girls who happened

to be students of DIA-skole, inadvertently, the tone subtly shifted to being about DIA-skole students specifically.

But even if we were more affected by the location than expected, we did not uphold the cultural beliefs and norms of the DIA-skole. This was the result of the organisers and the faculty coming from very different cultural backgrounds, and a lack of planning for how to handle such situations. This clash was further intensified due to the unspoken rule often in operation when on unfamiliar territory, namely, that one should act in accordance with its norms. During one visit from the principal and the board members, for example, the principal paused to look over the shoulder of the graphic designer as she was retouching outfits drawn by a student that formed the outfit choosing sequence of *Movie Night*. The outfits were inappropriate by Muslim standards: one consisted of a mini skirt paired with a strapless top. The principal did not comment, and nor did we, but it was clear that the outfits did not embody the Islamic values that the principal stated in an interview formed a cornerstone of the school's profile. Although we had explained to the faculty members that the game concepts were completely under the control of the girls, in the instance of the outfit, it was difficult not to feel that the principal viewed the workshop as a negative influence.

This situation exemplifies a tension between the cultural context of the site and the workshop goals and process. In particular, it emphasised the different standpoints of the DIA-skole and the workshop organisers in terms of power distance and deference to superiors. The DIA-skole, and more specifically, the outward facing image and cultural values of the DIA-skole stakeholders align more with high power distance, hierarchical cultural patterns. Our workshop, on the other hand, was specifically aimed at encouraging flat power distance, equality-focused freedom of expression through design. At a micro level, the same tension arose when the author asked the student who drew the outfits whether she would wear those outfits herself: her answer was that she would not. For this student, too, there was a contradiction between real life clothing choices and the aesthetics chosen for the fictional game world.

At the same time, the existence of a clash in expectations surrounding content showed that the students were able to contextualise their activity outside of the DIA-skole culture and general school culture associated with the site. We propose that this was a consequence of a number of factors, including the open atmosphere we worked hard to create, and the relatively large number of individuals in the room who were neither DIA-skole faculty nor students challenging the notion that "school culture" was operative. Further, as the students were all bicultural individuals, we can expect that they were adept at transitioning between cultural frames according to contextual relevance [6]. Based on our more mainstream dress and behaviour, that is, we suggest that the students intuited that a DIA-skole Arabic, Islamic cultural framing was less necessary given the context, and that they decided to rely more on a Danish cultural framing to guide their actions and responses to the workshop.

4.2 Cultural hierarchies

The Scandinavian cultural value of egalitarianism pervades much of PD practice. For example, the practices of incorporating multiple stakeholders in key design decisions,

conducting design work at both work and design sites, and use of mock-ups and lo-fi prototyping are all manifestations of attempts to flatten power relations and promote equality. For the most part, the underlying assumption of equality has been accepted within the HCI community.

As discussed previously, all of the DIA-skole students and faculty had an Arabic background, and we reiterate that Arabic and Scandinavian cultures are in many ways diametrically opposed. We would expect that equality-centric development processes that implicitly endorse egalitarianism would encounter hiccups when used in Arabic contexts, due to patterns of high power distance within Arabic cultures. If we had adapted our process to suit DIA-skole culture, we would have paid closer attention to hierarchies, we would have incorporated the ideas of faculty into the design process, and we would have left workshop-related decision making up to more “powerful” stakeholders (i.e. not the students). These changes would have contradicted workshop goals, however, and more generally, ideals of equality-centric methodologies.

In section 4.1 we discussed the implicit pressure to uphold school values. Within the context of hierarchical cultures, this pressure may have been related to our own position within a DIA-skole hierarchy. All of the faculty members we met were both older than us and DIA-skole insiders, thus outranking us in the DIA-skole hierarchy. As a consequence of being lower in the hierarchy, we were expected by all above us to comply with the will of those with more status.

The students also formed part of this hierarchy, but were positioned below us, whereas their regular teachers were positioned above us. The hierarchy could partly explain why we sometimes had difficulty in getting the students to focus during workshop sessions. The students were accustomed to a more authoritarian style of teaching which we did not adopt and thus they viewed us as less powerful.

When collaborating with stakeholders, it serves to remember that by default people view others through their own cultural lenses. When stakeholders share the same culture, cultural assumptions are less problematic because they are shared by everyone. When stakeholders come from different cultural backgrounds, however, assumptions and accepted protocol become ambiguous, and this can lead to tension and misinterpretations.

4.3 Classroom hierarchies

The PD literature reports instances in which PD has been successfully conducted with children as participating stakeholders (e.g. [17,10]). In most of these cases, however, parents or other senior stakeholders have also been involved in the activities involving children. The students in our workshop were all approximately 14 years old, theoretically old enough not to require chaperoning. By default, we treated the students as we would adults, extending to them the same equality of perspective, freedom, and expectations of conduct, as this was in keeping with our cultural beliefs about student-teacher relationships.

Over the weekend, however, we were frequently reminded that the students were not adults. This ranged from the students’ inability to concentrate for extended amounts of time, to their difficulties with grasping abstract concepts and working individually, to occasional disrespect for tutorial presenters. On the afternoon of the

first day, for example, the students became quite distracted during a programming lesson. Two students were being especially disruptive at the back of the room, talking, watching videos on their mobile phones, and hitting each other, instead of paying attention to the tutorial presentation.

As we mentioned in section 4.2, our occasional lack of control over the students could have been related to cultural patterns of behaviour, and expectations on behalf of the students of more hierarchical student-teacher relationships. We were conflicted about how to handle situations requiring assertions of authority over the students. On the one hand, the workshop concept was devised around the assumption that there would be equality and partnership between workshop participants. In addition, it was important to obtain the students' trust and create a positive, nurturing working environment, as the workshop goals involved students expressing themselves and relating comfortably to games and game development. On the other hand, when the students were distracted and disruptive, it created an ambience wholly incompatible with workshop progress and a positive workshop atmosphere.

At the end of the first day of the workshop, during a review of the events of the day, we decided to adopt more authoritative roles and to be stricter about creating and adhering to boundaries. We also agreed to be consistent with one another with regards to expectation setting surrounding levels of authority, as we had concerns about students developing divisions in perception between organisers who were deemed "easygoing" and "trustworthy" versus those considered "stern" and "untrustworthy". It was important to us to present a consistent and united front, for the sake of workshop cohesion.

In making this decision, we were placed in the position of needing to renegotiate our beliefs on how we perceived the students, i.e. not as adults. Further, by deciding to assert more authority, we had to relinquish our principles of egalitarianism with the students, because equal partnership was not tenable.

Working with teenagers when using methodologies premised on equality can be complicated. Teenagers do not require chaperoning in the same manner as children, but we cannot assume that processes that have successfully been used with adults will have the same outcomes with teenagers. As we learned firsthand, conducting activities involving unaccompanied teenagers requires consideration of how and where one stands with regards to balancing equality, partnership, and trust. These are factors that are likely to arise when dealing with this age group, which in turn will have an effect on how the assumptions and methods associated with equality-focused methodologies can be operationalised.

4.4 Gender representations in "girl games"

A key objective of the interviews conducted with the students on the first day of the workshop was to establish the nature of the students' relationship with games. The interviews revealed that games played a role in most of their lives: some preferred to play alone, others played games with their siblings, while others had members in their immediate family who were avid gamers.

In terms of the games they played, almost all of the students identified the PC as their platform of choice, and over half identified "girl games" as their preferred genre.

By girl games they essentially meant “pink games”, i.e. games featuring heavily gender-stereotyped narrative and game play, for example related to dressing up and make up application. The discovery that the students were playing games with such limited perspectives on female gender identity served to emphasise our beliefs surrounding inequality of gender perspectives in digital games.

There are a number of possible reasons for why this particular group of students had gravitated towards girl games. One reason might be that they had a genuine interest in fashion and fashion design, but that the game industry has yet to provide interesting games pitched at an appropriate level of narrative and game play for a female, teenaged audience. Not finding anything within that niche, these students ended up playing girl games instead.

Another similar reason relates to games and their branding. Despite the growing sophistication of the game industry, digital games are still considered more the domain of males than females, and games are generally more likely to draw on themes and game play more likely to appeal to males. For girls who want to play games but wish to avoid hyper-masculine games, one solution is to seek out games specifically angled towards girls. One of the games showed to the author by a student was linked from a game aggregator site girlsgogames.com [7] that housed a plethora of similar girl games. In fact, performing a search on “games for girls” returns many sites like this one. According to the internet, at least, “games for girls” implies “girl games”. As such, this is what young women encounter when they seek out games under these terms.

The final reason we propose relates again to culture. As discussed earlier, gender roles are fixed and delineated in Arabic culture: men and women are expected to conform to masculine and feminine stereotypes, respectively. Given their cultural backgrounds, these students may have been socialised to be more interested in expressing their female identity in conventionally feminine ways, for example, in terms of make up and dress. Perhaps they found the subject area of girl games genuinely appealing. That we were surprised that the students played these games was at least partly caused by cultural differences surrounding gender.

4.5 Replications of “girl game” themes

As discussed previously, the students were given the theme of “home” as a design constraint. In terms of the workshop goals, however, we later felt we should have reconsidered the theme in light of its gendering connotations, particularly in the context of Arabic gender roles.

While Team A’s game concept was somewhat neutral in terms of gendering, Team B’s concept was not. In essence, Team B developed a modern day rendition of Cinderella, featuring a controlling father in the place of an evil step-mother and reinforcing a rhetoric of male dominance. In the context of the workshop goals of empowerment and the introduction of minority perspectives to the game scene in terms of culture and gender, Team B’s concept was problematic, and retold a narrative that the workshop was intended to counteract.

Why, when given freedom to create any kind of game, did Team B choose to mirror girl games? The easy answer to this question, that girl games are what they

like, may not tell the whole story. For members of Team B, we suggest that their very concept of games and how they must be designed was tightly bound to girl games, that is, the games they were most familiar with. On finding out that their task was to create a game in a “Girl Game Workshop”, they may have intuited that a girl game was what they were expected to deliver.

Furthermore, the concept developed by the students was undoubtedly influenced by the ideation method employed, which as discussed earlier, involved a stage of brainstorming associations to the concept of “home”, and a second stage of using the associations to inspire game concepts. Using the brainstormed ideas to directly inform the game concepts was perhaps too literal and limiting as a creative process, and may have served more as a transferral step rather than as an inspiration. Less gendered game concepts may have emerged if an alternative ideation method had been used, and if we had worked with students to “unpack” the brainstormed theme associations.

We note, though, that even assisting the students in “unpacking” design concepts might have resulted in too much influence on the game concepts. We tried not to intervene during any of the ideation stages, as we felt duty-bound to support the students in developing game concepts and narratives of their own choosing. Thus, by trying to ensure creative freedom, we created a perfectly safe environment for the students to express gender inequalities, and were bound by our own rules of creative non-intervention to support it.

4.6 Stakeholders and boundaries

When forming the workshop concept, the organisers decided to limit participation to females only, with the limitation applying to students and organisers. When organising the running of the workshop with the school, however, the “female only” atmosphere that we were wanting was not foregrounded as strongly as it should have been.

On all three days of the workshop, a DIA-skole teacher who also served as the school journalist dropped by with video recording equipment, staying for up to an hour each time to record footage of the workshop for a school news item. The first time he arrived, we were not sure who he was or why he was present. Given that we were unfamiliar with school protocol and felt that the school was already doing us a favour by hosting the workshop, we felt awkward about imposing conditions about room usage. As such, we never directly stated to the journalist that we preferred him not to drop by, and he continued turning up each day with his recording equipment.

His presence might have been less of a concern had it not palpably changed the atmosphere that we were trying to create. He and the students were on familiar terms with each other and each time he arrived the students sought his attention and vice versa, disrupting the workflow. As well as creating a distraction, he was opinionated about the game concepts and not hesitant about sharing his thoughts. For example, after playing one level of *Movie Night*, which involved the avatar eating candy to power up, he asked, “but won’t that make her fat?” This comment was far removed from the atmosphere of creative freedom that we were attempting to foster.

Had we told the journalist that we preferred maintaining an all female environment for the duration of the workshop, he likely would have respected our wishes. This

boundary was not established, however, and we felt powerless over these disruptions in our planned process and silently resentful during every visit.

While the journalist was not technically a workshop participant, as a DIA-skole faculty member and by virtue of his presence at the location, he became a peripheral stakeholder. While PD places importance on equality of representation of stakeholder voices, his was a perspective we were actively seeking to avoid. So, although balanced representation of diverse perspectives amongst stakeholders is a positive intention, it can also lead to conflicts of interest. To uphold the empowerment goals of the workshop, we would have, in fact, needed to specifically exclude some stakeholder perspectives, thereby supporting inequalities.

One solution for establishing boundaries amongst all stakeholders would have been to collectively develop a manifesto pertaining to expectations for the event. Explicitly stating expectations and goals allows stakeholders to discuss and debate expectations, opening further channels of reflection on objectives, participant involvement, fairness, and ethical conduct. Negotiation is a cornerstone of PD [13], and we emphasise its importance here. In our own case, while negotiated boundary setting may seem to contradict equality, it can break down existing power structures by creating a separate context for interaction. Specifically, it facilitates clarity, debate, and fairness, all of which serve to balance inequalities.

4.7 Risk mitigation

In more traditional PD practice, users are heavily involved in design-related activity and much less so during development activity. In the workshop, we intended the students to serve as designers, developers, and also end users, with our own roles focused towards facilitation. As the workshop progressed, however, it became apparent that our roles would also need to encompass managerial activity if the workshop was to stay on track.

At various points over the three days, the programmer successfully mitigated risk in the project by identifying potential development time sinks, estimating feature completion times, and helping the students conceptualise and prioritise their work. The importance of managerial intervention should not be downplayed in time-bounded projects and must be further emphasised in situations involving young, inexperienced developers, such as the students in the workshop.

An alternative and less preferable solution for dealing with deadlines occasionally adopted by the graphic designer was to intervene and complete tasks on behalf of students, who sometimes lacked the necessary skills, interest, or willpower. We had not clarified amongst ourselves our course of action if students were unable to complete on time. Faced with the probable outcome of one game not featuring any graphics, at least while the workshop was progressing, taking the tasks over from the students seemed to be the path of least resistance.

In both cases of organisers acting as managers and intervening to complete outstanding tasks, team self-organisation and decision making processes were left to the students. Further, the students were encouraged to make their decisions through a process of discussion and consensus. As well as staying true to the workshop process,

this had the effect of fostering a sense of responsibility and ownership over the games as products of a process which they largely controlled.

So, even though there was an inequality in the level of skill between organisers and students, the students steered the key creative and developmental decisions related to their games. As a result, they were all responsible for and owners of the final artefacts, and had approached the decision making processes from a position of empowerment.

5 Conclusions

Equality is an assumption underlying a number of the design and development methodologies currently in widespread practice. As our experience with the Girl Game Workshop shows, however, and as the cross-cultural research literature indicates, equality cannot and should not be taken for granted. It is a cultural value judgement that is by no means universal. While methodologies such as PD seek to accommodate cultural context within their paradigm, those premised on hierarchy are already in conflict with fundamental methodological assumptions.

In this paper, we detailed our reflections on a game development workshop run over three days at a bilingual school in Copenhagen that formally involved ten girls and the organisation team, but also informally included some school faculty as peripheral stakeholders.

At several points throughout the workshop, we encountered cultural and value clashes with our stakeholders that we had not foreseen. One such clash involved the game content developed by students not representing the cultural values of the school. Another centred around the existing hierarchies at the school conflicting with our process assumptions of working within a flat hierarchy. A further clash existed between the kinds of games that students played and our own beliefs about appropriate games. The final clash we mention here regards our own beliefs on what “empowerment” should look like compared to what the students actually produced. If stakeholders come from diverse cultural backgrounds, it is worth considering what kinds of cultural clashes might occur, and then establishing a process for dealing with the various possible outcomes.

The clashes that emerged in our workshop might have been predicted if, prior to the workshop, we had negotiated boundaries and expectations with our stakeholders. This negotiation would have served as a discussion forum for learning about each other and clarifying process ambiguities. Boundary setting may mean that strict equality will need to be downplayed, as it may entail the exclusion of certain perspectives and possibilities.

In terms of outputs of our workshop process, our intention was for the students to use the games as expressive vehicles for empowerment. But the game developed by one team, and the kinds of games that over half of the students played, referenced themes not in keeping with our own ideas about empowerment. Freedom of expression does not necessarily look like empowerment.

In fact, by the end of our workshop, it seemed that equality and empowerment were occasionally at odds with one another. There was a contradiction between

equality and empowerment regarding whose perspectives to prioritise amongst the DIA-skole stakeholders, and another similar contradiction regarding our own rules of non-intervention in the design process. Empowerment is about the act of giving or delegating power or authority, whereas equality is about parity and sameness, thus not granting anyone more power than anyone else. So, while equality of perspectives may seem like a means of empowerment, equality-centric methods may not be the best avenue for supporting empowerment, especially if the context of use is one in which egalitarianism is not the norm.

References

1. Beck, K., Andres, C.: *Extreme Programming Explained: Embrace Change* (2nd Edition). Addison-Wesley Professional (2004)
2. Beck, K., Beedle, M., van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Martin, R.C., Mellor, S., Schwaber, K., Sutherland, J., Thomas, D.: *Manifesto for agile software development* (2001)
3. Bødker, K., Kensing, F., Simonsen, J.: *Participatory It Design: Designing for Business and Workplace Realities*. MIT Press, Cambridge, MA, USA (2004)
4. Bødker, S., Grønbaek, K., Kyng, M.: Human-computer interaction. chap. Cooperative design: techniques and experiences from the Scandinavian scene, pp. 215-224. Morgan Kaufmann Publishers Inc., San Francisco, CA, USA (1995)
5. Brandt, E.: Designing exploratory design games: a framework for participation in participatory design. In: *Proceedings of the Ninth Conference on Participatory design: Volume 1*. pp. 57-66. PDC '06, ACM, New York, NY, USA (2006)
6. Cheng, C.Y., Lee, F., Benet-Martinez, V.: Assimilation and contrast effects in cultural frame switching: Bicultural identity integration and valence of cultural cues. *Journal of Cross-Cultural Psychology* 37(6), 742-760 (November 2006)
7. Games, S.: *Girls go games*, <http://www.girlsgogames.com>
8. Hofstede, G.: *Cultures and Organisations: Software of the Mind*. McGraw-Hill Education (1996)
9. Hollan, J., Hutchins, E., Kirsh, D.: Distributed cognition: toward a new foundation for human-computer interaction research. *ACM Trans. Comput.-Hum. Interact.* 7, pp. 174-196 (June 2000)
10. Iversen, O.S., Halskov, K., Leong, T.W.: Rekindling values in participatory design. In: *Proceedings of the 11th Biennial Participatory Design Conference*. pp. 91-100. PDC '10, ACM, New York, NY, USA (2010)
11. Kensing, F., Madsen, K.H.: Generating visions: future workshops and metaphorical design, pp. 155-168. L. Erlbaum Associates Inc., Hillsdale, NJ, USA (1992)
12. Khaled, R., Biddle, R., Noble, J., Barr, P., Fischer, R.: Persuasive interaction for collectivist cultures. In: Piekarski, W. (ed.) *The Proceedings of The Seventh Australasian User Interface Conference* (2006)
13. Kraft, P., Bansler, J.P.: The Collective Resource Approach: The Scandinavian Experience. *Scand. J. Inf. Syst.* 6, 71-84 (April 1994)
14. Muller, M.J.: *The human-computer interaction handbook*. chap. Participatory design: the third space in HCI, pp. 1051-1068. L. Erlbaum Associates Inc., Hillsdale, NJ, USA (2003)
15. Nardi, B.A. (ed.): *Context and consciousness: activity theory and human-computer interaction*. Massachusetts Institute of Technology, Cambridge, MA, USA (1995)

16. Nielsen, J. (ed.): *Designing User Interfaces for International Use*. Elsevier Science Publishers (1990)
17. Ruland, C.M., Starren, J., Vatne, T.M.: Participatory design with children in the development of a support system for patient-centered care in pediatric oncology. *J. of Biomedical Informatics* 41, 624-635 (August 2008)
18. Schild, J., Walter, R., Masuch, M.: Abc-sprints: adapting scrum to academic game development courses. In: *Proceedings of the Fifth International Conference on the Foundations of Digital Games*. pp. 187-194. FDG '10, ACM, New York, NY, USA (2010)
19. Schwartz, S.H.: A theory of cultural values and some implications for work. *Applied Psychology: An International Review* 48(1), 23-47 (1999)
20. Spinuzzi, C.: A Scandinavian Challenge, a US Response: Methodological Assumptions in Scandinavian and US Prototyping Approaches. In: *Proceedings of the 20th annual international conference on Computer documentation*. pp. 208-215. SIGDOC '02, ACM, New York, NY, USA (2002)
21. Strauss, A., Corbin, J.M.: *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. SAGE Publications (September 1998)
22. Vatrapu, R., Suthers, D.: Culture and computers: a review of the concept of culture and implications for intercultural collaborative online learning. In: *Proceedings of the 1st international conference on Intercultural collaboration*. pp. 260-275. IWIC'07, Springer-Verlag, Berlin, Heidelberg (2007)