

Research Article

Mother, May I? Conceptualizing the Role of Personal Characteristics and the Influence of Intermediaries on Girls' After-School Mobile Appropriation in Nairobi

Ronda Zelezny-Green

Royal Holloway, University of London, UK

Abstract

Education interventions for girls in the Global South often seek to expand their present and future life choices. Increasingly, this goal is pursued by enhancing preexisting mobile phone access. Girls' personal characteristics, particularly their age and gender, and adult intermediaries influence their mobile appropriation—and the outcomes they can realize when using their phones for any reason. Drawing on data from research with community members of a girls' secondary school in Nairobi, this article seeks to understand how girls' mobile appropriation during after-school hours is shaped. Building on Kleine's Choice Framework as a capability approach operationalization, a schema is proposed to conceptualize additional considerations needed when engaging girls in mobile for development work. The aim is to demonstrate how and why girls' after-school mobile use was influenced by the convergence of intermediaries in their lives, age, and gender. The analysis presents implications for mobile for development interventions with girl children.

Keywords: after school, age, capability approach, choice framework, gender, girls' education, intermediaries, mobile for development, Nairobi, personal characteristics

For the past 30 years, girls' education in the Global South¹ has steadily risen in importance on international development agendas. In 1990 UNICEF held the World Summit for Children, out of which the "World Declaration on the Survival, Protection, and Development of Children" was elaborated. The Declaration articulates the following mission:

At present, over 100 million children are without basic schooling, and two-thirds of them are girls. . . . We will work for programmes that reduce illiteracy and provide educational opportunities for all children, irrespective of their background and gender; . . . and that enable children to grow to adulthood within a supportive and nurturing cultural and social context. (UNICEF, 1990, paras. 13, 26)

The declaration reports that girls were found to be disadvantaged in their access to basic schooling. Following the summit, the 1990s were designated the Decade of the Girl Child. This designation was intended to raise awareness of the various sources of exclusion that girl children confront, especially regarding education. Although awareness was raised, millions of girls remained excluded from school (Heidemann & Ferguson, 2009). Some also argue that in addition to awareness raising, the designation of the Decade of the Girl Child

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1. I primarily use the terms *Global South* and *Global North* to refer to what is elsewhere commonly referred to as *developing* and *developed* countries. This decision was taken in recognition of the knowledge that even wealthier countries remain in processes of development.

contributed to focus being placed on girl children in a way that they were “othered” and positioned as “surviving childhood” instead of “progressing through human development” like children in the Global North (Burman, 1995).

A decade later in 2000 the UN published the Millennium Development Goals. Target 3A of these goals states: “Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015” (UN, n.d., para. 1). Research, policies, and programs since then continue to emphasize the importance of formal education for girl children in the Global South.

Initially, language about girls in international frameworks positioned them as uncomplicated individuals who needed education, health, and protection from violence and exploitation (Campeau, 2006). Girls were also portrayed as being completely (and often solely) dependent on adults (Campeau, 2006). These characterizations about what girls aspire to do and be, and of the power wielded by intermediaries in the girls’ lives, narrowly confine their ambitions to areas that (adult) international development actors prioritize on their behalf. This is problematic because girls are infrequently asked what development outcomes they value for themselves. As a result, development outcomes such as access to education are frequently mapped onto girls by adult intermediaries, who unarguably want the best for their daughters, but rarely enable the girls’ full participation in formulating the development outcomes they ultimately pursue.

Alongside the past 30 years of girls’ education promotion, there has been a proliferation of information and communication technologies (ICTs). Mobile technology has become one of the most ubiquitous ICTs and enables Internet connectivity, but approximately 50% of the world’s population remain offline—and are mostly female (A4AI, 2017). As access to the technology has spread, mobile has become the vehicle for a variety of social uses, including education (Castells, Fernández-Ardèvol, Qiu, & Sey, 2004). Moreover, traditional notions of how education participation should be enacted are being altered by the proliferation of mobile technologies (Ally & Tsinakos, 2014). UNESCO (2012a, 2012b, 2013), the UN agency primarily concerned with education, has launched research efforts and an annual conference to explore the potential to use mobiles for educational purposes in different domains and contexts across the globe.

The use of mobiles in education has grown to include mobile reading or use of a mobile device to read content (Baron, 2013a). In the Global North, mobile reading has emerged as a practice in large part because books are increasingly being digitized (Adler, Gujar, Harrison, O’Hara, & Sellen, 1998; Baron, 2013b). However, in the Global South, mobile reading has been spurred in part by a lack of physical access to textbooks and other paper-based reading materials, both inside and outside of schools (Crabbe, Nyingi, & Abadzi, 2014).

With this framing, this article explores the emergent connections among after-school hours, education and learning, and mobile technology appropriation within a secondary girls’ school community in Nairobi. Adult intermediaries shaped the girls’ mobile appropriation after school in direct response to their age and gender. The influence of these intermediaries and two of the girls’ personal characteristics were brought into focus when the capability approach (CA), a framework to conceptualize human development, was applied during the research process.

The choice framework (CF; Kleine, 2013), one operationalization of the CA, was chosen as the analytical lens for this data. This analysis gave rise to the adaptation of the CF to create the (Girl) Child-Centered Choice Framework (CCCCF). The CCCC was conceptualized to help build understanding of the relationship between the adult intermediaries and the girl children in this study. It was also developed to further crystalize the extant tensions between the intermediaries and the girls where after-school mobile usage is concerned. This article highlights the challenges of promoting girls’ agency through mobile phone access and use given that they must negotiate various disempowering structural elements established by adult intermediaries that are frequently linked to the girls’ age and gender.

To accomplish this, the article’s first section briefly reviews the literature related to girlhood in the Global South, the CA, and the links between identity and intermediaries. The conceptual framework that guided this study is detailed before the study background and design are discussed. The article continues with an analysis and discussion of the nexus of the girl children in this study, their personal characteristics, the intermediaries in their lives, and their after-school mobile phone use. The article’s final section suggests how and why the (Girl) Child-Centered Choice Framework can be used when designing mobile for development interventions where girls are both subjects and research participants.

Girlhood and Girls' Development Outcomes in the Global South

Girlhood studies arose from disputes about the treatment of girls as a monolithic group of youth whose different, gendered experiences were deemed not worth investigating (Griffin, 2004). Stakeholders such as governments, academics, and development practitioners increasingly acknowledge that girlhood deserves study on its own instead of being subsumed into broader discussions about women (Kearney, 2009). Several girlhood studies scholars have problematized the comparative lack of representation in research of girls from diverse places, ethnicities, sexualities, and socioeconomic backgrounds (Bettie, 2014; Griffin, 2004; Hernandez & Rehman, 2002; Weems, 2009). The homogenization of girlhood experiences has meant that girls who are not a part of a dominant group (e.g., from the Global North, economically empowered, etc.) are not yet well-understood through research.

Girls in the Global South continue to be represented in a manner that conveys the message that they have few life choices open to them. A prominent example of this limiting representation is in the Girl Effect initiative launched in 2008. Led by the Nike Foundation, the project has been decried as growth-focused and paternalistic. Critics believe the initiative pushes the realization of "girl power" through formal education so girls can develop skills that lead to jobs where they earn money and provide for their families (Switzer, 2013). Issues raised about this approach include the belief that a private-sector actor should not position itself as an authority on girls' education to extend its own power through increased ubiquity of its brand (Moeller, 2013). Other criticisms note that the Girl Effect encourages education investment and upskilling mostly so that girls and young women can (better and often solely) contribute to economic development (Hickel, 2014). This stance misrepresents the full range of education-related development outcomes that girls may have reason to value. For this reason this investigation sought to build an understanding of the development outcomes the girl research participants desired for themselves and not what was expected they should want.

Girls' Mobile Use in the Global South

A review of the literature shows that schoolgirls in the Global South face challenges to after-school mobile use that their male peers often do not experience. The global gender gap in mobile access is perhaps the biggest constraint since, to make use of a mobile, a girl must either own or be able to borrow one (GSMA & Altai, 2015). The reasons for this gap include a lack of financial resources (i.e., to purchase a handset) as well as barriers derived from social norms such as refusing a girl permission to own a mobile phone or even a girl's fear of online harassment (GSMA & Altai, 2015).

Discourses about girls' mobile phone use in the Global South have also drawn links to how they construct their own identities. Studies from South Africa found that adolescent girls use mobile as a vital tool for identity construction (Bosch, 2008) and self-expression (Bosch, 2011), although this is not to say that girls were not involved in processes of identity construction and self-expression prior to the advent of mobile. Nonetheless, Bosch (2008, 2011) provides examples from the Global South of trends seen globally, where children engage in processes of identity construction through and with mobile phones (Gasser & Cortesi, 2017; Hassan & Unwin, 2017; Katz & Sugiyama, 2006).

It is increasingly understood in international development that identity has a significant connection to the choices children make in life. An individual's choices are made within and influenced by social milieus that are transected by structural elements such as local discourses, norms, and technologies and innovations, which can include mobile phones (Andolina, Radcliffe, & Laurie, 2005). Moreover, these elements are shaped by adult intermediaries when the girl is under the legal age of adulthood (Bessant, 2014). This points to a connection between girls' process of identity construction through and with mobile phones, the structure they live in—framed by adult intermediaries—and the agency they are ultimately able to exhibit.

Girls' mobile use in the Global South cannot be understood simply as an individual exercising her agency. The World Bank (2015) would similarly argue that a focus on the individual is misguided because individuals do not exercise choice in a vacuum, but rather are influenced by their contexts of action, the culture around them, and indeed, the people with whom they interact (Ibrahim, 2006). For example, girls often feel compelled to display socially acceptable norms as they use their device to avoid inviting further parental control on its use

(Porter et al., 2015). Therefore, understanding girls' mobile use and the influence of adult intermediaries on this use made application of the CA problematic as the sole theorization in this study because the CA emphasizes international development analysis at the individual level (Sen, 1999). Therefore, it was necessary to develop a conceptual framework grounded in the people-centered perspective that also acknowledged that elements and actors beyond structure and individual agency can impact girls' development aspirations and outcomes.

In the next section the conceptual framework for this article is shared before this framework is related to girls' mobile use and their ability to choose how they appropriate the devices during after-school hours.

Operationalizing (Girl) Child-Centered Development Practices

The CA is a people-centered approach to international development. This framing conceptualizes development as a process that should seek to enhance the real freedoms, or capabilities, that people can enjoy (Sen, 1999). The CA was born in part from dissatisfaction with the development theorizations that preceded it, especially those that focused explicitly on economic growth (Deneulin & Shahani, 2009). While people might value development outcomes that relate to economic growth, Sen (1999) demonstrates that people have more than economic-oriented aspects of their lives that they value (Alkire & Deneulin, 2009).

Sen (1999) maintains that human development should contribute to helping people lead lives they have reason to value by removing various sources of unfreedoms that may limit or remove choice and prevent people from realizing the development outcomes they desire. By working toward capabilities enhancement, the aim is to increase choice. Agency constitutes part of one's capabilities and is enacted within various societal structures that may expand or constrain one's agency. While broadly aligned with the CA philosophy, some scholars such as Gasper (2002) and Iversen (2003) nonetheless note that the CA has shortcomings, including the perceived emphasis on individual choice.

Education is frequently mentioned by Sen (1999) as a valuable constituent of agency. However, to consider education alongside ICT use as mutually influential expressions of agency, it is necessary to move beyond Sen's work to identify an appropriate operationalization of the CA. Several approaches to operationalize the CA for this study were reviewed, including by Ibrahim (2011) and Conradie (2013). The decision was taken to adopt Kleine's CA operationalization, the choice framework (2011, 2013; see Figure 1), arguably the best-known in the field of ICT4D (ICTs for development). It should be noted that ICT4D is a contested term because it challenges whom the development is for and what type of development is intended to be transformed through ICT use (Roberts, 2016; Unwin, 2009).

Kleine's (2013) operationalization of the CA via the CF is based on the idea that to realize the development outcomes that people value, "individuals [use] their agency to navigate social structures, which have in turn been co-created by individuals" (p. 46). Her framework is read from right to left, and the constituent parts of the CF are explained next in that order.

Following Senian logic, the primary development outcome is always choice, and the secondary outcomes are the things that people value having the freedom to do and be. The degrees of empowerment, based on conceptual work previously carried out by Alsop and Heinsohn (2005), were added to Kleine's visualization of the CA because "the degree to which a person is empowered depends on their individual agency and the existing opportunity structure" (Kleine, 2013, p. 42). Accordingly, an individual can experience existence, sense, use, and achievement of choice:

- Existence of choice requires the choice to be available to the individual;
- Sense of choice arises when an individual understands that a choice is open to them;
- Use of choice comes into play when a person makes use of the choice; and
- Achievement of choice emerges when the development outcomes align with what the choices available to an individual were meant to achieve.

In the top left of the CF in Figure 1, the structures that frame people's lives are institutions and organizations, discourses, policies and programs, formal and informal norms, and technologies and innovations. These

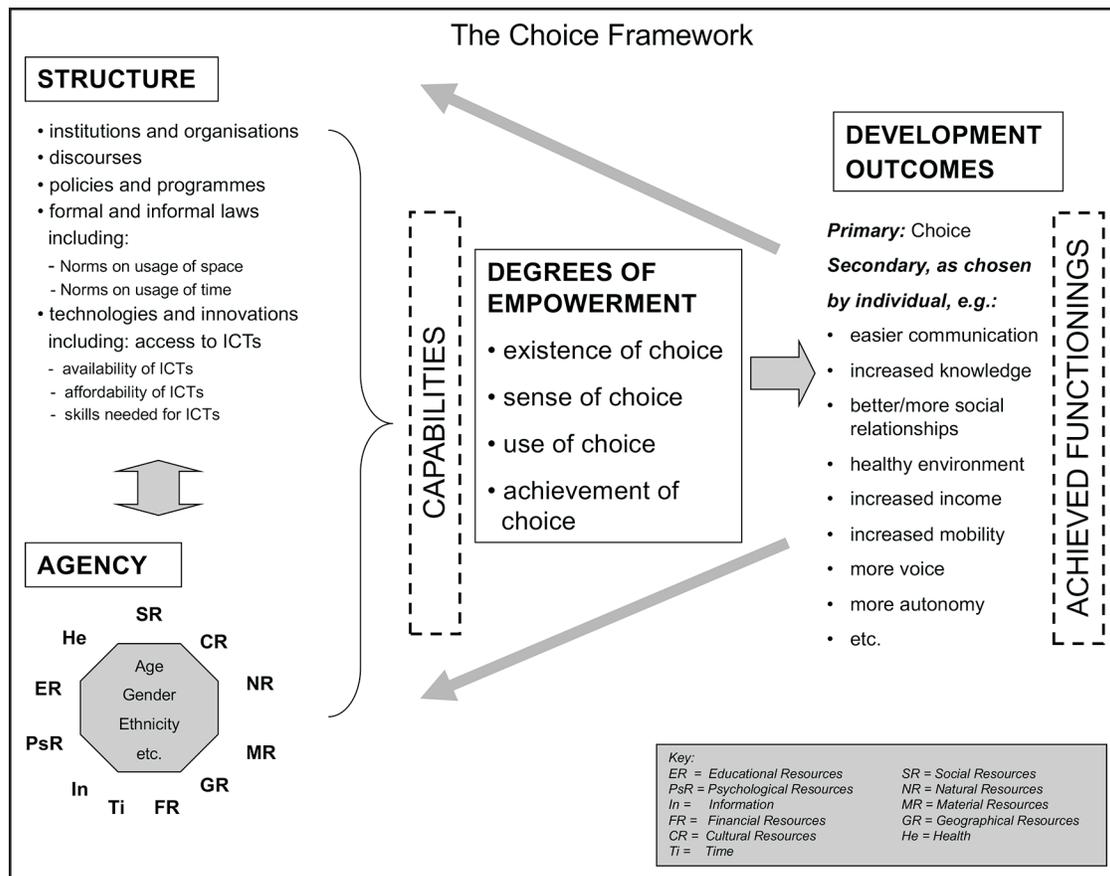


Figure 1. The Choice Framework.

Note: Kleine (2013, based on Alsop & Heinsohn, 2005; DFID, 1999, p. 122).

components form the context in which human development transpires. In the bottom left of the CF in Figure 1, agency draws on 11 resources. As an individual uses her resource-based agency to navigate the social structure of her life, capabilities arise.

Foregrounding structure in the CF is a departure from Sen (1999). Sen’s CA has been criticized as being too apolitical and neglecting aspects of power, politics, and structure (Roberts, 2016). Kleine (2011) responds with the inclusion of structure and the exercise of power through its constitutive elements. She underscores the importance of structure when applying the CA to development work because she believes that agency cannot be decoupled from the context in which it is enacted. Kleine’s CF therefore creates a space in which structure may be considered alongside agency. Moreover, the CF encourages application of the CA in ICT4D, given the inclusion of technologies and innovations as a structural element. To this end, other ICT4D researchers have used the CF as a tool to undertake human development analyses (Coelho, Segatto, & Frega, 2015; Poveda, 2015).

The CF is designed in response to the multifaceted nature of the human experience. Nevertheless, other academics have criticized the CF as being too complex. Stillman (2015) argues that practical application of the CF is challenging because of the multiple analytical points to consider. However, Tacchi (2013) states that Kleine uses the CF to challenge the oversimplification of ICT4D project assessment. She suggests the tool design acknowledges that understanding development impact is not a simple or straightforward process.

Based on the reading of Kleine’s (2013) operationalization of the CA, it was thought the CF did not fully convey the relationship between structure and agency. Kleine repeatedly argues that an individual uses her

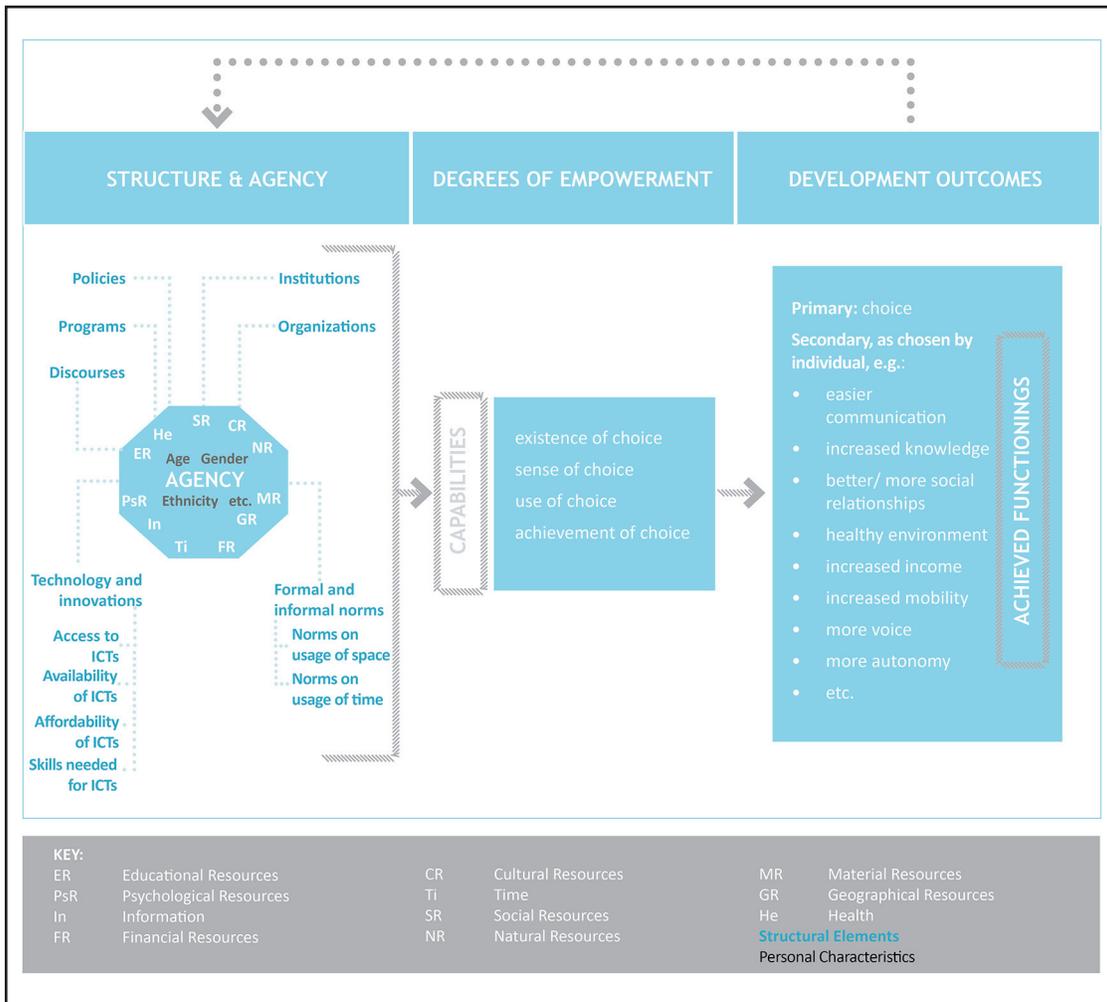


Figure 2. Reimagined choice framework.
 Note: Developed by the author based on Kleine (2013).

resource-based agency to navigate the structure within which she lives as she tries to lead a life she has reason to value. This suggests that one’s structure encompasses her agency and that individual agency and structure are inextricably linked. Therefore, the CF was reimagined for this understanding of the explanation by moving structure to surround agency instead of sitting in parallel to it (see Figure 2).

However, identity comprises the intersection of a person’s gender, race, age, and ethnic affiliation, among other personal attributes (Crenshaw, 1991). Some researchers have observed that work in international development to help people realize outcomes they have reason to value has often focused on one to two aspects of a person’s identity instead of deploying intersectional approaches that might consider multiple identity constituents simultaneously (van der Hoogte & Kingma, 2004). The failure to deploy intersectional approaches makes it more challenging for people working in international development to recognize and address problems individuals face and to understand how different contexts shape identity—and, by extension, individual agency.

While Kleine’s CA operationalization enhanced Sen’s work by emphasizing the role of structure, Kleine does not delve deeply into the significance of personal characteristics (which form people’s identity) with respect to exhibiting agency and the effects that structure can have on the same. Similarly, she does not directly account for the powerful role that older intermediaries play in children’s lives, particularly with respect to influencing

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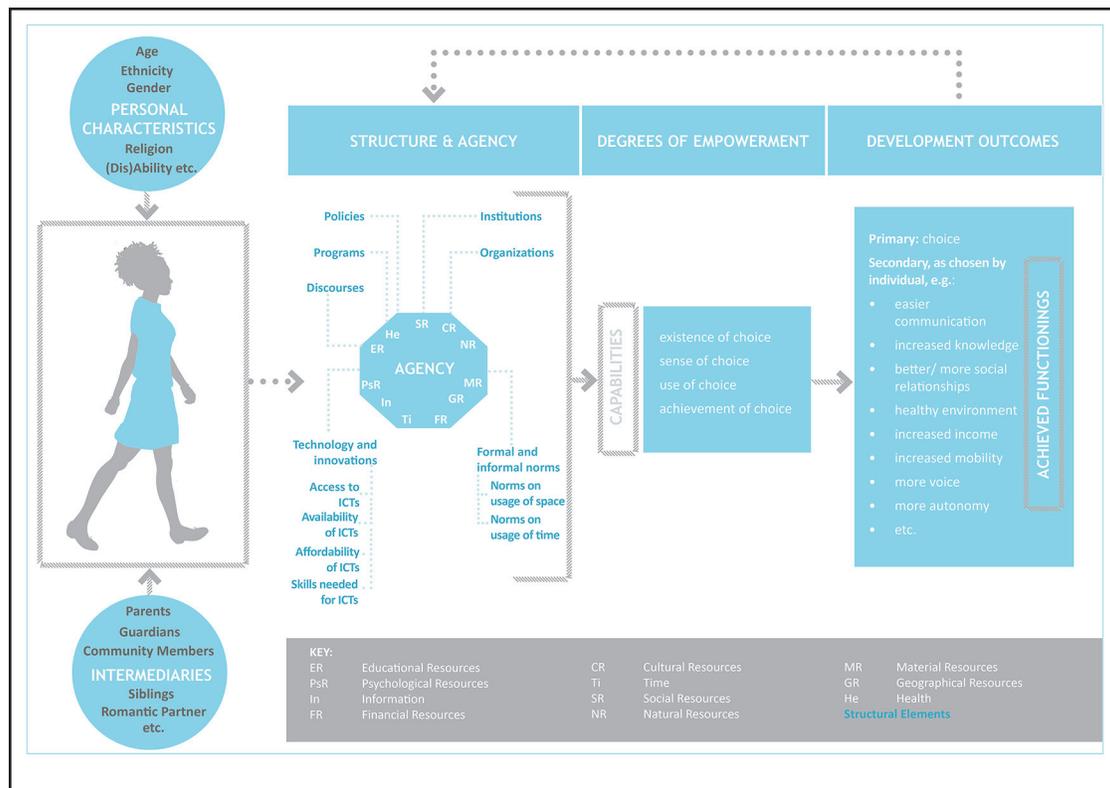


Figure 3. (Girl) Child-centered choice framework.

Note: Developed by the author based on Kleine (2013).

the development outcomes children come to value. This is problematic because personal characteristics such as age and gender can affect the real freedoms girls can enjoy.

To bridge this conceptual gap in the CF, Walker's (2005) understanding of the interrelationships among agency, structure, and personal characteristics was integrated into the CF. Walker proposes that children's agency is shaped by personal characteristics and intermediaries before subsequently being realized within a structure. Adopting Walker's (2005) proposal, the CF was reimagined once more to integrate the idea that identity (constituted of personal characteristics) and intermediaries impact the enactment of (girl) child agency even *before* the (girl) child is confronted by the structure in which her agency is enacted. This resulted in the creation of the (Girl) Child-Centered Choice Framework (see Figure 3).

Within the CCCF, personal characteristics are distinct from agency, and intermediaries are acknowledged for the role they play in shaping children's agency in response to their personal characteristics. In contrast, in the CF, personal characteristics are bound by agency and no mention is made of how adult stakeholders influence children's agency in response to the personal characteristics their children possess. Applying the CF to (girl) children without considering the intermediaries in their lives does not provide the entire picture of influence that frames the structural elements (girl) children encounter. These elements are often ones that intermediaries have instituted or contributed to sustaining (Saito, 2003). Moreover children often stand in stark contrast to adults in terms of their ability to independently build their own capabilities and to make their own decisions (Comim, Ballet, Biggeri, & Iervese, 2011). In fact, in international development contexts, adult women—whether they be mothers, older sisters or other female relatives, and/or guardians—frequently operate as intermediaries for children (Malhotra, Schuler, & Boender, 2002).

Compelled by the lack of attention Kleine (2013) gives to exploring how the CF might be applied for understanding human development for people below the age of adulthood, a shift was made to conceptualize

within the CF the plight of (girl) children, their personal characteristics, and the roles played by adult intermediaries in their lives. The CCCF advances the argument that the CA cannot be applied in the same way for (girl) children as it is for adults. When children are the subjects of human development, further considerations are needed to understand how and why they are enabled or constrained to enact their agency. The CCCF is used in the analysis and discussion section later in this article. In the next section, the study background and context are shared.

Study Background

Since 2006, the Kenya Institute of Curriculum Development (KICD) has been responsible for promoting the integration of digital content and Internet service in primary and secondary education in Kenya. This mandate is undertaken by KICD so that digital literacy skills might be developed by both teachers and learners (KICD, 2016). Personal computers have been positioned as the preferred technology for this endeavor despite the ubiquity of mobile in the country: From 2005 onward, the telecommunications industry was liberalized, driving down mobile ownership costs (IFC, 2013). By 2012, the number of Internet users in Kenya per 100 people had grown to 32.1 (World Bank, 2014). Much of this growth came from mobile-based Internet access. When this study was initiated in December 2013, of the 44.8 million people in Kenya, there were 21.6 million unique mobile subscribers (or SIM cards held), 17.9 million of whom had access to the mobile Internet (GSMA Intelligence, 2016).² A nationally representative household ICT survey conducted in Kenya between 2011 and 2012 examined changes in mobile access with a gender lens, finding that 67.9% of girls and women owned a mobile phone, compared to 46.9% when the same survey was conducted between 2007 and 2008 (Gillwald & Deen-Swarrray, 2013).

A national policy that negatively impacted mobile's perception as an educational tool in Kenya was the ban on students carrying mobile phones to schools. In the aftermath of the 2007–2008 post-election violence, Education Minister Sam Ongeru declared, "[I]n order to stem off this crisis that has developed in our schools, we have decided to take the following measures. . . . From today, ban the use of mobile phones in all our educational institutions" (Kenya National Assembly, 2008, pp. 1964–1965). This policy was implemented in response to purported youth mobile use to organize their participation in civil unrest after the election (Trucano, 2015). Because of this, mobile has not been widely adopted to support education delivery in Kenya.

Methodology

The exploratory study from which the CCCF emerged was conducted over a one-month period in July and August 2013. The study was conducted at New Day Secondary School (NDSS),³ a girls' secondary school in Nairobi where a predominance (90%) of all learners were socioeconomically disadvantaged. Over five weeks, school community members were asked about the girls' after-school routines and the changes, if any, they wished to see in the girls' daily after-school experiences.

Two research methods were employed: semistructured interviews of 30–60 minutes with 11 community members, conducted during the after-school hours (beginning from approximately 3:30 p.m.) and on school grounds in a private room. Participant observation of four girls was also undertaken after school, covering the girls' journeys home and a further three hours spent in their homes; each girl was observed twice.

Upon reviewing data from the after-school participant observations and the 11 semistructured interviews, where school community members were asked to share their ideas on the tools they wish the schoolgirls had (better) access to after school, a recurrent theme surfaced: Nine of 11 stakeholders expressed that they wanted to increase the girls' access to educational content after school, especially books related to their formal schooling.

2. However, it should be noted that the number of unique mobile subscribers does not account for the possibility that some users own more than one SIM.

3. Pseudonyms have been used for the school name and each school community member referenced in this article.

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Table 1. Participants and Quantity of Semistructured Interviews Conducted During 2013 Exploratory Study (Author).

Community Member Classification	Number of Semistructured Interviews Conducted
Girl learner	4
Parent or guardian	2
Teacher	3
School principal	1
School staff member	1

Some of the textbooks we read . . . are outdated. . . It's the same textbook that I used when I was a student. —Teacher Saul Okono

A library [with books]. —Principal Patricia Sumba

Maybe more revision books. —Learner Lydia Mwangi

After identifying this desired development outcome, research participants were then asked whether, if at all, they thought mobile phones could help realize this outcome. All 11 participants stated they thought this was possible. However, two teachers interviewed expressed varying opinions about the appropriateness of mobile to increase access to educational content after school, given the girls' age and gender. These differing viewpoints are unpacked in the analysis section.

Building on this exploratory study, a 13-month action research (AR) investigation was implemented between December 2013 and January 2015 to explore and work toward realizing the desired development outcomes of 22 girl learners. This 13-month period was also used to see what happened when a mobile reading app was introduced to help the girls increase their access to educational content after school. Although nine research methods were applied during this timeframe and in the after-school hours (some on multiple occasions), given space constraints this article focuses on data collected from a 30-question survey (approximately 30 minutes to complete) completed by all 22 research participants. The article also draws on individual semistructured interviews with the girls (approximately 20 minutes long) held after school in a private room on school grounds.

The article's analysis is primarily interpreted through a CCCF lens. The analysis is also supported through an approach to discourse analysis that maps "systematic analyses of spoken or written texts onto systematic analyses of social contexts" (Fairclough, 1992, pp. 193–194). The data collected give further insight into the different ways the girls' personal characteristics influenced responses to their after-school mobile use by adult intermediaries.

Analysis

During the exploratory study, age- and gender-related discourses about girls played a salient role in shaping how after-school mobile use was perceived. The proceeding analysis and discussion adopt the language of the CCCF to build understanding of the data generated during this period.

Teacher Sarah Kibere was asked her opinion on the girls' after-school mobile use:

Author: Do you think that mobile phones could be used by the girls to learn things after school?

Sarah: It can, *but only when they are not in school* [emphasis added]. Given the age of the students here, because they are young, instead of using it to learn they would use it for other things. Like the socializing bit of it. After school it can be used, but when they are in school, right now they are urged to get there [focus on school].

Author: So, when you say "after school," do you mean once they have finished Form 4 [and officially graduate from secondary school] or after the school day ends?

Sarah: Yes, once they finish Form 4.⁴ Because even back at home, even if this is a day school, even when they have that phone, they would never use it to learn. Instead, they would use it to get onto Facebook. And these days the kind of things people are posting on Facebook they actually are affecting the moral fabric of these girls.

Sarah's comments stress that it is not only in the after-school hours that she finds girls' mobile use problematic. She insists that girls should finish secondary school before using mobile phones since the phones can distract them from studying. Sarah believes it is only after graduation that it is acceptable for girls to use mobile phones for learning.

The teacher's remarks raise a few points linked not only to gendered discourses, but also to age-based discourses on the appropriateness of mobile use for education. First, Sarah's reference to the potential corruption of "the moral fabric of these girls" to an extent implies that she believes girls are more vulnerable to being negatively influenced when they use a mobile. This links to the fact that Kenyan girls are often told to exhibit behavior deemed morally upright to avoid inviting physical or emotional harm (Unterhalter, North, Karlsson, Onsongo, & Makinda, 2009). Not using mobile phones until they graduate would constitute the morally upright behavior Sarah expects of girls. Nonetheless, this contributes to the positioning of girls as disempowered actors who are incapable of making the "right" decisions without adult intervention (Bhana, Morrell, & Pattman, 2009; Milligan, 2014).

Applying the CA to the gender socialization process that occurs in schools, Walker (2007) remarks:

But formal education, particularly at the level of compulsory schooling, is a crucial site for reproducing and transforming social norms and culture and for identity formation (who we take ourselves to be), which identities and abilities count (and which are devalued), and what we see as possible for ourselves. (p. 178)

Although Walker does not explicitly name discourses, we can safely assume that the reproduction she notes occurs at schools includes what different stakeholders communicate to one another, particularly adult intermediaries to schoolchildren. Other scholars concerned with transforming freedom-constraining practices in girls' education in sub-Saharan Africa have also found examples of how the discourses transmitted in schools contribute to sustaining harmful social practices that disadvantage girls (Chege & Arnot, 2012). This underscores the powerful nature of discourses and illustrates the difficulty of challenging and changing discourses, which limit the real freedoms that children can enjoy.

Finally, references to the girls' youth (age as a personal characteristic) were wrapped in Sarah's statement. She indicated that due to their age, girls' wishes to increase their access to educational content after school would be outweighed by a desire to connect and socialize with friends. Her perspective likely indicates a belief that digital socializing detracts from the girls' ability to realize other development outcomes deemed more valuable for children.

Conceptualizing children's agency from a capability perspective, Ballet, Biggeri, and Comim (2011) state that "in the case of children, age becomes a highly relevant factor in shaping their capabilities, especially as age is combined with a range of formal and informal social norms in different cultures and societies" (p. 29). Saito's (2003) writing on the CA and education suggests that adults play a direct role in helping children realize present and future freedoms. When Sarah's statements are interpreted in a way that also considers the social context, it is possible she sought to express her sense of responsibility as an adult female to shield girls from situations that might harm them.

When examining statements made during the exploratory study by a male teacher, we see he did not share Sarah's views:

Author: Do you think that mobile phones could be used by the girls to learn things after school?

Samuel: It will be helpful to them, like I see most colleges today rely so much on mobile phones for their research. It will be easier for me now and cheaper for me to use the mobile phone than a laptop. I live with college students—two of them—and they rarely move to the library because everything is on their phones.

4. By the time a girl finishes Form 4, she would usually be at least 18 years old, possibly older, depending on if she had repeated a grade(s). Form 4 is the final year of secondary school in Kenya.

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Author: If the students here could use a mobile phone for learning after school or learning at home, would you be willing to let them use the phone for this purpose?

Samuel: I would be willing to let them use the mobile phone. I would not have a problem with it. I think there is that conservative idea of mobiles being bad: "They go to pornography, they'll share boyfriends, bad information," and such. But that should not be a reason. The advantages far much outweigh the disadvantages to me.

Samuel's statements reveal how he links age as a personal characteristic to the girls' agency. His comments indicate that because he saw firsthand some benefits of mobile use to increase access to educational content after school, he was open to the girls he taught using it in this manner.

The reference Samuel made to conservative beliefs that girls' mobile use can lead them to pornography, boyfriends, and bad information mirrors dangers Sarah listed later in her interview. Although Samuel acknowledges the same threats, in his assessment of the good that could come from using mobile phones after school to increase access to educational content, he argues that these threats should not deter mobile use for educational purposes. His characterization of the threats as "conservative ideas" in this social context suggests that he is aware of the local gendered norms toward girls' morality and chastity, and their confluence with technologies and innovations.

The surveys completed in January 2014 in the AR Pre-Intervention phase, and the semistructured interviews conducted in the AR Intervention phase, which commenced in April 2014, were used to help 22 girl research participants voice their own desired development outcomes. Survey question 9 asked: What are your objectives for your education, if any, *during the next six months*, until July 2014? Their responses varied but many girls mentioned that they wished to earn higher grades:

I want to upgrade from my last mean [grade average]. —Halima

To get higher grades as I proceed to another term. —Beryl

Get a C+ and above, to keep on driving, achieve my interest in education. —Faith

To work hard in school, not just because of my parents and teachers, but also to my benefit to pursue the different goals I share. —Ann

The girls appeared to value good grades because they relied on their grades to help justify investments of time and financial resources into their education by school faculty and staff, parents and guardians, and/or other potential sponsors. This possibility was strong since the findings of a previous study with this population showed that a lack of financial resources was a major barrier to consistent school attendance (Zelezny-Green, 2014). A girl pupil who was not academically successful (as evidenced by her grades) would be less likely to garner funding assistance, especially since prevailing attitudes in the Kenyan social context place less importance on ensuring that girls complete their secondary education when compared to boys (Warrington & Kiragu, 2012). These situations also suggest that the girls' desired development outcomes were likely influenced by their unavoidable dependence on adult intermediaries because, given their age, girls have few possibilities to generate an income for themselves or to pay their school fees. This makes it difficult to discern if the girls were expressing their own educational ambitions or if their statements were mostly the desired development outcomes that are applauded within their society, shaped by intermediaries and bound by structural inequalities. The data here point to a possible example of adaptive preferences, whereby the girls have censored themselves to focus on the development outcome they believe they have a reasonable chance to attain (Kabeer, 1999).

In conducting the semistructured interviews, the intention was to pinpoint the girls' desired development outcomes after two mobile reading apps, biNu and Worldreader, were introduced. By the time of these semistructured interviews, five months had passed since the girls were first asked about their desired development outcomes. Twenty research participants interviewed still expressed a development outcome related to having increased access to educational content after school—and to realize an improvement in their grades:

To attain the goals I've set. To improve my grades, and to learn more about biNu and teach other people.
—Everlyne

To better my grades and to better my English, and to be able to learn new things. —Damaris

I want to achieve a good grade that will take me to a good university. I need a B. —Marie

First, I want to change my grades from C– to B+. —Leanta

Part of the reason for these responses could be that, at the time the semistructured interviews were conducted (June 2014), the learners had completed their Term 1 exams a few weeks prior. Their exam performance would help determine the final grade they earned in a subject and was linked to their university enrollment prospects. Attending university could make the girls happy, but would also make their parents and guardians proud of them, something they also desired because of the emphasis placed on educational attainment in Kenya.

Another influence was the researcher as an intermediary since the girls were asked questions in a school-based setting to understand the short-term development outcomes they have reason to value. The location where the research was implemented after school undoubtedly contributed to the scope of the responses elicited (Finlay, 2002; Rose, 1997). Nevertheless, the girls were never expressly limited to sharing desired development outcomes that related only to their formal schooling.

Discussion

In her book *Creating Capabilities*, Nussbaum (2011) states that “the purpose of global development . . . is to enable people to live full and creative lives, developing their potential and fashioning meaningful existence commensurate with their equal human dignity” (p. 185). Part of this dignity should include enabling children to make decisions whose outcomes are more likely to enhance their freedoms now and in the future (Bessant, 2014; Saito, 2003).

As Sarah stated, the girls in this study may indeed face online threats that they should avoid. Yet, as Samuel countered, it can be questioned whether halting their after-school mobile appropriation altogether is the ideal solution, when the girls could be taught appropriate uses of mobile now (Gasser & Cortesi, 2017; Livingstone & Bulger, 2014) while enabling the possibility to enjoy benefits derived from mobile’s educational uses in the present and future.

Overall, age seemed to be a powerful personal characteristic that remained a contentious point of discussion among NDSS faculty with respect to the girls’ agency during after-school hours. The debate about when girls are old enough to appropriate mobile phones after school, for learning activities or otherwise, was also tied to gender because of the assumption that young girls could be taken advantage of and that they require protection from pornography and boys when they are online. The adult stakeholders disagreed in terms of when to initiate support of the girls’ mobile practices after school in a way that adults might view positively. Substantial structural challenges arising from the after-school hours at school were exposed and illustrated that the girls’ agency in this context was severely limited where mobile was concerned—even if the girls themselves thought the technology could be useful to support their access to books after school.

Conclusion

In this article, an exploratory study and an action research investigation conducted at a girls’ secondary school in Nairobi illustrate how learners’ personal characteristics or identity, particularly their age and gender, are powerful factors of intersectionality that frame their agency to appropriate mobile phones after school. The data also show that if girls wanted to choose to use a mobile phone to increase their access to educational content after school, this may not be possible in every case. This is because, in response to their personal characteristics, adult intermediaries directly and indirectly influence the girls’ ability to engage in after-school mobile appropriation for any reason.

The *(Girl) Child-Centered Choice Framework* was created to support critical engagement with intermediaries and how they can affect (girl) children’s agency in ways that might alternately expand or constrain their

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freedom. The framework's creation was driven by the understanding that the CA cannot be considered in the same way with children as it is with adults. Through the application of the CCCF to the data generated in this study, the intention was to articulate a new conceptual space that can better help CA researchers and practitioners put children first by considering their lives—particularly their personal characteristics—more holistically.

If mobile technology is considered a potential mechanism to help girls lead lives they have reason to value, then research should be undertaken in parallel to understand the role that adult intermediaries can play in contributing to the realization of girls' desired development outcomes through mobile use. Adult intermediaries can support girls so they benefit from mobile for development initiatives, including by helping girls make decisions more likely to positively impact their lives, but their norms about girls' mobile use must also be understood. Through building knowledge of the ways that adult intermediaries shape (girl) children's agency after school, it is hoped mechanisms will be revealed that enable girls' full participation in mobile for development initiatives intended to enhance their present and future freedoms. Further research might also investigate other personal characteristics that girls embody that impact the agency they can exhibit, particularly during after-school hours and with respect to their mobile use. The aim would be to understand how, if at all, agency-limiting factors for girls can be minimized or eradicated altogether in mobile for development intervention designs. ■

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Ronda Zelezny-Green, Honorary Research Associate, Department of Geography, Royal Holloway, University of London, UK. rondazg3@gmail.com

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