Adolescent Girls, Cornerstone of Society:
Building Evidence and Policies for Inclusive Societies

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Adolescent Girls and Technology: Supporting Participatory Engagement

Christopher Hoadley, Ph.D\(^{47}\) and Christopher Fabian\(^{48}\)

Introduction

Adolescent girls can use technology to identify, engage with and solve the problems that surround them. As highlighted in this volume, adolescent girls are an important, vulnerable, and sometimes hard-to-reach population, and therefore essential to support (UNICEF, 2010). This section of the book describes how girls can, and do, interact with technology.

We will present key technology-oriented strategies for collaborating with adolescent girls and look at how technology can encourage the equitable engagement of this valuable population. Throughout, we consider how technology maps onto the overall goal of providing girls with information and opportunities to help them develop, grow, and determine their future.

Plan International’s 2010 Because I am a Girl report: Digital and Urban Frontiers - Girls in a changing landscape highlights seven key reasons why technology is vital for adolescent girls.

1. To keep in touch with others and reduce isolation in countries where this is an issue.
2. To further their education and acquire new skills.
3. To take an active part in their communities and countries.
4. To have the skills to find work.
5. To build specific skills and knowledge on subjects they might otherwise not know about, such as HIV and AIDS.
6. Because evidence has shown that learning to use these technologies can build self-esteem.
7. To keep safe.

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These basic needs are reflected in the next three chapters. Below, we will explore some of the key strategies that can help us to ensure that technology is available for, and built with, those who need it most.

**Strategies**

Technology is often seen as an automator of existing activities and processes. In addition to ‘automating’, the Internet, social media, and mobile communications explosions have also created new practices. Through changing the modes of users’ access to information, often changing day-to-day habits, and by shifting their social context, technology emerges as a driver not just of ‘faster’ behaviours but also of ‘new’ ones.

Five strategies emerge as themes in the chapters of this book. Content, context, practice, co-creation and scaling are all ways of building technology that can solve pressing development problems.

**Content**

Access to information itself is empowering. Traditional means of disseminating information (face-to-face training, printed materials, word-of-mouth communication) can be enhanced by using technologies created for media dissemination. Radio, television, and the mobile phone are all pathways to valuable information.

Some information is directly economically empowering, such as market pricing information. For instance, fishermen in Kerala save effort and money when they can accurately track real time market prices for their catches (Abraham, 2007). This savings is a result of functional teleportation. Rather than having to travel a certain distance in a certain time (which would be impossible) they are able to ‘get there and back’ by accessing certain localized content instantly electronically.

Just as market prices would be otherwise difficult to get to for these fishermen in India, career-relevant access to computers or information about reproductive health may effectively be ‘difficult go get to’ for adolescent girls. In both cases, technology can be used to provide content that would otherwise be difficult or impossible to obtain.
Process

Processes are often fundamentally changed by technology. We consider this to be technology *supporting* or *adapting* processes. Technology and media are not simply ‘reference desks’ but can take an active and direct role in supporting individuals. Mobile phones have been used to support women running micro-lending cooperatives in India, and in addition to providing information they also offer the ‘active’ tools of loan accounting and information interchange with sponsoring banks (Parikh et al., 2003).

Similarly, Grameen Foundation has used mobiles to provide just-in-time information and prompts for appropriate care during pregnancy through mobile phone SMS (Mechael and Dodowa Health Research Center, 2009). The action here is not one of medical reference but rather more akin to the function that telemedicine and remote diagnostics can play in remote operating environments.

Context

A key strategy for empowering adolescent girls is to shift the social context in which they function, either by allowing them to participate in different and new activities, or to broaden their existing social network.

The GenARDIS project Majalisar Mata Manoma in Nigeria used a combination of radio and mobile phones to shift understanding of women’s participation. After working closely with several communities to identify women’s needs, they developed a participatory radio programme. Groups of women in each village would gather when the programme was aired. Mobile phones were donated for the women to call in with questions or suggestions. ‘In person’ group discussion followed the radio programming. The technology shifted context by both providing new access to discussion and added legitimacy to issues that would otherwise be buried.

The issues identified were normalized for men in the community who listened to the radio programme. Because the women were expected to call in with comments or questions, even the context in which they could voice their views was expanded. Women who are not used to asserting a voice in discussions of community problems did so in a public and inclusive manner (Gender Agriculture and Rural Development in the Information Society [GenARDIS], 2009), ARDA (African Radio Drama Association) Women’s Group,
2009). By reconfiguring communication channels and networks, technology can perform a context-shifting function.

In this volume, Bachan, et al study how girls experience 'LAN Houses', or Internet cafés in Brazil, as either safe or dangerous spaces. The safer LAN Houses protect patrons, including girls, from street violence and the physical dangers of the locations in the favelas where these girls grow up.

Stevenson also notes that through their interactions with these spaces girls can develop a 'voice', and get access to crucial information in ways that may circumvent social or logistical barriers which they face in the 'non-technological' world.

In order for technology to support adolescent girls, they need access to a variety of safe spaces (both physically and virtually). Technology can be used to reach girls, and conversely allow them to reach out to communities and connect to sources of information that they might not be able to interact with physically.

**Collaboration**

The shifting of contexts also applies to the world of development. Some of the best examples of technology-mediated interventions allow development professionals to break out of traditional silos. Too often the goals of poverty alleviation, civic engagement, health, and education are seen as separate.

Mario Volpi described during a conference presentation how an initiative on teen pregnancy benefited from being a cross-disciplinary effort. By engaging youth in collecting stories about pregnancy, and then using those stories as the basis for media development, the project started teen conversations about health, gender relationships, educational attainment/dropout, and career goals.

This initiative was able to move beyond one public health issue into arenas of education, engagement and child protection by mixing mediums and technologies. This mixing of “thematic” areas of programming created holistic discussions.

The designers of the intervention worked across collaboration ‘types’ (from media to the

49 Mario Volpi's presentation was included in the proceedings of the International Conference "Adolescents Girls: Cornerstone of Society" UNICEF – The New School at www.equityforchildren.org.
young people themselves) to ensure that they were getting the maximum effect from
the intervention—and in doing so explicitly distributed the media not only to convey
information, but to start a youth-driven conversation about youth issues.

Co-creation

International development practice consistently shows that the most effective way to
develop solutions is to fully engage people in solving their own problems. Technology
can profoundly support this engagement.

Linda Raftree is clear on the need to involve ‘beneficiaries’ in design:

“In order to find the best solutions for girls, we need work with girls, and
involve them from the very beginning of a process as full participants.
Creating environments where girls feel confident sharing their ideas
and their specific needs is a good first step when building or creating
tools and tech that are a better fit for girls.

This goes beyond asking them what color they want in a device or
setting up a focus group to really digging deep to understand what
their needs are and what they might want out of technology, and how
they put it to use. This process is not a one-off meeting. It requires a
longer term commitment to helping girls build skills and confidence
to think in a new way and to share their ideas, as often no one asks
them for their opinion.”

(Linda Raftree, Social Media and New Technology Advisor,
Plan West Africa and Plan USA.)

Technology can reduce transaction costs for connecting relevant stakeholders. It can
also allow solutions that show success in one context to be adapted and scaled in
others. Teltschik, Sakovych, Poutainen, and Balakireva describe research on adolescent
sex workers in Ukraine. These girls are vulnerable in many ways: physically, emotionally,
and economically. UNICEF worked with the adolescent sex workers to define a
technology-mediated solution that allowed crucial access to services and information.

The co-created solution used mobile phones to “provide counselling in case of an
emergency, keep in touch with the girls during seasonal migration, support adherence to treatment, disseminate information, and communicate between partners. By listening to the girls and young women, and by using innovative technology to connect them to resources, the problem of HIV transmission among young sex workers in Ukraine is being addressed in a highly collaborative fashion.

Although the impact of the intervention might appear to be a technology skills-building exercise, the research on the intervention documented how technology was also a vehicle for improving human interactions. To the extent that young sex workers are limited in their interactions with information sources the process of lowering information transaction costs and enabling them to form connections with trained counselors can prove to be a considerable benefit indeed.

**Scaling**

Any of these interventions is only successful if it can be taken to scale. That expansion can come at a very low cost if technologies are open-source. Open source means that the technology is freely and openly licensed—it can be taken, adapted, customized and used in other contexts, by anyone—without them needing to pay licensing fees or get permission from the initial creators.

Ensuring that these technologies are open-source creates public goods that can be the starting point of projects in various disciplines, and the driving forces in bringing new collaborators to the table. This openness allows programmatic interventions to be decoupled from specific technology solutions. It also allows for local developers and technologists to profit from, and thus provide the support to sustain, technological initiatives.

When the technology, source code and documentation for projects is part of the public domain it becomes possible to leverage enormous communities of volunteers or interested parties to work above and beyond the initial specifications. Wikipedia, Linux and Firefox are all examples of open-source frameworks and systems in the private sector which have scaled far beyond initial expectations, and which have undergone that scaling through the work of a global collaboration among volunteers, academia, for-profit and civil society. Using similar strategies may be one of the most successful ways of taking technology solutions for adolescent girls to global scale.
Jokko: A Case Study

In Senegal, the Jokko initiative uses innovative open-source mobile phone technology to maintain and increase women's literacy in isolated Senegalese communities. It is an interesting and holistic case study of what can happen when the strategies outlined above are able to inform each other, and most importantly are directly influenced by needs of end users. Technology expert Wayan Vota describes the project on his blog.50

"First, [Tostan] came up with an amazingly simple methodology to introduce people to [mobile phone] menu systems using a mango tree metaphor which gracefully transitions from the concrete (planning a climbing route on a real tree to get to a specific mango) to the semi-concrete (the same, on a diagram of a tree), to the abstract (the tree diagram becomes the menu diagram, the mango a specific function).

Anyone who thinks that [this] is too basic has never shown their grandparents a new shiny piece of technology or had their entire world view of user interface challenged by someone physically pointing a mouse at a screen.

Next, they teach the cost-efficiency of SMS texting relative to placing a call, which has immediate impact on the girls' lives. They can use their newly acquired ability to read and write in their national language, Wolof, from the Community Empowerment Program, to compose and read text messages without assistance. The women are also able to show mastery of mobile phones, which allows husbands to trust wives with phones, even obtaining their own phones.

Then, participants apply the skills they've gained to specific themes (such as health, agriculture, and the environment) relevant to their everyday lives. For example, to send text messages about vaccinations and awareness-raising campaigns, to make appointments at health clinics, and to ask for advice on matters concerning health and hygiene."

The technology behind the Jokko initiative is a simple, open-source framework for building applications that use mobile phones to move information. The software (called RapidSMS) began as a response to a need to find out about locations of nutritional supplements in warehouses in Ethiopia. The software framework was adapted by the health extension system in Malawi for nutritional status monitoring. The ability to move information almost instantly from one place to another was developed further in Nigeria for monitoring supply and distribution of mosquito nets. The same system provided the skeleton for Jokko. In this sense the technology transcends programmatic silos - providing a way to describe problems and solutions that is not linked to a single thematic area of engagement. The abstract need (to move information in areas where information was scarce) was exposed as a common issue in other programmatic areas, and eventually found a new instantiation in the Tostan project to educate women and girls in Senegal.

"Women and girls, who had the lowest rates of literacy and numeracy before the Jokko Initiative began, greatly improved over the course of the project. The percentage of women and girls who scored in the highest category for literacy and numeracy increased from 12 per cent for women and 8 per cent for girls at the baseline, to 29 per cent and 33 per cent at the follow-up. Moreover, the number of participants who were able to write a text message jumped from 8 per cent to 62 per cent."

(Wayan Vota)

This example, like those in the chapters that follow, helps show how technology can support a participatory problem-solving process for adolescent girls. The idea to teach the navigation of mobile phone menu systems through the mango tree metaphor was a result of asking the women in the target areas *how they would teach each other*. The ability for the programme to be rolled out quickly was a result of the open-source and adaptable technical framework off which it was built. Much of the development work done prior to Jokko on RapidSMS was collaboration among private sector software and technology firms, academic institutions who provided practices of monitoring and evaluation and the development sector which was able to keep the work focused on solving particularly pressing problems.
Conclusion

Technology can have an important impact on equitable development by reaching the most marginalized populations like adolescent girls who would otherwise be disempowered and difficult to reach, and whose engagement is so often key to achieving development outcomes. New and innovative uses of technology can help anchor interventions that initiate a ripple effect, spreading virally from place to place, in contrast to traditional silo-like interventions that are expensively replicated in each context and for each goal.

In addition to serving the needs of adolescent girls, perhaps one of the most striking features that technology can play is that it can allow them to take ownership of their own development. Tools for girls to advocate clearly for their needs, to spread solutions that they find compelling, and to ensure that they are considered part of these solutions rather than part of the problems, are increasingly within arm’s reach.

References


Recent years have seen a growing interest in and recognition of adolescent girls as a strategic group in addressing poverty alleviation and gender equality. The promotion of their rights is critical for supporting social justice and building inclusive societies. Programmes promoting protective environments in schools, designed to address and eliminate sexual abuse as well as harmful traditional practices, have changed the lives of millions of girls and provided valuable insights into their experiences. However, there has not yet been sufficient empirical evidence or knowledge generated to drive effective and innovative policies, in particular around emerging development issues. Even as issues related to reproductive health remain critical concerns, there is a need for a broader conceptual framework.

The book offers new conceptual as well as empirical evidence and insights into the role and potential agency of adolescent girls in meeting emerging global challenges such as demographic transitions, economic crises, climate change and the expansion of technology and innovations. The authors of this book are researchers and practitioners, including UNICEF country offices, from all regions of the world.

With thematic chapters and case studies of good practices, the book discusses and evaluates emerging evidence and alternatives in widening programmes for and with adolescent girls. It is intended to serve as a reference base for researchers and policy makers to further their efforts in achieving respect, protection, and fulfilment of the rights of girls and women.