PUTTING A MOOC FOR HUMAN RIGHTS IN THE HANDS OF KENYANS
THE HAKI ZANGU CASE FOR NON-FORMAL LEARNING

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ABSTRACT
The research goal of this project was to explore the use and effects of non-formal education and incentives in the context of a developing country. The practical aim of this project was to create, implement, and evaluate a platform about human rights that was available to any Kenyan for free in order to increase knowledge and engagement. Therefore, a non-formal massive open online course (MOOC) about human rights was designed and launched. The course was free and open to anyone in Kenya and offered both a digital badge and certificate from Stockholm University in Sweden upon completion. The course was called Haki Zangu (Kiswahili for “My Rights”), and it explored how using incentives such as a digital badge and certificate of completion affected learning outcomes. This course offered ubiquitous access based on principles of responsive web design and used audio recordings of the entire course content. The course is perpetual and still on-going, but after six months there were 160 participants who had enrolled, and ten participants had completed the course and received certificates and digital badges. The participants showed extensive enthusiasm and engagement for human rights issues, and they expressed desires to learn more and further spread knowledge about human rights. The current findings suggest that the availability of digital badges and certificates increased interest for participation and positively affected learning outcomes. Moreover, the use of a Massive Open Online Course (MOOC) format with incentives proved successful, combined with the contextualization and accessibility of the course content. Furthermore, the technical platform proved adequate for disseminating education for free in a developing country, and allowed for unencumbered access regardless of device. Lastly, a key challenge for future non-formal learning efforts in developing countries is the cost of Internet access.

KEYWORDS: mobile learning, non-formal learning, digital badges, ICT4D, human rights

1. INTRODUCTION
Mobile devices are commonplace in developing countries and ubiquitous in Kenya. Kenya has around 31 million mobile subscribers, mobile penetration is around 77%, and roughly 12.4 million of the 19.6 million Kenyans with Internet access use a mobile data subscription (Communications Commission of Kenya, 2014). Roughly 27% of Kenyans have access to the Internet and the usage of mobile devices and the Internet is increasing because 15% access the Internet via smartphones (Kenya ICT Board, 2011). As Qureshi (2010) elaborates, the capacity and maturity of ICT in a developing country can possibly decrease the digital divide and stimulate growth. In Kenya education is critical to making the transition from poor to affluent, and both formal and non-formal knowledge open new doorways to employment and a better life. Primary school in Kenya has been free since 2003, however, the reality is that formal schooling at the secondary and tertiary level is a pipe dream for many due to prohibitive fees. Kenya has a population of approximately 43 million habitants and the poorest quintile goes to school on average for 6 years and the richest quintile goes to school
on average for eight years (World Bank, 2013). In fact, 76% of the population is rural, life expectancy is 56 years, and a remarkable 67% live under the poverty line, which means that 2/3 of the population has an income of less than $2/day (World Bank, 2013). The poor are marginalized and occasionally their rights are abused, therefore there is a significant demand for Human Rights education in order to improve awareness of citizens’ rights as well as prevent violations. All of these factors lead to an uneducated, impoverished populace that generally has a device to access educational material, yet lacks avenues to recognize learning outside of formal schooling.

Within this backdrop of increasing mobile and Internet use, little formal education, and human rights abuses, the Haki Zangu project was established in cooperation with the Kenya Human Rights Commission (KHRC), which is a national non-governmental organization that promotes human rights and democratic values. The KHRC works closely with the HURINETS (grassroots community based human rights networks) in Kenya and provides equipment, support, and training for a variety of ICT initiatives. The focus of some of these initiatives used social media such as Facebook, Twitter, and blogs to monitor and report human rights violations. Furthermore, the KHRC had a goal to use ICT to empower citizens to claim their rights. Therefore, this Haki Zangu project intended to build on this idea and explore how a non-formal education about human rights with incentives for recognition and validation could address the need for free quality education in Kenya. Furthermore, this effort needed to be available from any device to take advantage of Kenyans increasing mobility.

This educational research project for human rights had two primary objectives. The first objective was practical and intended to fulfill the KHRC goal of empowering Kenyans to claim their rights in society. The second objective was research-oriented and intended to explore the use and results of a non-formal education using incentives in a developing country. The expected outcome and intended impact was to create and provide an open platform that would allow any Kenyan, regardless of ICT device, to access educational content for free and be recognized for the accomplishment. The use of ICT was principally on how Kenyans used smartphones and other mobile devices to access the course in order to truly put learning in the hands of impoverished Kenyans.

2. **PREVIOUS RESEARCH**

Concerning similar studies, a study combining MOOCs and mobile access was made in 2011 entitled MobiMOOC, which was a six-week course about mLearning. This course was a non-formal MOOC that provided a certificate of participation for memorably active participation (de Waard et al., 2012). De Waard et al. (2012) concluded that mLearning combined with the MOOC format had a great potential for informal and lifelong learning and that both allowed for knowledge creation regardless of space and contexts. Furthermore, De Waard et al. (2012, p. 44) called for further research in the two areas of mLearning and MOOCs, specifically calling for “more representation from developing nations” to “add depth to the dialogue”. Additionally, De Waard et al. (2011) stated that more research should be done to explore the realities, benefits and challenges of MOOCs and mLearning in order to map their contributing dynamics. A comparable study by Grönlund and Islam (2010) used the existing mobile infrastructure of Bangladesh and a learning management system to implement student centered learning. This study showed that an interactive, low-cost text message system was an effective way to deliver education, but some technical, organizational and social challenges were discovered. The Haki Zangu project contributes and extends aspects of both of these previous research efforts by testing a MOOC with mLearning in a developing country and by using more modern ICT.
Non-formal educational (NFE) efforts in Africa have a long history due to the millions of individuals who are excluded from formal learning due to poverty, disease, and conflict (Thompson, 2001). The concept of NFE has unfortunately developed a negative connotation due to the term non-formal being equated with a lack of formality and quality (Thompson, 2001). Additionally, Thompson (2001) found that key characteristics of non-formal educational efforts in Africa were that there was a formal-non-formal nexus, which was a similarity of curriculum between the formal and non-formal that provided a parity of esteem to the non-formal efforts, and official recognition of efforts by the government or non-government providers. Despite the fact that all the case studies regarding NFE presented by Rogers (2005) and Thompson (2001) predate the growth and expansion of the Internet and mobile devices in Africa, the conclusions regarding the need for NFE with some form of accreditation are applicable and warrant further research on formal and non-formal curriculums.

2.1. Incentives in Non-formal Education

This section presents the concept of incentives and their use in informal and non-formal contexts to explain the use of digital badges in the Haki Zangu course. The key aspects for formalizing non-formal learning are recognition, validation, and accreditation (RVA). Singh (2012) defines RVA as a practice that gives prominence to the full range of knowledge, skills, and attitudes that individuals have obtained in various contexts. Furthermore, Singh (2012) states that the RVA of non-formal and informal learning is a key facet in making lifelong learning a reality. Singh (2012) defines the three RVA concepts accordingly:

- **Recognition** is a process of granting official status to learning outcomes and/or competences, which can lead to the acknowledgement of their value in society.
- **Validation** is the confirmation by an approved body that learning outcomes or competences acquired by an individual have been assessed against reference points or standards through pre-defined assessment methodologies.
- **Accreditation** is a process by which an approved body, on the basis of assessment of learning outcomes and/or competences according to different purposes and methods, awards qualifications (certificates, diplomas or titles), or grants equivalences, credit units or exemptions, or issues documents such as portfolios of competences.

The validation of non-formal and informal learning is becoming a key aspect to lifelong learning, and the aim is to make evident the entire scope of knowledge and experience that an individual acquires, regardless of the original learning context (Colardyn & Bjornavold, 2004). Validation is a vital ingredient to ensure visibility and to indicate the appropriate value of the learning that took place (Colardyn & Bjornavold, 2004). Validation of non-formal and informal learning is often connected to formal education by providing a certificate or diploma. These documents link the assessment of any form of learning to the validation proposed in formal education systems (Colardyn & Bjornavold, 2004). Furthermore, Werquin (2012) even defines the concept of recognition of non-formal and informal learning outcomes (RNFILO) as a promising approach and explains that the increasing focus on learning outcomes and non-formal and informal learning is a strong incentive for non-education agents to become involved in the definition of standards. Additionally, Mazoué (2012) states that because of the wikification of knowledge, the view that only certain forms of officially sanctioned learning are valid is no longer a given. Colleges and universities must therefore accept competition from badge systems for accreditation. Moreover, Abramovich et al. (2013) found that participatory badges increase motivation and that different types of badges can affect learning performance.

A digital badge system is a nascent technology that intends to recognize, validate, and/or accreditize non-formal learning and achieve the aforementioned concepts of RVA.
One of the first and largest actors in this area is Mozilla with its Open Badges system (Surman, 2011). Digital badges allow badge owners to digitally show and publicize online an achieved knowledge or skill. As Carey (2012) mentions the MacArthur foundation states that badges are validated indicators of accomplishment, skill, quality, or interest. A digital badge system is more than just a simple list of merits like a CV or transcript; it is a way for students to build and display their own education using digital badges as the building blocks. Carey (2012) reinforces this idea by stating that students build badges in an act of continuous learning. Open and digital badge systems are legitimate competitors to traditional accreditation systems in secondary and tertiary educational institutions, and quite possibly threats to their dominance. The main advancement of badges is coming from industry and education reformers, rather than from conventional educational institutions (Young, 2012). However, large actors in the MOOC sphere such as Khan Academy and edX are using or intend to implement various implementations of digital badges (Young, 2012). Furthermore, as of May 2013 Mozilla’s Open Badge system will be integrated into the Moodle LMS system. Lastly, a potential drawback inherent in online learning environments is dishonesty, i.e. matters dealing with verifying the identity of a learner and ownership of work. Nevertheless, Gikandi et al. (2011) state that dishonesty can be minimized by enhancing the validity and reliability of assessment methods.

2.2. MOOC
This section presents and explains the general MOOC concept as well as its variations. In 2008 Dave Cormier created the term MOOC (Massive Online Open Course) when analyzing a course offered through the University of Manitoba in Canada entitled Connectivism and Connective Knowledge (Mackness et al., 2010; Weller & Anderson, 2013). This course had 24 participants enrolled for credit and more than 2000 informal participants. Since this meager start, 2012 was recently crowned “The Year of the MOOC” and is now more loosely defined as a free, non-credit, massive course (Pappano, 2012). Despite these massive courses being a direct open and free competitor to traditional online courses that charge a tuition and provide credit, many traditional institutions have created MOOC platforms such as edX from Harvard and MIT (Pappano, 2012). There are now even private portals that aggregate various MOOC offerings under one umbrella such as Coursera and Udacity, and Coursera is growing faster than Facebook (Pappano, 2012). The growth and popularity of these massive courses is enormous, and they are highly disruptive for higher education (Weller & Anderson, 2013). Shirky (2012) even states that these enormous courses will be equally disruptive to higher education as the MP3 music file format was to the music industry by explaining that the MOOC is the MP3 and Udacity is Napster. Shirky (2012) finally elaborates regarding how this technology will be disruptive stating MOOCs broaden the audience for education to individuals excluded from the current system.

Participation and examination rates for distance courses are notoriously low and MOOCs are extreme cases. For example, a recent study shows that the average examination rate for MOOCs is 6.8% and for courses with active examination only 4.8% (Parr, 2013). Some key issues with these massive courses are on the one hand assessment and on the other RVA. Regarding RVA, the use of certificates of accomplishment and digital badges in MOOCs are two of the most common ways for participants to show that they have completed a course or obtained a specific skill. Accreditation is a specific challenge for MOOCs, especially regarding how MOOC credit fits into the higher education landscape (Pappano, 2012). Weller and Anderson (2013) address this issue stating that the broader problem is how a large scale institution with a global brand deals with official accreditation using methods of informal assessment without a tutor to ensure a good student experience.
MOOCs have evolved overtime into three different variations: xMOOCs, cMOOCs, and quasi-MOOCs. Traditional learning institutions typically use an xMOOC, where the teacher is the expert and the learner is the consumer. These MOOCs primarily consist of little external materials and mirror traditional learning by using video lectures, quizzes, and exams. (McGreal et al., 2013). A cMOOC is based on a connectivist pedagogical model. cMOOCs are largely open and decentralized with limited structure, and learners are autonomous and view knowledge as generative with a focus on sharing and connecting with other participants through blogs, forums, and LMS (McGreal et al., 2013). A quasi-MOOC provides web-based materials as open educational resources (OER) and intends to support specific learning tasks. They provide little or no social interaction or grading, and a representative example is Khan Academy (McGreal et al., 2013).

2.3. Responsive Web Design
Responsive web design is a relevant technology because it makes access to the course from any device possible. Responsive web design is the concept of using CSS (Cascading Style Sheets), which is a style sheet language for describing the presentation of web pages, and media queries in order to determine the resolution of the device being used and adjust the delivery and presentation of the website content accordingly (Marcotte, 2010). What responsive web design basically implies is that the use of device specific apps or web applications becomes unnecessary because the content is simply manipulated according to the CSS directives provided in order to adapt the content for the screen size of each device. Furthermore, responsive web design even expands/shrinks the content to use available space when the web browser window is resized. This approach removes the need to develop separate native applications for the various mobile operating systems. Previous research even supports the use of mobile web apps instead of native apps when the primary use case is for content consumption (Jobe, 2013b).

3. METHODS
The general research methodology of this study was a design research based case study. The design research concerned the design and implementation of the Haki Zangu course. For the case study research, data collection consisted of analyzing and summarizing log data from the Moodle platform and summarizing the responses from the final evaluation completed by the participants.

Wang and Hannafin (2005) compare and describe a variety of terminology dealing with design research such as design-based research (Designed-based Research Collective, 2003), design experiments (Collins, 1992, 1999), design research (Edelson, 2002), and developmental research (Akker, 1999). Wang and Hannafin (2005) define educational design research as a flexible method that aims to improve educational practices in a real-world setting through the collaboration of researchers and practitioners using iterative analysis, design, development, and implementation. This definition appropriately describes the approached used with the Haki Zangu course because this effort took place in a real-life setting and included the three stages of design, development, and implementation. Furthermore the process was iterative and adjusted over time. Additionally, Akker et al. (2006) also describe educational design research as the systematic study of designing, developing, and evaluating educational efforts as solutions to address complex problems in educational practice. This definition further supports the use of educational design research for Haki Zangu because the challenges and complexity were numerous for developing, disseminating, and evaluating a free educational effort in Kenya.

The initial idea for a non-formal course about human rights arose from a previous research project. In that project, entitled the FrontRunner project, 30 Kenyan semi-elite
runners were provided with smartphones in order to study how the devices would affect their training, informal learning, and business opportunities. The FrontRunner project lasted one year, and through the course of the research the participants expressed an interest in further education and competence development. They were encouraged to select a topic among themselves, and somewhat surprisingly, the runners unanimously chose to take a course in human rights. They stated that formal schooling had taught them very little about human rights, and they wanted to learn more. The runners in the FrontRunner project were co-designers of the original idea for the course, as they offered critical opinions regarding the desired content and structure of the course. After receiving funding to collaborate with KHRC, the scope of the course was extended to be freely available to anyone in Kenya, rather than just the runners who were participating in the FrontRunner project. A possible solution could have been to make this effort available to anyone in the world. However, all the researchers decided to make this first version of this human rights MOOC effort strictly available to Kenyans in the beginning to test the concept and focus on human rights from a Kenyan perspective.

Subsequently, the researchers made two visits in the fall of 2012 to complete the design portion of this methodology. Numerous meetings with KHRC and the Kenya Institute of Education (KIE) were held to determine the appropriate human rights content and discuss the best technical platform to reach as many Kenyans as possible. KHRC even served as a liaison to the HURINETS, so that this effort would not only reach Kenyan citizens in and around Nairobi. However, meaningful collaboration with KIE never materialized, despite numerous meetings and promises. The meetings with KHRC with guidance of their experience with ICT efforts in Kenya resulted in a number of design principles regarding the content and structure of the human rights course. The key design guidelines that were agreed upon and used to create the structure and content of the course were:

1. access from any device
2. focus on multimedia content such as videos/photos, not just text
3. audio recordings of all textual content to mitigate poor literacy
4. offer the course in English and Kiswahili
5. focus on interaction using ethical dilemmas, forums, and personal experiences to stimulate discussions about human rights.

The researchers then used the aforementioned design guidelines to collaborate with a lawyer working with human rights in Kenya to develop the content, and also chose and designed the technical platform in order to fulfill the design parameters agreed upon with KHRC. Once the content and platform were decided, the researchers performed the development portion of the methodology. This part of the method consisted of creating the technical platform, creating the digital badge and certificate of completion, filling the course with content in English, making audio recordings of the textural content, and translating the course to Kiswahili. Once all the steps were completed, the researchers then executed the implementation phase of the method and released the English version of the Haki Zangu course to the public in November of 2012. The KHRC further assisted the deployment of the course by sharing experiences and lessons learned regarding the best way to disseminate information about the course and make it available to Kenyans.

A key aspect in creating a MOOC for this research effort lay in generating awareness and marketing the actual course. In order to create awareness, a newspaper article about the course was placed in a leading newspaper in Nairobi, and a TV interview was made by one of the Kenyan researchers. The KHRC event sent links to the course directly to their contacts in the HURINETS. Otherwise, due to financial limitations, dispersion of information about the course was relegated to word of mouth that primarily consisted of Facebook and Twitter pages for Haki Zangu. Additionally, a local artist from the Kibera slum outside of Nairobi
recorded a video entitled Haki Zetu (Our Rights), and it was posted on YouTube and linked via the aforementioned social media outlets as a means to advertise and create discussion about the course and Human Rights. The video also served as a user-friendlier medium to explore Human Rights to counterbalance the large amount of legal texts and articles about Human Rights. The video also fulfilled the design principle of using multimedia in addition to text, and it was placed at the top of the start page for the course.

Since the Haki Zangu course is perpetual, the researchers decided to collect data about the course and evaluate the results after six months. The analysis of the course consisted of two parts. The first part consisted of examining the log files of the Moodle LMS to gather concrete, quantitative data about participation in the different sections of the course. The Moodle log data contained all the activity performed in each section of the course during the given time period (six months). The Moodle LMS logged each activity according to date and time, and included each participant’s posts, edits, and views for every section of the course. The log data from the forums and all the activity were analyzed using content analysis (Schreier, 2014). The second part consisted of summarizing and analyzing the answers of the voluntary course survey that was the last section of the course. This survey consisted of 19 multiple choice and short answer questions that gathered demographic information and the participants’ opinions about the course, the pedagogy, the platform, the badge/certificate, etc.

3.1. Course Design and Content

The design and development stages resulted in guidelines that focused on relevant knowledge and facts about human rights using multimedia, the ability to interact and deliberate human rights dilemmas and issues, ubiquitous device access, and offering the content in both English and Kiswahili. From a design research standpoint, the course was developed utilizing various aspects of the different types of aforementioned MOOCs to fulfill the design guidelines. For example, the course utilized educational material from university professors and examinations as outlined in xMOOCs, social interaction in the form of mandatory forums as outlined in cMOOCs, and unscheduled access and OER resources as outlined in quasi-MOOCs. This mixed MOOC design using the Moodle platform intended to ease access for the presumed participants of non-academic Kenyans with a variety of vernaculars and questionable digital literacy. Furthermore, borrowing traditional pedagogical structures for use in non-formal educational efforts aligned well with Thompson’s (2001) formal-non-formal nexus. The Haki Zangu course consisted of 14 sections, in which relevant videos were implemented to address the first design guideline. Additionally, in each of the sections, there were short quizzes that assessed fact retention.

<table>
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<tr>
<th>Table 1 Summary of Course Contents</th>
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<tr>
<td><strong>Section Title</strong></td>
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<tr>
<td>Course Guide</td>
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<tr>
<td>Tell us about yourself</td>
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<td>Human Rights Card Game</td>
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<td>Section Title</td>
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<td>Human Rights in Everyday Life</td>
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<td>Human Rights Education (Why Study Human Rights)</td>
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<td>What are Human Rights</td>
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<td>Kenya and Human Rights</td>
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<td>How can I enforce my Human Rights?</td>
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<td>History of Human Rights</td>
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<td>Inspirational People and Organizations</td>
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<td>Dilemmas</td>
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<td>Where are Human Rights found?</td>
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<tr>
<td>Final Assessment/Examination</td>
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<td>Evaluate this education on Human Rights</td>
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Five mandatory forums, which were moderated by the researchers, addressed the design guideline of interaction. In these forums the participants posted personal human rights experiences and discussed human rights dilemmas. These discussions allowed the participants to interact with each other and deliberate views, opinions, and personal experiences. This interaction enabled the students to be active participants, not passive recipients in learning activities in order to develop their learning abilities. In order to complete the course successfully, the participants were required to access all factual portions of the course, successfully complete all quizzes, post and be active in all the mandatory forums (introduce yourself, post a positive and negative personal experience, the human rights card game, the hamburger dilemma, and the island dilemma), and successfully
complete the final examination. The final examination required the participants to act as a journalist and write a debate article using text and multimedia about a human rights issue in Kenya. Finally, the translation of the course content began shortly after the release of the English version, and the original plan was to release the Kiswahili version of the course in January of 2013. Due to a variety of setbacks and unforeseen complications with the translation, the Kiswahili version was not deployed until November 2013. Two graduates of the English version of the course translated the entire content for free, according to crowdsourcing principles, which means obtaining services or contributions using volunteers rather than traditional employees or consultants.

3.1.1. Recognition and Validation
To help formalize non-formal learning, encourage increased learning, and affect learning outcomes, the course offered incentives to recognize and validate learning. The Haki Zangu course utilized two incentives to increase and encourage participation for learning as well as provide proof of course completion: a certificate of completion and a digital badge. Both the certificate of completion and the digital badge for completion were coupled to Stockholm University. The digital badge was delivered from basno.com as Moodle 2.4 lacked a native badge implementation. See below for examples of the certificate and the digital badge:

![Figure 1: An example of the certificate of completion](image1.png)

![Figure 2: An example of the digital badge](image2.png)

3.1.2. Accessibility
Another design guideline and research aspect was that the MOOC should be accessible from any device. Device ubiquity was made possible because the Haki Zangu course used the Moodle 2.4 LMS to deliver the course content. A Moodle mobile theme was used that utilized CSS and media queries to enable a responsive web design, so that the course content adapted to the type of device that accessed the course. An example of the difference can be seen in the desktop and mobile images shown below in Figure 3 and Figure 4:
This feature fulfilled the design guideline for accessibility from any device, and drastically reduced the costs and time needed for development. To address the design guideline of audio recordings, each section that contained textual content also contained a voice recording of that content in English. Furthermore, a link on the front page of the Haki Zangu course contained a compressed file with all the audio recordings to encourage study offline. These recordings further increased accessibility to the course material by fulfilling the design principle of having audio recordings to assist those participants who could not read well. Moreover, the audio recordings enhanced learning opportunities by making offline-learning possible through the sharing of the downloaded recordings. These recordings even helped to reduce the Internet costs of the course because one participant could download all the recordings and share them with other participants.

4. RESULTS
The research aim of this effort was to investigate the use and results of this non-formal education with incentives in a developing country. The result section is divided into two subsections: course activity and course evaluation. The course activity section summarizes the results and activities of all the course participants. The course evaluation section deliberates the responses from the voluntary survey that was available at the end of the course.

4.1. Course Activity
Six months after the course started, the current status of the course such as number of participants, examinations, and course activity were extracted from the course logs in Moodle. After six months 160 Kenyans had enrolled in the course. Ten participants had completed the course, received a certificate of completion, and claimed their digital badges. Additionally, four more had handed in the final assignment.

The activity in the course was substantial and Figure 6 below shows the total sum of all forms of activity (views/posts/updates) for each section during the first 6 months.
Activity in the mandatory forums was especially noteworthy. All the forums had lively and extensive discussions by numerous participants, and 73 unique participants were active in the Introduce Yourself forum, 35 in the Human Rights Card Game and Human Rights Experience forums, and 22 in each of the dilemma forums (the Island and the Hamburger). Figure 7 shows activity for all forms of active participation, i.e. forum posts and updates.

**Figure 6: All activity for each section of the course**

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**Figure 7: Active participation in the mandatory forums**

Figures 6 and 7 provide concrete log data that genuine participation among the 160 participants was substantial. The active participation in the course in general and the forums in particular showed that interaction among the participants was lively and diverse. For example, content analysis of the different forum entries revealed that participants’ frequently critiqued
answers to the dilemmas and suggested alternative solutions. Activity was at times so fervent that the researchers needed to occasionally moderate the forums to keep the discussions on track and limit extreme opinions and overly dominant participants. The participants frequently cited in the various forums that the forums and the exchange of ideas and views were the most important aspects of the course. The participants’ opinions and activity implied that the structure and content of the course was beneficial and fulfilled the goal of empowering Kenyans about human rights. However, the opinions of those who did not complete the course are unknown. Furthermore, these results suggested that a non-formal education given in the form of a MOOC was a viable and promising approach to deliver education in a developing country.

4.2. Course Evaluation

The actual course activity above showed that the participants enthusiastically discussed and engaged with the content and each other. Content analysis showed that the participants had read and understood the course content and quickly provided feedback on each other’s answers to dilemmas and the Human Rights card game. However, the participants specifically expressed their opinions about the course format, incentives, and mobile access in the voluntary course evaluation as well. 19 participants voluntarily completed the course evaluation (all the names of respondents are pseudonyms). The response rate was low most likely due to the evaluation being voluntary and this of course questions the validity of the results. However, the researchers deemed that the 12% of the participants who completed the evaluation provided valuable insights and observations about the viability of the platform and the positive effect of incentives on learning outcomes.

Among the respondents 70% were under the age of 30, 20% were women, and 75% of the respondents had a college or university education. Therefore the respondents were primarily young, college educated men. Regarding ubiquitous access, 75% used a desktop computer to complete the course, and the remainder used a smartphone (15%) and tablet (5%). However, these numbers only reflect the use of the survey respondents. All of the runners used smartphones so the use of mobile devices was much higher, but difficult to precisely measure. Concerning the viability of the platform, only one respondent reported any technical difficulties, and that issue dealt with creating an acceptable password. The respondents stated that on average they spent a little over 30 hours working on the course. Regarding incentives, 70% stated that the course certificate positively affected their decision to follow the course, and 52% stated that the digital badge positively affected their decision. The participants explained their desire for certificates/badges accordingly, “...because I will be able to show others that I learned about human rights.” (John), and “It meant that the course was well researched and competitive.” (Esther), and finally “I was curious to acquire this coveted badge as a symbol of my participation in Human Rights course.” (Sam). Additionally, those who did not find it important with a certificate/digital badge claimed, “it did not affect since I have longed to do a human right based course.” (Mary).

Regarding the lack of cost, 73% of the respondents stated that the fact that the course was free affected their decision to follow the course as well. Concerning course content and engagement, the dilemmas were most often cited as the most interesting and important part of the course and many specifically mentioned interactivity, the sharing of ideas and experiences, and discussions in general as key to learning. The participants found it inspirational to hear other peoples’ real life experiences, in which many fellow Kenyans tried to adhere to and promote Human Rights.

One reason for participating in the course was, not surprisingly, interest in the topic, but also to understand and support fellow Kenyans. The respondents’ answers exemplified this with comments such as, “…to assist my fellow citizens in one way or the other have been denied their rights.” (Craig), or “I am concerned and passionate about the rights of women and children.” (Andrew), and finally “I have kept wondering why people always complain of their human rights being violated from the small to the big, for this reason I chose to follow this course to equip myself with logical information on human rights so as be able to assist in the society.” (Sara).
Finally, the greatest support for the viability of the platform and the success of the course came from the final question. 100% of the respondents stated that the course would be useful in their daily life, and that they would like the opportunity to study other courses in different subjects such as computer studies, health issues (AIDS/HIV, maternity care, etc.), environmental issues, and gender equality using the same format.

5. DISCUSSION
Although 160 participants stretches the definition of a MOOC, the use of a MOOC to deliver a non-formal educational effort appears promising and because the course is ongoing, growth is slow but continuous. Course enrollment was less than desired, but reasonable considering the nominal efforts made to advertise for the course. However, the value of the Haki Zangu project is not only based on the completion rate. Enrollment and participation is just as valuable and significant as completion. A MOOC is not just a product but also a process.

Dissemination primarily took place virally through social media, and enrollment numbers, activity, and discussions after six months were acceptable. The vigorous course activity and positive results from the evaluation supported the idea that the MOOC format was a viable method to provide a free, non-formal course. The responding participants highly valued both the certificate of completion and digital badge as a means to recognize and validate their knowledge about Human Rights. The achievement of finishing the course and this inclination was entirely in line with the concepts presented by Singh (2012).

Examination rates were poor despite participants stating that the certificate and badge positively affected their choice to follow the course, and they were very satisfied with the course in general. However, examination rates for distance courses are notoriously low, so what are the possible reasons for poor examination rates in the Haki Zangu effort? As previously mentioned, the completion rate of MOOCs was around 7% for courses with automatic grading and around 5% for courses with manual grading. Thus the 6% completion rate of the Haki Zangu MOOC was actually slightly above average and especially encouraging in that the result occurred in a low-income country. Another important consequence of this educational effort was that only educated Kenyans completed the course, and the majority of the 160 participants were well educated. Advertising via newspaper, TV media, and word of mouth promotion via Facebook and Twitter had a limited reach among the poorer or less-educated segments of Kenyan society. A possible solution to this issue could be to advertise in media that reach the poor and marginalized which at this point in time is radio, as this medium is generally available in Kiswahili and/or local vernaculars. Another aspect that might have influenced the lack of enrollment by impoverished segments of society was that the course was not available in Kiswahili yet.

Another factor for the low completion rate was the cost of an Internet connection. During the course, the teachers contacted all participants via email to encourage course completion. A typical response was basically “we want to complete the course and are trying to, but we do not have money for data minutes (i.e. Internet connection) or money to buy time at cyber (Kenyan Internet café)”. This fact is also supported by the findings in the study made by the Kenya ICT Board (2011) that found that barriers to ICT usage were a lack of available computers, high costs of buying/renting computers, and high costs of Internet connections. The participants’ enthusiastic responses to the dilemmas and discussions used in the course suggest that the implemented course design and pedagogy were appropriate. Additionally, in the active participation in the course, the posting and editing posts were significantly more extensive in the forums and dilemmas compared to the simple acts of viewing informational content.

Because the cost of a computer and/or Internet access was a crucial, limiting factor for completing the course, a model for financing course participation is proposed. A model based on a micro-financing model frequently used in developing countries is envisioned as a viable means to provide monetary support for access to the content in the form of financed Internet time. This micro financing model is a retrospective “pay for performance” incentive. This means that once a participant successfully completed a specific module, a scratch card code would be made available...
to the participant in order to pay for the time spent online. In this way, the participant could finance his/her studies while the content providers could be assured that the money was actually being used for its intended purpose. Technically, such a solution could be easily achieved by utilizing the widespread mobile payment system (M-PESA). An ideal solution would involve the local ISPs (Internet Service Providers) that could provide Internet scratch cards upon the achievement of a digital badge and thus subsidize educational efforts.

Another way to address the poor completion rates of the course is to utilize the approval of digital badges in a more comprehensive and conducive manner. For example, each section or each mandatory forum in the Haki Zangu course could implement a separate badge to show incremental achievement towards the ultimate goal of finishing the course. Additionally, a leader board or progress board could be made visible for all participants that showed badges achieved by all participants in order to improve motivation to complete the course. McDaniel, Lindgren, and Friskics (2012) showed in a similar study that incremental badges and a leader board could be motivational and improve progress. The achievement of each incremental badge could even be used as indicators for the “pay for performance” model suggested above.

A human rights education is important for anyone, but in particular for Kenyans because of the Kenyan election in 2013. Learning experiences from the post-election violence in 2008 created a need for improvement of Human Rights to protect the ideas of human equality and democracy. This research showed it was possible to educate and empower Kenyans using a MOOC. Furthermore, the participants’ experiences and the viability of the platform allude to the possibility of offering other educational opportunities to allow more people to partake of non-formal learning initiatives, which are necessary in today’s society to gain access to job opportunities. For Kenyans, with a costly educational system and many dropouts for various reasons, it is necessary to expand the classroom and enlarge the learning environment. Availability and access to education requires more formalized non-formal learning.

A final important issue of the Haki Zangu course deals with the perpetuity of this MOOC effort. As the course continues and grows eventually scalability and sustainability will become an issue, especially if additional changes are made in advertising efforts and in how digital badges are used. If enrollment and examination rates increase substantially, different examination methods will be necessary. Potential solutions lie in implementing various peer review systems where both novice and advanced learners support each other. Peer review systems or even expert review systems could also employ a micropayment reward system similar to the aforementioned system. The crowdsourcing model used to translate the course into Kiswahili could even be used to support peer review and examination. Crowdsourcing efforts could even be vital in further contextualization efforts such as translating non-formal educational efforts into other tribal vernaculars.

6. CONCLUSIONS
The Haki Zangu course to a certain extent fulfilled both the research and practical aims of the project. The first aim of empowering and engaging Kenyans in human rights was reached based on the insightful discussions and level of engagement in the course, especially in the forums and dilemmas. The respondents of the course evaluation also expressed increased knowledge, increased engagement for human rights, and a desire to continue to use the platform to study courses in other subjects. Even though only 6% completed the course, the majority of the 160 participants actively expressed opinions and showed critical knowledge about human rights in the different sections of the course. Comparisons of the results of this non-formal learning effort with traditional learning are inevitable, but the true benefit of a non-formal MOOC in a developing country is the process and not just the product. Thus, all the Haki Zangu participants were successful simply by actively participating and sharing their human rights experiences.

The second aim was partially fulfilled because the Haki Zangu course demonstrated that from a technical perspective a MOOC using the Moodle platform with mobile themes in combination with certificates and badges was a viable platform to give and validate non-formal educational efforts and has further potential to disseminate education in developing countries.
Participants had few problems accessing the course from a variety of devices. They appreciated and valued both the certificate and badge, and expressed tremendous interest in partaking in additional educational efforts. Certificates and digital badges could be crucial in low-income countries in making non-formal learning and skills more acceptable and portable. While there were no technical issues encountered regarding device type, similar efforts must take cost into consideration to increase access regardless of device and improve the probability of reaching all citizens, even the poor. Therefore, the second aim of this research effort was not practically fulfilled because the cost of Internet access was still a considerable hindrance, though the use of the aforementioned “pay for performance” system and/or crowdfunding could alleviate this obstacle. Specifically, these results contribute to previous research to provide an increased dialogue to mobile-centric MOOC efforts in developing countries as called for by De Waard et al. (2012). The results even contribute to extend the research made by Grönlund and Islam (2010). Simply stated, this research effort suggests that MOOCs using responsive web techniques in ICT4D countries can be a fundamental tool for combating educational shortcomings and poor graduation rates for encouraging lifelong and blended learning efforts.

Regarding future work, the researchers intend to create a Kenyan Cloud School (KCS) using the contributions and results from the Haki Zangu effort. The KCS (Jobe, 2013a) is the working name for a comprehensive educational effort that intends to be a completely free, ongoing MOOC that consists of the entire core curriculum studied at the secondary level in Kenya. The KCS effort will make adjustments to the Haki Zangu case to accommodate for Internet costs, to crowdsource for translation and examination in native vernaculars, and to use digital badges more comprehensively. The KCS is envisioned as a way to maximize the use of the platform used for the Haki Zangu effort to make a real impact in developing countries. The goal is to use MOOCs as both non-formal educational resources for individuals who cannot afford traditional schooling as well as complementary resources for blended learning in existing secondary school institutions. An expected outcome is that MOOCs with ubiquitous device access and digital badges can combat the extremely low secondary school graduation rates and all the societal problems that a lack of education eventually leads to such as unemployment, poverty, etc. Hopefully, this extension of the Haki Zangu effort will increase the use of MOOCs for educational initiatives in low-income countries and increase the positive outcomes on learning, awareness, and empowerment.

7. REFERENCES


