

Enabling Faith-Inspired Education on the Sustainable Development Goals Through e-Learning

Judith Gottschalk and Nicolai Winther-Nielsen

Abstract The Sustainable Development Goals (SDGs) are composed from a variety of universal goals. They come with a heavy load on ethical demands while they do not provide any ethical guidance. One possibility to fill this void is to teach the SDGs with a faith-based narrative. Grown out of a workshop by Bread for World we will present our approach of Ownership-inspired Behavior-driven development, which is a strategy for an e-learning governance to introduce an Android app to support e-learning on the SDGs in theological education in remote areas in the Global South. Our goal is to develop a governance strategy for higher theological education to fill the SDGs with a faith-based narrative by using e-learning technology. Based on the staircase curriculum for the education of future church leaders developed by the British FBO Relay Trust we introduce the theoretical framework for this goal, which makes the transfer from a hierarchical governance structure found in many African societies into a dynamic e-learning framework.

Keywords Sustainable development goals • Ownership • e-learning Governance • Africa • Theology • Faith-based organizations

1 Introduction

The SDGs of the United Nations, are to be reached within the next 13 years. They are part of the 2030 Agenda for Sustainable Development. The aim of these goals is to motivate efforts across the world to prevent poverty, inequality, and climate

J. Gottschalk (✉)

Department of Communication and Psychology, Aalborg University,
Rendsburggade 14, 9000 Aalborg, Denmark
e-mail: gottschalk.judith@gmail.com

N. Winther-Nielsen

Fjellhaug International University College Denmark, Leifsgade 33,
2300 Copenhagen, Denmark
e-mail: nwn@dbi.edu

© Springer International Publishing AG 2018

W. Leal Filho (ed.), *Implementing Sustainability in the Curriculum of Universities*,
World Sustainability Series, https://doi.org/10.1007/978-3-319-70281-0_2

change. The SDGs cover universal topics: planet, people, prosperity, peace, and partnership. All of these topics are associated with many ethical demands, but the SDGs as do not provide any ethical guidance which is necessary in human society to do morally valid development work that does no harm. There is an ethical void within the SDGs leaving open how they can be reached, if they can be reached through more globalization through structural adjustment programs as proposed by, e.g. the World Bank, through grass-root approaches and empowerment as, e.g. proposed Bread for the World or the Relay Trust; generally the question is, through which ethical standards the SDGs are to be reached. One possible way to fill this void is to communicate and teach the SDGs with a faith-based narrative. And this is the project of the Relay Trust and the goal this paper achieves: To develop a governance strategy for higher theological education to fill the SDGs with a faith-based narrative by using e-learning technology and a staircase curriculum for the education of future church leaders. The theoretical framework for this goal is developed as a governance model called Ownership-inspired Behavior-driven development which makes the transfer from a hierarchical governance structure found in many African societies into a dynamic e-learning framework.

We are dealing with the following problems in the development of a curriculum for teaching the SDGs:

- (1) What does an educational governance system that can implement an e-learning approach within a theological curriculum on the African continent look like?
- (2) How can technology support the implementation of a curriculum concerning the SDGs within theological education?
- (3) How can we enable theology to support SDG-based training in a theological curriculum to fill the ethical gap in the SDGs?

Faith-based organizations (FBOs) and religious leaders play a significant role in HIV and AIDS prevention, and they support the community through hospitals and doctors. More importantly do religious leaders prevent, subdue or possibly annihilate the stigmatization of HIV and AIDS victims. Stigmatization is the true killer of HIV/AIDS victims as it causes the disease to be taboo, leading to denial and no spreading of information.

Due to their understanding of the society in which they are located, FBOs and religious leaders can begin a dialog about issues that are connected to faith, such as family planning (cf. Karam 2010). Most people are faithful to a religion. This means that FBOs can have a huge impact on people and can inform them about the SDGs (cf. Karam 2015). For this reason, it is necessary not only to teach the SDGs, their philosophy, and their motivations to future church leaders but also to connect them to an ethical narrative based on the Bible, which influences all the actions pastors take and decisions they make as church leaders. That the future church leaders understand the SDGs will help empower African countries to develop. African countries need their own capacities to overcome their poverty, which may come from religious actors, to support its development.

Countries like Sierra Leone, The Gambia, Liberia and Cameroon, where the Relay Trust does its work within the Anglican Church are on the last ranks of the

human development index. Being on these ranks has tremendous consequences for education in these countries: Many, are missing a well-established educational system. A high percentage of adults are illiterate. In case schools are found, these are situated close to bigger cities like Freetown in Sierra Leone or Kinshasa in the Democratic Republic of Congo. This urbanization increases problems of hunger, diseases and environmental problems within urban regions at least for the people who had to move from the countryside to these overcrowded cities where they can only with difficulty effort their livelihood. Therefore connecting remote theological seminaries to universities in urban areas and to enable education in the country-side is a reasonable and sustainable approach.

With this paper, we aim to tell a story about how we will use a robust persuasive e-learning governance system for higher education of church leaders in Africa.

We aim to achieve a robust e-learning governance for higher education on the African continent to make effective use of computer technology to support a remote training of future church leaders on the SDGs which can be realized with a smartphone app. The result is a theological curriculum involving the SDGs as well as design an interactive knowledge app for an SDG-based dogmatics and ethics course.

Through its design the app is usable not only for higher literate education but since it is designed as an app for managing oral knowledge likewise in a way that it can be used for lower education. Based on the Paris Declaration of 2005 and discussions surrounding it (cf. Müller 2009; cf. Mummert 2009), we will illustrate how modern persuasive computer systems support developmental cooperation when used in the context of e-learning governance at universities in countries in the Global South, especially in light of the debate on ownership, participation, and empowerment. This paper is organized as follows: in Sect. 2 we discuss the background of our research, in Sect. 3 we introduce our e-learning governance system, and then in Sect. 4 we present our approach to a curriculum concerning SDGs.

2 Background

The persuasive framework introduced by Winther-Nielsen (2013b, 2014) and Gottschalk and Winther-Nielsen (2013) emerged out of B.J. Fogg's work on computers as persuasive technology (cf. Fogg 2003). Winther-Nielsen (2013b) and Gottschalk and Winther-Nielsen (2013) implemented this system in a learning software called Bible Online Learner using a plug-in, Learning Journey, and Laurillard's (2012) model for learning practice capabilities from an external environment (cf. Winther-Nielsen accepted). Winther-Nielsen (2014) developed a persuasive model called RAMP, which he uses to explain how corpus-driven language learning can be used within a persuasive model. RAMP explains that corpus technology excels in four factors that must be considered. The primary goal for a learning technology must be to empower social relationships (R) among

learners. For the technology to stimulate interest and offer a pleasant user experience, learners must be absorbed in learning tasks that increase autonomy (A) and mastery (M) simultaneously. This type of intrinsic motivation is necessary as no technology will succeed if the learner does not have an identifiable purpose (P).

Of relevance in this paper is the line between a persuasive software and a persuasive strategy for implementing a successful e-learning governance system. This system will be implemented at a university in a developing country in which teaching through technology is unusual given environmental constraints, like electricity blackouts and unstable Internet connection, and user-related constraints, which occur because most e-learning systems are designed for the needs of societies of the Global North.

An important concept for the e-learning governance is the Kairos. The Kairos is the best moment at which to present a message (cf. Fogg 2003), and the ideal moment to motivate a student can be determined through the use of technology and used to encourage students to make the most of their learning (cf. Winther-Nielsen 2014).

E-learning projects from the Global North usually face challenges in Africa. Teaching methods like the flipped classroom (cf. Winther-Nielsen 2014) are designed to suit students from the Global North, which is composed primarily of individualistic societies (cf. Danner 2012). African societies are based on elder systems, in which the elders in a village have a say in all decisions made. The concept of the individual is not as present as it is in, European societies. In Africa, people identify themselves through their community and traditions (cf. Danner 2012). A student would not stand up in a flipped classroom and ask a tricky question because he might question the authority of the professor and hence question his role as an Elder. Winther-Nielsen has however shown that this teaching method can apply within an African context when an appropriate learning context is created which is based on mutual trust. From a governance perspective, African society is structured as a classical hierarchy, while in e-learning systems students are treated as individual actors who can determine the pace of their own learning.

The potential of ICT in development projects was acknowledged by UNESCO (2005), which views “knowledge societies” as an accelerator of development in developing countries. An example is the \$100 laptop project, applied to schools in developing countries (cf. Ciborra 2003). Many articles cover issues of ICT projects in Africa, like public infrastructure, governance, accountability, civil society, entrepreneurial and economic activity, and access to global markets and resources (Thompson and Walsham 2010). Bada (2002) discusses the adaptation of a local bank’s Enterprise Resource Planning System, while Braa and Hedberg (2002) use ICT to empower health workers in South Africa. Ngwenyama et al. (2006), dealt with health education in West African countries and determined causality from statistical correlations between ICT investments in health and education. One criticism of these studies presented by Thompson and Walsham (2010) is that they do not focus on strategic development, but on the design and implementation of solutions for specific developing countries. In this paper, we aim to develop a governance strategy for e-learning in African countries that will provide future faith

actors with in-depth theological knowledge and enable teaching of and improve sensitivity to the SDGs.

In 2012, during the Rio+20 summit of the United Nations, governments committed to creating a set of SDGs that would be integrated into the follow-up Millennium Development Goals (MDGs) after which were reached their deadline in 2015 (cf. Griggs 2013). In this way, the development paradigm, which included issues concerning the economy, society, and the Earth's life-support system, was reached (cf. Griggs 2013). The MDGs are a historic achievement because they helped mobilize countries across the globe to address social priorities. The SDGs go a step further, adding the concept of sustainability to all efforts to improve global development, including efforts related to education.

An engagement of FBOs in reaching the SDGs occurs because most people follow a religion. Thus, FBOs have a huge impact and can cause people to work to achieve the SDGs. 80% of the earth's population are religious, guided by religious leaders, who can be motivated to work for the implementation of the SDG. As a conclusion faith-based actors have a great impact on their communities and can be used, for example, to work towards peacemaking, family planning, gender equality, education, and prosperity (cf. Karam 2010, 2015; Hayward 2012).

Following the Paris Declaration of 2005, we hypothesize that, through ownership, it is possible to facilitate developmental cooperation in which both parties share the same rights and recognition (cf. Müller 2009) in order to achieve an SDG. Such a partnership would support the training of future church leaders and the development of partnerships between organizations from the Global North and Global South to successfully work towards the UN's 2030 Agenda.

In our paper we extend the concept of behavior-driven development (BDD) from the IT sector to develop a strategy that we call ownership-inspired BDD (OIBDD). BDD was introduced by North (2006) as an improvement of test-driven development, in which programmers first write a software test that fails and then make small changes until it works successful. BDD uses stories as starting point. In our context formulating a story means developing a causal chain which should be reached through the development work project. Which role the concept of ownership plays is described in the next section.

3 An e-Learning Governance Model for Countries in the Global South

In the context of development cooperation, ownership requires partners to assume responsibility for their own development because they have enough self-confidence to cooperate with an overseas partner organization. Self-confidence of the local partner is not always certain in a development work due to a dependence relation, which sometimes occurs in these partnerships. However, ownership creates partnerships, and partnerships between local partners and operating non-governmental

organizations (NGO) are required to achieve the SDGs (cf. Müller 2009). We are talking about a mutual beneficial relationship within our project, where the African partners are empowered to be independent and equal to not support colonial concepts. Applying a sound user-centered design, we aim to empower staff and students at a university in the Global South to enable future church leaders to fill the ethical gap in the SDGs.

One of the main problems concerning development cooperation and the debate on ownership is the gap between the technical approach to implementing an ICT solution and management of the problem with achieving sustainability (cf. Müller 2009; cf. Thompson and Walsham 2010).

The goals of a persuasive technology in a development context are to achieve behavioral change and create intrinsic motivation to exhibit a specific behavior (cf. Fogg 2003; cf. Winther-Nielsen 2014). According to Müller, bridging the gap between ideas and practical solutions in the ownership debate requires the concept of ownership to be enabled within the context of developmental cooperation. However, it is important that ownership is an objective that needs to be reached; the overarching objective of developmental cooperation is to achieve ownership (cf. Beier 2009). An extensive study of various approaches to development cooperation, concluded that a mix of leadership and participation creates ownership (cf. Mummert 2009). This is also what the Paris Declaration on Aid Effectiveness stated in 2005: ownership will be achieved when partner organizations lead the development and implementation of strategies through broad consultative processes (cf. Mummert 2009). Following the World Bank to create ownership, there must be sufficient support through feedback by stakeholders in the overseas partner organizations to enable a country to achieve ownership (cf. Mummert 2009). Following these perspectives, the main objectives of creating ownership and responsibility for partner organizations in a context such as Africa are to provide them with feedback and monitor the actions they take to complete the developmental cooperation project.

The new persuasive development model, we suggest for creating ownership during developmental cooperation and from which we derived an e-learning governance system, is comprised of phases 1 and 2 of Oinas-Kukkonen and Harjumaa's (2009) model and Winther-Nielsen's (2013a, 2013b, 2014) model for persuasive learning technology. Oinas-Kukkonen and Harjumaa (2009) discuss how the design of every persuasive system begins: analysis of the persuasive context. This is indispensable when determining the Kairos in a persuasive system and identifying the point at which intrinsic factors for changing a behavior and learning in a persuasive context, like Winther-Nielsen's (2013a, 2013b, 2014) approach, can be developed. Methods to do this are e.g. structured interviews, observation or participatory methods like a well-being ranking or a cause-and-effect chain. It is important to determine who is being persuaded, and who the persuader is. This determination is what Oinas-Kukkonen and Harjumaa (2009) call the intent. They state that the context must be established before a persuasive system can be established. Without knowledge of the goal of the persuasive design, it is not

possible to determine which persuasive functions will better persuade the users of the system (cf. Oinas-Kukkonen and Harjuma [2009](#)).

When developing a persuasion strategy, one must determine the message and how it will be transmitted. In other words, the following question must be answered: How will a user utilize the software to reach a specific state or change a specific habit (cf. Oinas-Kukkonen and Harjuma [2009](#))? In Gottschalk (submitted) concepts like Participatory Well-being, Situational Analysis and Goal Establishment, Performance Appraisal Groups and Participatory Impact Analyses, which originally come from the Participatory Rural Appraisal are described in the context of modern software development. For our knowledge app, the message is that learners should improve their knowledge of the ethical consequences of their actions by filling the ethical void in the SDGs with moral concepts from Christian theology to achieve the SDGs within a morally valid framework. One way to transmit this message is through software, which must be easy to use and useful within a learning context. This is a narrow use case with a broad perspective. The goal of the app is to improve the educational governance of an African university, help the university develop a curriculum involving the SDGs, and use this persuasive concept as a strategy for development of e-learning and IT governance in developing countries.

There are two phases of persuasion that a persuasive software must handle: (1) persuasion at the macro level, which is external to the system and focuses on persuasive postulates and analysis before a persuasive system is established, and (2) persuasion on the micro level, which occurs through various persuasive functions. The concept of Kairos is essential to answering this question as our hypothesis is that ownership is a Kairos itself. The goal of the persuasion is important. For example, people who would like to play more sports might prefer jogging on a warm, sunny day and reach their Kairos when a persuasive system suggests that they go jogging on such a day (cf. Øhrstrøm et al. [2009](#)). A number of identifiers might help to estimate when a specific Kairos occurs. These identifiers could be keyboard or mouse activity or physical measures, like heart or breathe rate (cf. Øhrstrøm et al. [2009](#)). Such a factor usually has a causal impact on the presence of a Kairos, while the Kairos has a causal impact on the identifier (cf. Øhrstrøm et al. [2009](#)).

One Kairos in our model is ownership. As Fig. 1 shows, the following factors influence ownership and create a Kairos: (a) leadership, (b) participation, (c) feedback, and (d) monitoring. Within our model, these four factors, which were derived from Müller ([2009](#)) and Mummert ([2009](#)), are random variables that constitute the Kairos of ownership. This is what Fig. 1 describes: It is an ontology of the Kairos of Ownership, which is defined through the above mentioned four variables. (cf. Øhrstrøm et al. [2009](#)).

Again, we must differentiate between the macro level of persuasion, which takes place before the persuasive system is developed and implemented, and the micro level of persuasion, which occurs within the persuasive system once it is programmed and implemented. However, when no micro level can be reached because the system has not been developed yet, the system is not capable of determining the

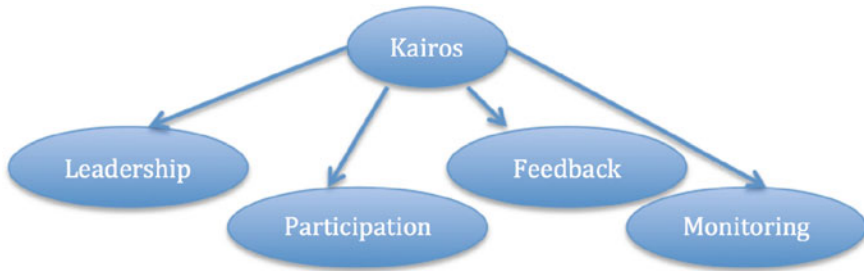


Fig. 1 Network of ownership

Kairos of ownership. In this case, it is necessary to rely on persuaders who want to encourage ownership and participation to empower their local partners within the persuasive context. Within our context of a persuasive e-learning system and its implementation within Africa, we can illustrate this reliance using a flow chart of an IT strategy for ICT during developmental cooperation, which is motivated by the analysis of persuasive context developed by Oinas-Kukkonen and Harjumaa (2009). It is important to keep in mind what we noted in Sect. 2 regarding African sociology: many Africans grow up within a hierarchical elder system, but e-learning systems from the Global North use a network governance model that is decentralized and not hierarchically structured. A method for gradually transferring a hierarchy to a network is shown below:

1. The Intent

- a. In a collaboration between the local partner and the NGO, assign the persuader roles to the responsible actors—random variables: leadership and participation
- b. Determine the change context and what the indicators for the change are—random variables: Leadership, participation, monitoring and feedback

2. The Event

- a. Use the input from the persuadees to learn more about the use case to implement a technical solution for it—random variables: leadership, feedback and participation
- b. Learn more about the persuadee to tailor your persuasive system accordingly. Act according to the needs of the user—random variables: feedback, participation, and monitoring
- c. Learn more about the context in which your system should operate—random variables: feedback and participation

3. The Strategy

- a. Determine the message the persuadee needs for the persuasive process and react to feedback from her/him—random variables: feedback, participation and leadership.

Each of the three aspects of the persuasive analysis uses the four variables—leadership, participation, feedback, and monitoring—from our ontology of ownership described in Fig. 1, as persuasive functions to create a Kairos of ownership within a development project. This occurs at the macro level of persuasion, before the technology is implemented. At the micro level of persuasion, we used the four random variables to create a Kairos. With the knowledge app, both teachers and students should be able to assume leadership by uploading content to the e-learning system. User-centered design is a strategy in which persuasive design and governance go hand in hand. In addition, we are able involve the partner organization in the process of developing an app to motivate the organization to create ownership, which serves as participation in developmental cooperation, the basis for empowerment of a community. Then, the second element of our governance approach, BDD, comes into play to create the case for our approach to e-learning governance: OIBDD. Through OIBDD, teachers will be able to assume leadership in an e-learning context and be part of the curriculum development process in their teaching. This is a way to make them responsible for their teaching and give them the ability to participate in processes going on at a university. Through ownership and the possibility of taking over responsibility for their teaching, we gradually turn the hierarchical model of an elder system at an African university into a network structure.

The idea for our knowledge app was developed during a workshop on knowledge transfer in oral cultures organized by the German NGO Bread for the World. The app can achieve those goals using the following developmental methods, which are specifically relevant within oral cultures:

- It is not specifically text-based; it visualizes data and knowledge, meaning that the app uses icons that are culturally appropriate and developed through user-centered design.
- It makes extensive upload and download of videos and speech messages possible. These messages are available in both the language of the country the app is used in and the local dialect of the community whose knowledge is being transferred. Also, an English transliteration of each message exists.
- It is collaborative; similar to a social media platform, everyone is involved in the development of content for the app.

We will use the knowledge app as an oral knowledge hub. This is where the persuasive OIBDD approach comes into play; through the free upload and generation of teaching content, the teachers using the knowledge app can generate stories based on the staircase curriculum, which we will describe in Sect. 4, and from these stories, the teacher can tailor and tunnel—in the sense of Winther-Nielsen (2014) and Fogg (2003)—to guide the students to the desired learning object. Then, the micro level of persuasion described in Winther-Nielsen’s RAMP model comes into play, because the app itself is used now.

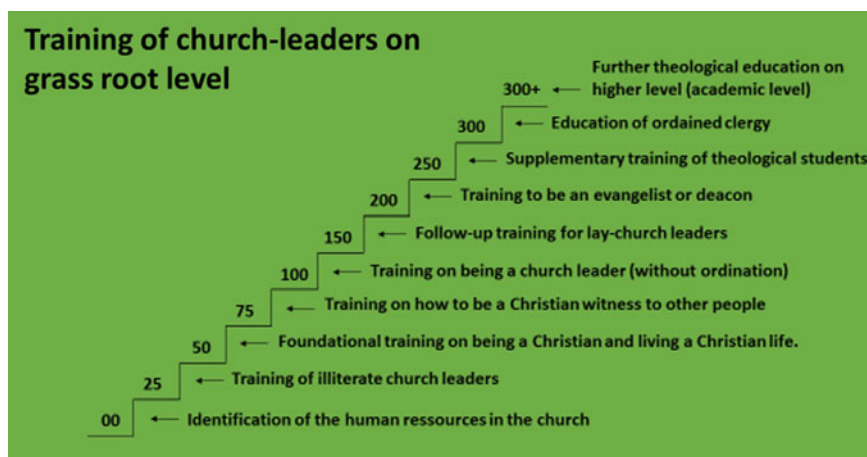


Fig. 2 Staircase curriculum developed by Relay Trust (We publish this figure by friendly permission from the Relay Trust)

4 The Governance Model at Work: Technology and Curriculum Design Through Ownership-Inspired Governance

The curriculum developed by Relay Trust is a staircase model and aims to work on Christian formation at all levels of church leadership. Within the program, practical and theoretical training are combined and supported by experiences from church life. Through this, the practical implications and constant contextual adaption of the lessons are ensured so that the training is relevant to students and the church. The Relay Trust makes training available in local and remote contexts instead of bringing students into foreign contexts. Especially at higher educational levels, the program enables learners to gain deep theological knowledge, which will support their efforts to obtain bachelor's, master's, or doctorate degrees in theology. In the staircase model students can continue to further their training and advance to higher levels provided they are motivated and have the necessary skills. The advantage of the staircase model is that students can follow their learning progress. Every step in the system is a closed unit and prepares the student for a certain level of leadership. The staircase model is shown in Fig. 2.

The SDGs do not have any ethical intent; thus, they have an ethical gap. This is where FBOs like Relay Trust and churches come into play. Churches and FBOs are very engaged in a number of issues, including HIV and AIDS awareness and prevention, peace and reconciliation after a war, building and running schools when the state is unable to do so, agricultural development, malaria prevention, skills acquisition among young people, and running hospitals etc. In addition, churches support refugees, engage in peace work, and organize campaigns to prevent

terrorism. All of these issues are covered by the SDGs. Thus, there is an indirect link between the SDGs and theological education because of the responsibilities churches take on. In our project, we aim to directly link them using e-learning to fill the ethical void in the SDGs. The cornerstone of the staircase model is that students gain an understanding of the Christian faith as they continue on their academic paths; an essential part of theological education is learning the foundations of Christian ethics. This is how the SDGs are connected to our knowledge app. The app offers learners video and audio material concerning all the broad topics related to the SDGs. It relates this knowledge to Christian theology, filling the ethical void in the SDGs. For instances, when talking about the planet, the app makes reference to the Christian perspective on taking care of the plant, and when discussing the issue of prosperity, we can use the e-learning system to teach the church-leaders the basics of entrepreneurship and trade to make them tent-missionaries. This way, it frames the SDGs within the moral and ethical context of the Christian faith. Future church leaders are enabled to act in contexts in which churches build hospitals and do peace work. Importantly, all moral perspectives of the Christian faith are based on human rights.

Relay Trust defines itself as an FBO that aims to help struggling evangelical, mostly Anglican churches fight against organizational challenges due to poor education of their pastors. We focus specifically on francophone Anglican churches in remote rural areas because Francophone Anglican churches are often left behind. The reasons are that Anglican churches are considered as English churches and hence most teaching material is in English so that the Francophone churches are challenged by the language barrier. All the churches we partnered with are situated in countries listed in the last third of the Human Development Index (Gambia is 172nd, Sierra Leone is 183rd, and the Democratic Republic of Congo is 186th).

These countries' low rank on the Human Development Index means that they are lacking well-established educational systems with primary schools. Our development projects seek to improve the SDG-inspired education of pastors in remote areas, as educated church leaders are often the only people in a village who receive higher education. However in most cases church leaders work as teachers in schools because they are literate and lead a church as a side-job. In these cases they earn the most of their income through teaching in schools.

During development projects, several models of higher education for pastors have been tested. Especially in francophone countries, students tend to be sent to France to receive higher education. However, these students must deal with intercultural challenges: they must keep up with students who grew up within a European educational system and are not expected to meet the demands of their family and village. As a consequence, many students do not finish their degrees or, if they do finish their degrees, do not return to their home countries. Generally for the students living abroad in a foreign contexts is a challenge because many students cannot afford the tuition fees themselves and so often not the best qualified student is selected to study abroad but the one with the best connections. Nevertheless the students receive degrees, even Ph.D.s. The problem resulting from this is that many universities do not consider an African Ph.D. holder as likewise

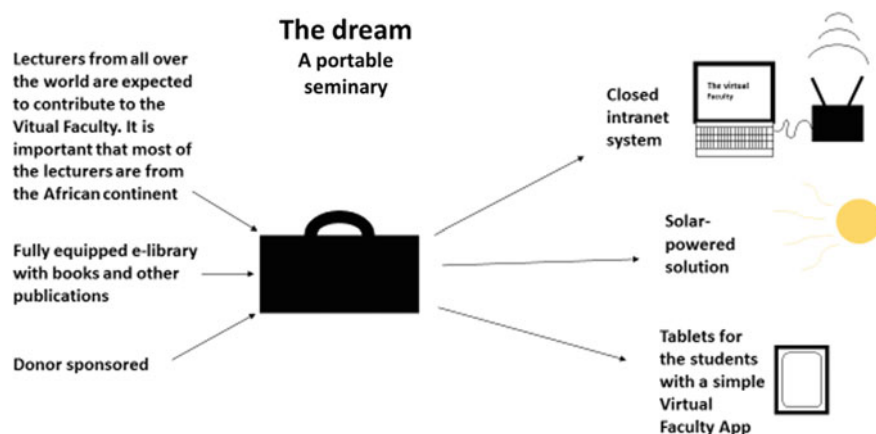


Fig. 3 Portable seminary for church leader training (We publish this figure by friendly permission from the Relay Trust)

qualified as European Ph.D. holders. Therefore our SDG-inspired curriculum can be applied in francophone countries in Western Africa through modern technology, especially mobile applications (Android smartphones are extremely widespread on the African continent).

We based our technology on smartphones and tablets which are found throughout the African continent. We developed the following app-based infrastructure in seminaries we support with the app (Fig. 3).

Relay Trust's concept is simple: given that many theology students in Sierra Leone and other African countries are situated in remote seminaries and that mobile phones are widely available on the African continent, the Trust set up a portable seminary based on the knowledge app presented in this paper. With this app, students can work at home or at a university and progress through the staircase training at a grassroots level. Thus, theological training can support SDG-based training through technology.

5 Conclusion

In this paper we have shown that concepts like Behavior-driven Development which are originally from the IT sector can be extended with one of the key concepts from the Paris 2005 declaration: Ownership. Based on this we have developed a governance strategy for e-learning to teach on the SDGs which is suitable for countries of the Global South. This strategy is specifically suitable as it takes into account the specific socio-structures found in African societies. By closely referencing church-based training, we are able to not only teach about the SDGs within the staircase curriculum but also fill the ethical void of the SDGs with

moral faith-based narratives we are also able to show how technology can support e-learning in the Global South. For this we developed the concept of a portable seminary specifically for church-based training. Thus, we successfully situated the SDGs in theological education. This study has however also limitations and constraints: (1) Thus far our strategy has not been tested empirically though it was developed based on best practices we learned through our own work in development cooperation and thus used an inductive and empirically-based method to derive a governance strategy for e-learning from it. (2) Our specific governance for e-learning is constraint in the way that it is mainly usable for African contexts. The same e-learning governance could not necessarily be used in, e.g. in China as these societies are not community-based societies like in Africa and more individualistic. Hence the task for future work on OIBDD is to extent our research to other societies than just African societies and finally to empirically test our strategy, to implement our app and to documents the progresses on teaching the SDGs.

Acknowledgements We would like to thank Mette and Alex Bjergbæk Klausen from *Relay Trust* for helpful comments and support on earlier drafts of this paper. Judith Gottschalk would like to thank Marika Rothenberger from *Bread for the World—Protestant Development Service* for her helpful input regarding this paper.

References

- Bada AO (2002) Local adaptation to global trends: a study of an IT-based organizational change program in a Nigerian bank. *Inf Soc* 18(2):77–86
- Beier C (2009) Ownership: a guiding principle in development. In: Beyond Accra: Practical implications of ownership and accountability in national development strategies. 22–24 April 2009, London. Conference Papers. <http://www.lse.ac.uk/internationalDevelopment/pdf/beyondAccraPapers.pdf>. Last Accessed 1 Sept 2016, pp 22–27
- Braa J, Hedberg C (2002) The struggle for district-based health information systems in South Africa. *Inf Soc* 18(2):113–127
- Ciborra CU (2003) Unveiling e-government and development: Governing at a distance in the new war. Working Paper No. 126, Information Systems and Innovation Group, LSE, London
- Danner H (2012) Das Ende der Arroganz: Afrika und der Westen - ihre Unterschied verstehen. Brandes & Apsel, Frankfurt am Main
- Fogg BJ (2003) Persuasive technology. using computers to change what we think and do. Morgan Kaufmann, San Francisco
- Gottschalk (Submitted) Sustainable corpus-driven computer-assisted language learning in Madagascar
- Gottschalk J, Winther-Nielsen N (2013) Persuasive skill development: on computational surveillance strategies for modeling learning statistics with PLOT Learner. In: Behringer R, Sinclair G (eds) IWEPLET 2013 Proceedings <http://www.lulu.com/shop/reinhold-behringerand-georgina-sinclair/iweplet-2013-proceedings/paperback/product-21189131.html>. Last Accessed 14 Jan 2014, pp 109–116
- Griggs D (2013) Sustainable development goals for people and planet. *Nature* 495:305–307
- Hayward S (2012) Religion and peace building reflections on current challenges and future prospects. In: United States Institute of Peace Special Report
- Karam A (2010) Concluding thoughts on religion and the United Nations: redesigning the culture of development. *CrossCurrents* 60(3):462–474

- Karam A (2015) Realizing the faith dividend: religion, gender, peace and security in Agenda 2030. Technical Report UNFPA. UNFPA, New York
- Laurillard D (2012) Teaching as a design science: building pedagogical patterns for learning and technology. Routledge, London
- Müller U (2009) Mind the gap! ownership in practice. In: Beyond Accra: Practical implications of ownership and accountability in national development strategies. 22–24 April 2009, London. Conference Papers. <http://www.lse.ac.uk/internationalDevelopment/pdf/beyondAccraPapers.pdf>. Accessed 1 Sept 2016, pp 5–15
- Mummert U (2009) Factors for successful development strategies: A pragmatic analysis. In: Beyond Accra: Practical implications of ownership and accountability in national development strategies. 22–24 April 2009, London. Conference Papers. <http://www.lse.ac.uk/internationalDevelopment/pdf/beyondAccraPapers.pdf>. Accessed 1 Sept 2016, pp 91–133
- Ngwenyama O, Andoh-Baidoo FK, Bollou F, Morawczynski O (2006) Is there a relationship between ICT, health, education and development? An empirical analysis of five West African countries from 1997–2003. *Electron J Inf Sys Developing Countries* 23(5):1–11
- North D (2006) There's more to add to BDD than evolving TDD. <https://dannorth.net/2006/06/04/theres-more-to-bdd-than-evolving-tdd/>. Accessed 14 Jan 2017
- Øhrstrøm P, Aagaard M, Moltsen L (2009) It might be Kairos. In: Oinas-Kukkonen H, Hasle P, Harjumaa M, Segerståhl K (eds) *Persuasive 2008: The Third International Conference on Persuasive Technology*, pp 94–97. University of Oulu, Oulu, Finland
- Oinas-Kukkonen H, Harjumaa M (2009) Persuasive systems design: Key issues, process model, and system features. *Commun Assoc Inf Sys* 24(28):485–500
- Thompson M, Walsham G (2010) ICT research in Africa: need for a strategic developmental focus. *Inf Tech Dev* 16(2):112–127
- UNESCO (2005) *Towards knowledge societies. UNESCO World Report*. UNESCO Publishing, Paris
- Winther-Nielsen N (2013a) PLOTLearner as persuasive technology: Tool, simulation and virtual world for language learning. In: Behringer R, Sinclair G (eds) *IWEPLET 2013 Proceedings*. <http://www.lulu.com/shop/reinhold-behringerand-georgina-sinclair/iweplet-2013-proceedings/paperback/product-21189131.html>. Last Accessed 14 Jan 2014, pp 21–28
- Winther-Nielsen N (2013b) PLOTLearner for a corpus of the Hebrew Bible: The case for repurposing in language learning. In: Behringer R, Sinclair G (eds) *IWEPLET 2013 Proceedings*. <http://www.lulu.com/shop/reinhold-behringerand-georgina-sinclair/iweplet-2013-proceedings/paperback/product-21189131.html>. Last Accessed 14 Jan 2014, pp 53–60
- Winther-Nielsen N (2014) PLOTLearner's persuasive achievement: force, flow and context in technology for language learning from the Hebrew Bible. *HIPHIL Novum X*(2):78–94
- Winther-Nielsen N (Accepted) The corpus as tutor: data-driven persuasive language learning. *Digital Humanities Quarterly*

Implementing Sustainability in the Curriculum of
Universities

Approaches, Methods and Projects

Leal, W. (Ed.)

2018, XI, 330 p. 38 illus., 33 illus. in color., Hardcover

ISBN: 978-3-319-70280-3