

Pan-Commonwealth Forum, 9-12 September 2019, Edinburgh, Scotland.

Open Education in Kiribati: Stakeholder perception of the quality of e-Learning resources

Abstract

Over the last few decades, the world has witnessed a substantial and rapid growth in Open Education. The advancement in information and communication technology (ICT) has enhanced its implementation as more teachers and students can access learning from anywhere at any time. Even so, schools and teachers in Kiribati have not been a subject to any study as we know of. To fill this gap, we have conducted a baseline study by gathering data on a number of parameters that define the e-learning readiness at Kiribati Teachers College (KTC) and the Selected Secondary Schools (SSS) in Kiribati. Specifically, we were interested in investigating what type of prior digital and ICT skills that support teachers in Teaching and Learning, and what factors impede the effectiveness of e-Learning in ten-selected SSS and KTC. Parameters have also included information about the ICT infrastructure as well as teachers' attitude towards ICT and e-Learning classroom and personal use. Using open-ended survey questions based on the three aspects of e-Learning such as (i) mobile/computer and internet, (ii) use of ICT in the classroom and (iii) the use of ICT for teachers' learning. Results of the baseline study report on e-Learning readiness by analyzing responses of 155 teachers. The findings show that most of the surveyed teachers have fairly good access to internet to support online Teaching and Learning, but many of them also have cautionary views about the effectiveness of the e-learning due to the online infrastructure. These preliminary findings will guide us in conducting a follow-up study in October and November 2019 that plans to study comprehensively the perception of teachers concerning the effectiveness of e-Learning resources in Kiribati.

Keywords: Open Education, e-Learning, e-Learning resources, ICT, Stakeholder perception

Introduction

Kiribati consists of 33 islands scattered across 5.2 million square kilometers of ocean in the central Pacific. It has been a member of the Commonwealth since its independence in 1979. According to the 2015 census, Kiribati has a “total population of 110,136 people” (Ministry of Finance, 2016, p.31).

There are 307 teachers in Junior Secondary School and 420 teachers in Senior Secondary School. Around 40% of teachers are from the outer-islands and 60% from the main island. As part of the international community, Kiribati is committed to the sustainable development goals that serve as the backbone of its economic development, with such goals being translated into the Kiribati Development Plans and Education Sector Strategic Plan.

The scattered nature of the islands result in the lack of education resources to support quality education for teachers and students as well as the poor learning outcomes of students in all levels (Kiribati Education Improvement Program Phase one report). This situation is especially visible in Junior Secondary Schools and Senior Secondary Schools. The Ministry of Education, through the Curriculum Development Resource Center, is solely responsible for the production and sustainability of relevant resources for both teachers and students.

This is a key aspect why the current education system is very costly and difficult to sustain. The government, through the Ministry of Communication Information, Transport and Tourism (MITT), is aware of the importance of e-Learning resources to support education. This awareness is stipulated in its ICT policy where the policy plans to support curriculum development and to support the Ministry of Education to provide access to comprehensive, freely available sets of Open Education Resource (OER) (Ministry of Information, Communication and Transport, 2017).

The government has also established long-term plans in partnership with the World Bank and the Asian Development Bank to install appropriate ICT infrastructure to connect islands through internet marine cable (Kiribati Vision for 20 years 2016-2036, 2018).

The Kiribati Teachers College, the only institution for teacher education, is being cognizant that the 21st Century Teaching and Learning promotes innovations, creativeness as well as the exposure of teachers and students to advanced and high quality teaching and learning. However, factors impeding the success of e-Learning readiness along with its accessibility and usage are less understood, providing a rationale for the current research.

A Baseline study assessing the readiness for e-Learning

The Ministry of Education through the Kiribati Teachers College signed a contract in September 2017 with Commonwealth of Learning (COL) as part of its Teacher Future Programme. As part of the contract, a project was initiated to study the support that SSS teachers have on their professional developments of e-Learning. In particular, COL and KTC were interested in assessing ICT readiness of teachers from the ten SSS and lecturers from KTC. The purpose of the study was to gather data on a number of parameters that define the e-learning readiness at KTC and the selected secondary schools in Kiribati. These parameters include information about the ICT infrastructure as well as teachers’ attitude towards ICT and e-Learning classroom and personal use.

The research questions that guided the baseline study were:

- What are teachers’ prior digital and ICT skills that support them in Teaching and Learning?
- What are factors impede the effectiveness of e-Learning in SSS and KTC?

Survey questions focused on three aspects of e-Learning such as access to mobile/computer and internet, use of ICT in the classroom and use of ICT for teachers’ learning. Results suggest that SSS teachers and KTC lecturers have access to infrastructure such as internet connections, but their ICT usage that is not on par with international standards is believed to be underlying issues impeding the effectiveness of e-Learning.

Review of related literature

Understanding the Kiribati situation concerning the effectiveness of e-Learning readiness should be situated based on studies that report on educational systems that are comparable with Kiribati education as well as with educational systems that are more advanced. Previous studies in developed and developing countries demonstrate that different aspects of ICT and e-Learning were the focus of various research programs: (a) quality and quality assurance of e-Learning, (b) quality of online delivery, (c) mobile learning, (d) teacher training in ICT integrated pedagogies, (e) challenges and opportunities in e-learning in developing countries, (f) evaluation of the quality of

e-Learning materials, among others. Assessing e-Learning readiness in Kiribati needs to be based on various research topics that disseminate results of “ICT integration in education” (Raturi and Kedrayate, 2010, p. 5).

Literature on ICT put main issues of e-Learning from the viewpoint of quality and quality assurance (QA). Alexander and Golja (2007) report that student experience is an important factor in deriving quality in e-Learning systems. Jung (2011) examines the quality of e-Learning from the adult learners’ viewpoints in South Korea and proposes that the identification of seven dimensions in learners’ perception needs to be considered in order to further understand the nature of student experience when the students come from a non-traditional background. Kazaine (2017), on the other hand, focuses on the quality of e-Learning materials developed in Latvia and provides guidelines in assessing the quality in the format of a web-based tool that consists of a checklist. McLoughlin and Luca (2001) have examined the quality of online assessment in e-Learning in a course offered in an institution in Western Australia. They suggest that effective assessment tools need to be interactive so that learners can constantly participate in the learning activities. Although stemming from different perspectives, all of these studies emphasize that quality and quality assurance is a key to have a successful e-Learning program.

The current study is designed to understand the perception of e-Learning by educational stakeholders, focusing on the instructors. Even so, we will need to understand how learners’ view can be understood when it comes to new learning program such as e-Learning. Jung (2011) is one of such study. After closely examining learners’ viewpoints on the quality of e-Learning, she identifies seven dimensions that influence participants’ perception: (i) the quality of e-Learning, including Interaction, (ii) Staff Support, (iii) Institutional QA Mechanism, (iv) Institutional Credibility, (v) Learner Support, (vi) Information and Publicity, and (vii) Learning Tasks. While learners in the study agree that all of the seven dimension are significant in measuring the quality of e-Learning, they put an emphasis on Institutional QA Mechanism and Institutional Credibility for gauging the e-Learning quality. Interestingly, the learners in Jung’s study treat course content and structure as an unimportant dimension in evaluating e-Learning quality, possibly due to the fact that these learners were all non-traditional students.

E-Learning in developing countries, especially in the South Pacific region, is still in its infancy. Thus, only few research is available for reviewing the effectiveness of e-Learning readiness in this region. In the Fijian context, Narayan and Sharma (2017) have examined the usage of mobile learning in Higher Education Institutions. Their study identifies 12 factors that impede the usage of mobile as a learning tool in Higher Education Institutions in small island states in the South Pacific region, and propose a conceptual framework for promoting mobile learning in the region. In a study on Samoa that empirically looks at the impact of technology-enabled learning, Chan Mow (2019, p. 38) evaluates the perception of the learners about the effectiveness of Blended-Learning environment this type of learning using the following dimensions: (i) digital skills, (ii) infrastructure, and (iii) access, among others.

Both studies are situated in south pacific countries and thus providing groundwork for the current study. Out of the factors discussed in Narayan and Sharma (2017, p. 50), the quality of e-Learning readiness in Kiribati can be gauged by detailing the types and role of e-Learning users, the ownership of mobile devices and the availability of support and training for e-Learning.

The underlying assumption in e-Learning is that stakeholders have reliable access to the internet, which this study recognizes as an important aspect in developing e-Learning readiness. In an earlier study by Rena (2008, p.9), the internet situation in tertiary education institutions in Africa was identified as an impeding factor for the development of e-Learning because only 3 percent of the Internet users at the time of the study were residents of Africa (Internet World Statistics, 2007, as cited in *ibid*, 2008). The major factors that block abilities of African universities to improve their ICT services were high cost for internet connectivity, poor local and regional infrastructure for internet access, and lack of ICT-skilled human resources (*ibid*, 2008). These obstacles to ICT improvement at African universities highlight that what these institutions and end-users have experienced in 2008. Interestingly our baseline study converge at some points with findings reported in Rena (2008).

Methodology

Research design.

This study used survey research methods. Questions were developed in connection with the following two key research questions:

- What are teachers’ prior digital and ICT skills that support them in Teaching and Learning?
- What are factors impede the effectiveness of e-Learning in SSS and KTC?

The survey questions were distributed in paper to target participants so that they can complete them in a duration of 40 days. Participants were given ample time due to the geographical isolation and lack of frequent transportation between outer islands and the main island, South Tarawa.

Responses were returned from 115 teachers and lecturers. The gender ratio was approximately balanced with 52 male teachers (45% of the sample) and 63 female teachers (55% of the sample). More SSS teachers were recruited for this study: 99 Senior Secondary School teachers (23% of all SSS teachers in Kiribati) and 16 KTC lecturers (70% of all staff members at KTC).

The data were analysed by compiling and tallying the answers according to the different aspects of the survey questions. For instance, access to device, we simply counted and categorized the number of teachers and lecturers based on these choices: (i) access to computers, (ii) access to mobile, (iii) access to computers with internet and (iv) access to mobile with internet. Participants were allowed to select multiple responses for a given question and to provide written feedback when they had additional comments.

Results and Discussion

This baseline study was conducted to examine the e-Learning readiness of KTC lecturers and teachers in selected secondary schools in Kiribati. In collaboration with COL, KTC researchers assessed the ICT infrastructure and 115 teachers' attitudes towards ICT and e-Learning.

The baseline study shows that respondents have access to mobile devices such as computers and mobile phones with internet access (figure 1a), suggesting that these devices can be used to enable e-Learning. Specifically, 67 (58%) of the surveyed teachers have their own computers with 47 of them having internet access on their computers. The occupancy of mobile phones were 58 % (68 respondents). Only 55 respondents reported the use of internet suggesting that owning a device and having access to internet do not directly translate into an active use of internet as shown in figure 1b. Among the responses, most of the internet use was limited to work or learning instead of personal use.

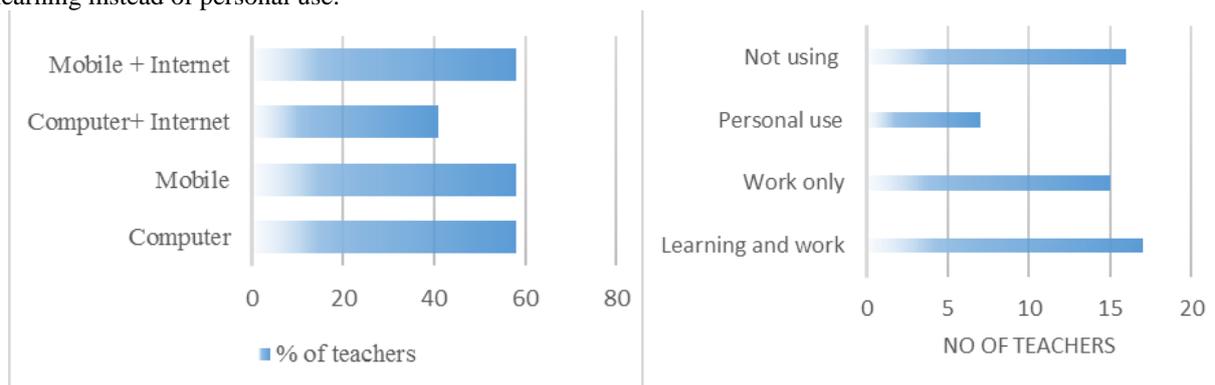


Figure 1a. Access to Devices and Internet

Figure 1b. The use of internet

The survey further unveils the usage of the internet by those who have access is often related to the search for information, communication, social media, and for educational purposes. Information was done mostly using Google (50 out of 74 teachers). Other purposes include 24 for communication such as email correspondences, 19 for social media, and 6 to access KTC and USP Moodle.

Furthermore, the study has found that the use of ICT in the classroom by teachers varies. Half of the participants (58 respondents) validate that they use ICT in their classroom for numerous purposes ranging from lesson preparation, presentation to learners, and searching for class-related information. Finally, the participating teachers also indicate that they use ICT for their own professional development (PD). For this purpose, 63 out of 115 respondents state that they have participated in some PD sessions.

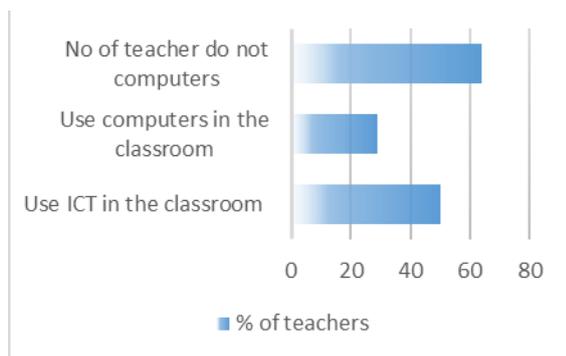


Figure 2. Use of ICT computer in a classroom

The baseline study that we have reported suggests an interesting trend among Kiribati teachers and lecturers. They have access to internet-enabled devices that can potentially be judged as being highly prepared for e-Learning readiness, but the detailed usage of their devices implies that internet usage itself is not as widespread amongst the respondents. These preliminary findings suggest that there is a need for an expansion of this baseline study.

Expanding the baseline study

This section will highlight how the expansion of the baseline study will be conducted. Complementing findings in the previous section, the newly proposed study will assess the quality of e-Learning resources based on responses from the stakeholders (teachers from Junior Secondary School and SSS, and KTC lecturers). The Ministry of Education already is concerned that teachers and students are not kept sufficiently abreast concerning technology and e-Learning resources. Results from a follow-up study will be able to pinpoint challenges that impede teachers and students with regard to e-Learning resources.

The e-Learning resources in the Kiribati context refer to *internet access, internet speed, teachers' support, course content, learning materials, learner support, and computer literacy*. Two research questions will guide the pursuit in our follow-up study.

1. How do the teachers perceive the quality and value of e-Learning resources in Kiribati?
2. What is the perceived impact of the e-Learning on teaching and learning at the junior and senior secondary school levels?

A concurrent mixed methods design will be employed to investigate the two research questions. In particular, we will combine different field methods such as Focus Group Discussion (FGD), and an interview, with a traditional survey questionnaire to collect the data, which will allow us to triangulate results based on quantitative as well as qualitative data.

In the follow-up study, participants from SSS and KCT may be overlapping with the baseline study because we apply a random sampling technique, but a new group of participants from Junior Secondary Schools will be recruited to expand the participant pool. Prior to responding to our surveys and interviews, all prospective participants will be asked to express their consents and they will be briefed that they have rights to withdraw their participation without any negative consequences.

Conclusion

In this paper, we have highlighted findings from our baseline study on e-Learning readiness that provided us with a headstart for a large-scale study concerning e-Learning resources in Kiribati. Results from the baseline study have indicated that teachers do have access to e-Learning devices, but the equipment is often underused by the stakeholders of e-Learning. In our proposed follow-up study that will be conducted in October and November 2019, we will identify issues concerning e-Learning resources that would in turn enable policy makers in the Ministry of Education and other government agencies to allocate limited resources that could foster and enhance e-Learning in Kiribati. Moreover, we hope that our baseline study and a future study will allow KTC to ensure the development of high quality e-Learning resources for its pre-service and in-service teachers, hence providing quality learning for the children of Kiribati.

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