



OER Mainstreaming in Cameroon: Perceptions and Barriers

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Abstract

The government of Cameroon has been increasingly pre-occupied with the quality of learning outcomes and the lack of learning resources at all levels of the education system. Research on similar educational systems in Sub-Saharan Africa and beyond indicate that Ministries of Education are exploring the potential of open educational resources (OER) to cut down the high cost of textbooks and enhance the availability of quality learning materials in classrooms. To explore possibilities of mainstreaming OER under the Ministries of Basic and Secondary Education in Cameroon, a quantitative research design approach was used to survey n=393 Regional Pedagogic Supervisors from the 10 Regions of the country. The outcome of this study presents the factors shaping the perspectives of Regional Pedagogic Supervisors in terms of perceptions and barriers to using OER. The novelty of this approach is the application of a proven model for technology acceptance testing in the context of OER. Based on the findings, three major recommendations for mainstreaming OER in Cameroon with potential impact on lowering textbook costs and increasing learning outcomes were formulated.

Keywords: open educational resources, OER, Cameroon, textbook costs, learning outcomes, OER mainstreaming

Introduction

In recent years, the government of Cameroon has been increasingly pre-occupied with the quality of learning outcomes at all levels of the educational system. In 2018, the World Bank Cameroon Education Reform Support Project revealed that the country would not achieve universal primary education at 100% by 2020 as outlined in the Education and Training Sector Strategy Paper for 2013-2020 (Republic of Cameroon, 2013). There were two reasons advanced for this as follows: (a) that the Primary Completion Rate (PCR) scorecard witnessed only a two percentage point increase from 74.2% to 76.3% over a period of two years – 2013 to 2015; and (b) that assessment of learning achievement in the domain of reading and mathematics for Class 5 learners show a decrease of about 4 points in the average mathematics score and 12 points in the average Reading score between 1996 and 2005 (World Bank, 2016). These findings were further confirmed by the results of a 2017 study on learning achievement conducted by the Government of Cameroon. The findings revealed that more than 50% of learners were not able to demonstrate the expected competencies in Reading and Mathematics (Ministry of Basic Education, 2018).

Besides the lack of adaptable instructional strategies for literacy and numeracy, the lack of learning resources has also been identified to adversely affect learning outcomes across the school curriculum (UNESCO Institute for Statistics, 2010; UNESCO, 2017a; World Bank, 2018). Textbooks are exceedingly relevant resources that can enhance learning outcomes, promote inclusiveness

in education and promote lifelong learning especially in large class sizes where, very often, there is insufficient instructional time. Instructional resources are strategic in the enhancement of quality learning outcomes prompting governments to allocate sufficient funds for textbooks (Global Education Monitoring Report, 2016). The World Bank (2018, p.15) observed that between the period 2010 and 2016, Cameroon “allocated on average, 14.2% of her public investment budget to education which is more than 5% below the GPE benchmark of 20% to the education sector”. Similarly, less than 1% of this education budget was allocated for the purchase of pedagogic materials in 2017 (Republic of Cameroon, 2017a; 2017b).

A comparative study from 15 African countries revealed that state average investment budget on instructional materials stood at 6.6% in the primary school sector and 5% in the secondary school sector (UNESCO Institute for Statistics, 2011). Consequently, the Cameroon World Bank (2018) commented that:

the textbooks-to-learner ratio in Cameroon is among the lowest in the world, with an average of one textbook per 12 learners, falling to one textbook per 30 students in some regions. The primary causes of low textbook-to-learner ratios are (a) the high cost of textbooks (incurred mainly by families), (b) the limited availability of textbooks outside the major cities, and (c) the poor quality of textbooks (in terms of content and materials). These challenges are largely associated with weaknesses in the national textbook policy framework and weak overall management of the textbook development and supply chain (p. 15).

Open Educational Resources

From a global perspective, Open Educational Resources (OER) are defined as instructional resources that include books, specialised software and many other materials shared under an open intellectual property license (Ozdemir & Bonk, 2017; Hilton, Wiley, Stein, & Johnson, 2010; Chen & Panda, 2013). The Ljubljana Action Plan perceives OER as a means:

Toward the realization of inclusive Knowledge Societies, Open Educational Resources (OER) support quality education that is equitable, inclusive, open and participatory. OER are teaching, learning and research materials in any medium - digital or otherwise - that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the framework of intellectual property rights as defined by relevant international conventions to respect the authorship of work. OER are a strategic opportunity to improve knowledge sharing, capacity building and universal access to quality learning and teaching resources (UNESCO, 2017b, p. 1).

The concept of “Open” in the definition should not be perceived as a broadly loose resource per se but rather conceived as a water tap regulator with varying degrees of “openness” (Hilton et al., 2010). Based on this perception, the manipulation of any OER by a user is guided by the Creative Commons Licences affixed on the resources (Johnson, Adams Becker, Estrada & Freeman, 2014). The degree of manipulation is characterised by the 5Rs framework - Retain, Reuse, Revise, Remix, and Redistribute (Wiley, 2015).

In general, OER are found online in freely accessible repositories. Due to the vibrant nature of the creative commons community, committed members develop and share OER through web-based repositories on a regular basis (Willems & Bossu, 2012). The open community perceives openness and sharing as its key values, which as part of an institutional strategy could enhance quality learning outcomes and outreach (Panda & Santosh, 2017). Furthermore, the act of sharing free of charge provides learners access to high quality education materials enhancing their learning outcomes.

These initiatives are greatly supported by UNESCO and the Commonwealth of Learning (COL) who believe that “universal access to high quality education is key to peace building, sustainable social and economic development, and intercultural dialogue” (Ozdemir & Bonk, 2017, p. 1).

Ministries of Education around the world are progressively adopting OER as a means of enhancing learning outcomes and cutting down high cost of instructional materials (Nkwenti, 2017; Abeywardena, Uys & Fifita, 2019; Karunanayaka, 2016; Tladi, 2016). In addition to this commitment, many initiatives have been undertaken (Wang & Zhao, 2011; Fiji Ministry of Education, Heritage and Arts, 2016). Many studies have also been conducted on best practices for diffusion and adoption of OER in developing countries (Conrad, Mackintosh, McGreal, Murphy & Witthaus, 2013; McGreal, Kinuthia & Marshall, 2013; Wolfenden, Buckler & Keraro, 2012). A study designed to investigate the influential factors in the use of OER by adult learners in Korea concluded that both perceived ease of use and perceived usefulness significantly influenced their behavioural intention (Kim, Lee, Lee & Shon, 2015). Similarly, a study conducted to assess teaching experience on faculty members’ perceptions about the attributes of OER concluded that a majority of the staff were willing to share their educational resources. However, they lack the experience to develop and use OER (Zhang & Li, 2017; Phalachandra & Abeywardena, 2016). Another study investigating staff skills in using OER concluded that they were willing to engage in OER even though they had limited awareness, skills and competencies in the creation, integration and use of OER (Muganda, Samzugui & Mallinson, 2016). On the other hand, a study carried out on teachers’ awareness of copyright issues reported that they had difficulties in interpreting them and this hindered them from using OER efficiently (Veletsianos, 2015). The need for teachers to be empowered with OER skills was found as an enabler to their adoption and use of the resources in the study by Pantò and Comas-Quinn (2013). Regarding teachers’ attitudes towards sharing of knowledge and learning resources, some researchers concluded that they were very positive (Rolfe, 2012; Panda & Santosh, 2017). Further, the researchers perceived the sharing of their resources as a means of enhancing their reputation and the visibility of their institution.

Commonwealth of Learning

COL is an intergovernmental organization created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources, and technologies. Hosted by the Government of Canada and headquartered in Burnaby, British Columbia, Canada, COL is the world’s only intergovernmental organization solely concerned with the promotion and development of distance education and open learning. COL actively helps developing nations improve access to quality education and training (Commonwealth of Learning, 2018).

Owing to the challenges of textbook provision faced by Cameroon’s Ministries of Education, the adoption and implementation of OER in basic and secondary education sectors is highly imperative. Responding to the need, COL funded a nationwide sensitisation and advocacy campaign in 2016 (Figure 1) targeting Pedagogic Supervisors of the Ministries of Basic and Secondary Education. These were targeted because they regularly interact with teachers, supervising the quality of teaching and learning in their classrooms (Abeywardena, Karunanayaka, Nkwenti, & Tladi, 2018). As key actors in the educational system, they were assumed to be in the best position to contribute in the mainstreaming of OER into the instructional process in Cameroon. However, the effective adoption or acceptance of innovative practices in education has always met with some resistance on the part of the targeted population who are not always disposed to embrace change (Oppenheimer, 2003; Kiraz & Ozdemir, 2006). With this challenge in mind, we identified the need to investigate their perception and acceptance of OER within the instructional processes following COL’s intervention in 2016.

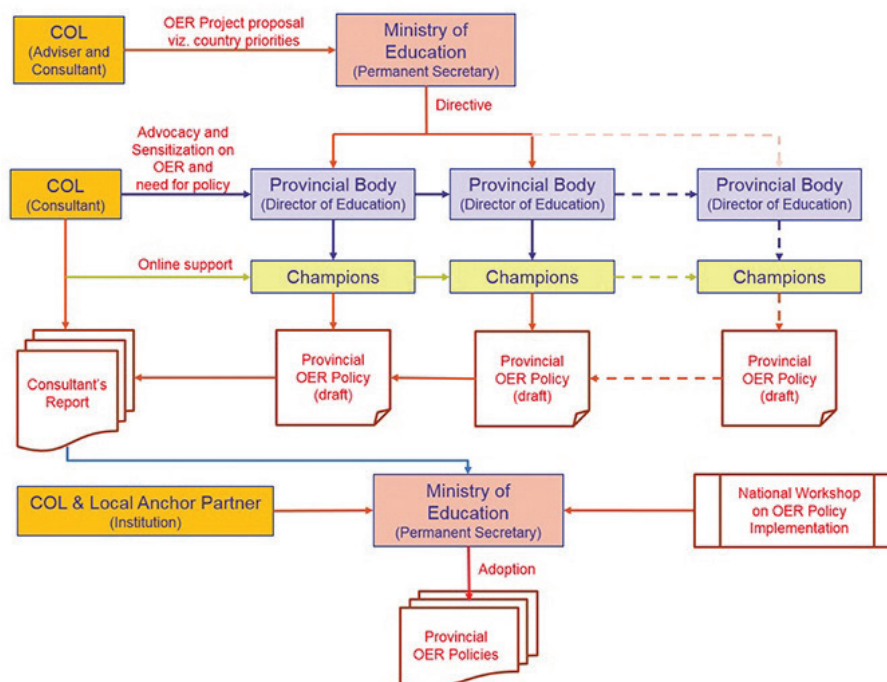


Figure 1: Collaborative approach to provincial/regional OER policy/guidelines development.

Adapted from Abeywardena et al. (2018). Licensed under CC-BY 4.0 International license.

This study contributes in identifying the perceived usefulness of OER; perceived ease of use of OER; barriers to the use of OER; attitudes towards OER; and behavioural intention to use OER within the context of Basic and Secondary Education in Cameroon. The novelty of our approach is the application of a proven model for technology acceptance testing to the context of OER. Based on our findings, we make three major recommendations for mainstreaming OER in Cameroon with potential impact on lowering textbook costs and increasing learning outcomes.

Methodology

The Framework

The introduction of a new technology into the instructional process may sometimes encounter great resistance from beneficiaries (Kamel, 2004). The resistance may stem from stakeholders who perceive the use of the tool as being too demanding in terms of cost, time and energy (McIntosh, 2010). In order to map the factors that affect users' perception and use of technology in the teaching and learning process, the Technology Acceptance Model (TAM) was developed (Davis, Bagozzi, & Warshaw, 1986) as shown in Figure 2. TAM predicts the acceptability of a tool and identifies the modifications that must be made to the system in order to make it acceptable by users. From this standpoint, TAM further suggests that the acceptability of a technology is determined by two main factors which are (a) perceived usefulness; and (b) perceived ease of use. Since the release of TAM in 1989, many researchers have used it to investigate the acceptance and innovative use of technology in different fields (Kim et al., 2015; Zhang & Li, 2017; Muganda et al., 2016).

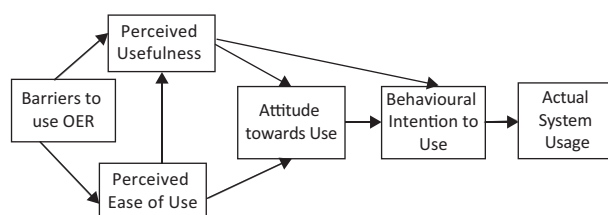


Figure 2: Technology Acceptance Model. Adapted from David et al. (1989).

Adopting TAM in our work, we determine an individual's attitude towards the adoption of OER in instructional processes using (a) perceived usefulness; and (b) perceived ease of use. Perceived usefulness is the degree to which an individual believes that using a particular OER would enhance his or her productivity in instructional processes. The perceived ease of use refers to the degree in which an individual believes that using a particular OER would be free of effort. However, perceived usefulness and perceived ease of use can be influenced by external factors regarded in this study as barriers to use OER. A researcher opines that barriers could include an individual's skill needs and situational factors that can indirectly influence their usage of a new technology in instructional processes (Röcker, 2009). According to Muganda et al. (2016), these variables include (a) difficulties in finding relevant OER; (b) limited or no Internet connection to access OER; (c) lack of computer skills to search for OER; (d) lack of knowledge of the different licenses; and (e) lack of support from the ministry to use OER. On the other hand, an individual attitude is hypothesized to influence the behavioural intention, which, in turn, determines the actual use of OER.

Research design

This study adopts the quantitative research design approach to survey Regional Pedagogic Supervisors' views on factors that will shape perspectives to mainstream open educational resources in schools. The study involved a sample of Regional Pedagogic Supervisors from the Regional Delegations of Basic and Secondary Education. The Simple Random Sampling Technique (Amin, 2005) was used to select a total of $n=393$ pedagogic supervisors from the 10 Regions of Cameroon to participate in the study.

The instruments consist of questionnaires designed to collect data on participants' demographic information, external factors, perceived usefulness, perceived ease of use, attitude towards the use of OER, and behavioural intention to use OER. The questionnaires were framed based on the TAM. The research instrument consists of two main sections. The first section incorporates a nominal scale to identify participants' demographic information in two items, notably gender and age range. The second section uses a 5-point Likert scale ranging from 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree to investigate participants' opinion on the conceptual framework for the study. To ascertain the reliability of the instruments, the questionnaire was pre-tested with those not taking part in the study. Further, a reliability analysis was conducted to estimate a reasonable level of reliability and internal consistency using Cronbach's Alpha test. Cronbach's Alpha recommends that scales should exceed cut-off value of 0.70 (Schmitt, 1996). Based on this scale, each computed test item was above 0.70 and the TAM construction appears to have a good degree of reliability as shown in Table 2.

The survey instruments were administered to the participants after a one-year nationwide workshop conducted to sensitise the regional pedagogic supervisors on the potentials of OER as a sustainable strategy to cut down the high cost of textbooks for both teachers and learners while enhancing learning outcomes (Abeywardena et al., 2018).

Results

The data was coded and entered into SPSS for descriptive analysis. The participants' profiles and their Ministry of origin were analysed using frequency and percentage. Participants' perception of external factors, perceived ease of use, perceived usefulness, attitude and behavioural intention measured using a 5-point Likert Scale were analysed in terms of frequency counts, percentages, mean and standard deviation leading to interpretation based on the objective of this study.

At the end of the data collection process, the expected number of participants was not achieved. The targeted number of participants was $n=393$ but $n=322$ responded giving a response rate of 81.93%. Figure 3 indicates the number of participants per Ministerial Department. The disparity in the number of participants from each ministry is based on the fact that there are institutionally more Regional Pedagogic Supervisors in the Ministry of Secondary Education than in the Ministry of Basic Education.

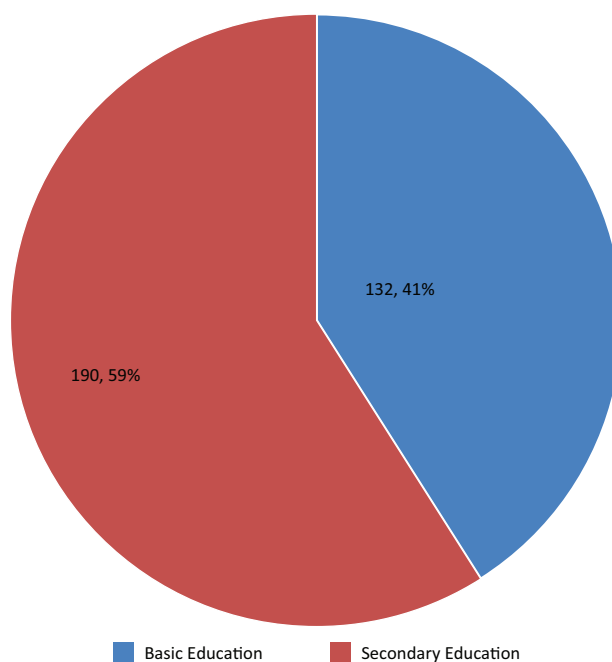


Figure 3: Number of Participants per Ministerial Department.

Table 1 indicates that a majority of the participants 193 (59.9%) were males while 129 (40.1%) were females. Of this number, 270 (83.9%) were more than 41 years old while 35 (10.9%) were in their mid-thirties. On the other hand, a majority of the participants had worked for more than 16 years with 68 (21.1%) having worked for more than 26 years. This data indicates that they have a firm mastery of pedagogic practices and certainly know much about teachers' needs.

Table 1: Participants' Profile in terms of Gender, Age Range and Teaching Experience

Participants in Terms of Sex				
Male		Female		Total
193 (59.9%)		129 (40.1%)		322(100%)
Age Range				
25–30 Years	31-35Years	36 - 40 Years	41+ Years	
5 (1.6%)	12 (3.7%)	35 (10.9%)	270 (83.9%)	
Teaching experience				
5-10years	11-15years	16 - 20years	21-25years	26+ Years
28(8.7%)	42(13.0%)	96(29.8%)	88(27.3%)	68(21.1%)

Table 2 shows participants' perceived usefulness of OER in the enhancement of learning outcomes. The various responses indicate that a majority of the participants perceive OER as very useful in various instructional delivery processes. The Standard Deviation (STD) indicates that most of the responses of the participants were clustered around the mean. This indicates that participants in this study perceive OER as very useful in the school curriculum.

Table 2: Perceived Usefulness of OER

Test items	SD	D	N	A	SA	N	Mean	STD
OER can accommodate diverse learners' needs	12 (3.7%)	7 (2.2%)	32 (9.9%)	154 (47.8%)	117 (36.3%)	322	4.14	1.04
OER can increase learners satisfaction with the learning experience	9 (2.8%)	13 (4.0%)	33 (10.2%)	157 (48.8%)	110 (34.2%)	322	4.22	1.05
OER can increase learners' engagement with lesson content	13 (4.1%)	4 (1.2%)	45 (14.0%)	176 (54.7%)	84 (26.1%)	322	4.17	1.08
OER can increase learners' participation in class discussions	9 (2.8%)	5 (1.6%)	47 (14.6%)	162 (50.3%)	99 (30.7%)	322	4.17	.99
OER can lead to improved learners' grades	11 (3.4%)	8 (2.5%)	46 (14.3%)	134 (41.6%)	122 (37.9%)	322	4.26	1.11
OER can develop learners' independence and self-reliance	8 (2.5%)	16 (5.0%)	49 (15.2%)	136 (42.2%)	113 (35.1%)	322	4.14	1.07
OER can increase collaboration and/or peer-support among learners	8 (2.5%)	11 (3.4%)	62 (19.3%)	160 (49.7%)	81 (25.2%)	322	3.99	.97
OER can increase learners' enthusiasm for future study	9 (2.8%)	9 (2.8%)	48 (14.9%)	163 (50.6%)	93 (28.9%)	322	4.07	.97
OER can build learners' confidence	12 (3.7%)	14 (4.3%)	40 (12.4%)	176 (54.7%)	80 (24.8%)	322	3.97	.99

Note: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA)

Table 3 is the summary of participants' perceived ease of use of OER. This data indicates that a majority of the participant who have a close relationship with their constituent teachers can encourage them to use OER to support instruction in their classrooms. From the different responses in this construct, it is obvious that a majority of participants see many challenges in the effective use of OER. The variation in the mean and standard deviation of each statement indicates that the participants' responses vary. However, the standard variation is clustered around the mean scores.

Table 3: Perceived Ease of Use of OER

Test items	SD	D	N	A	SA	N	Mean	STD
I have requisite ICT Skills to use OER	27 (8.4%)	122 (37.9%)	90 (28.0%)	32 (10.0%)	51 (15.8%)	322	3.58	1.36
It is easy for me to search OER online	21 (6.6%)	131 (40.7%)	60 (18.6%)	33 (10.2%)	77 (23.9%)	322	3.88	2.08
It is easy to evaluate the usefulness (value and quality) of OER	23 (7.1%)	128 (39.8%)	92 (28.6%)	30 (9.3%)	49 (15.2%)	322	3.71	1.36
It is to adapt (remix) different OER	33 (10.2%)	110 (34.2%)	105 (32.6%)	35 (10.9%)	39 (12.1%)	322	3.54	1.46
I can interpret the different licenses of OER	69 (21.4%)	57 (17.7%)	138 (42.9%)	29 (9.0%)	29 (9.1%)	322	3.09	1.26
It is easy to implement different Copyright licenses	38 (11.8%)	61 (18.9%)	147 (45.7%)	59 (18.3%)	17 (5.3%)	322	3.03	1.32
It is easy to encourage teachers to use OER in their lessons	22 (6.8%)	53 (16.5%)	30 (9.3%)	105 (32.6%)	112 (34.8%)	322	3.28	1.16

Note: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA).

Table 4 shows participants' attitudes towards OER. A greater majority of participants agreed with the statements related to their attitude towards OER. This indicates that participants do not have a negative attitude towards OER despite the perceived limitations expressed in the perceived ease of use construct. However, some of them were neutral and a few others disagreed with the statements.

Table 4: Attitudes towards OER

Test items	SD	D	N	A	SA	N	Mean	STD
Sharing of educational resources improves my professional respect	9 (2.8%)	9 (2.8%)	58 (18.0%)	163 (50.6%)	83 (25.3%)	322	4.01	.97
It gives me pleasure if someone adopts/ adapts my educational resources	6 (1.8%)	13 (4.0%)	70 (21.7%)	159 (49.4%)	74 (23.0%)	322	3.97	.98

table continues next page

Table 4: Continued

Test items	SD	D	N	A	SA	N	Mean	STD
Sharing helps me to get feedback	7 (2.1%)	3 (0.9%)	84 (26.1%)	160 (49.7%)	68 (21.1%)	322	3.96	.95
Sharing enhances my personal and organizational reputation	11 (3.4%)	7 (2.2%)	82 (25.5%)	143 (44.4%)	79 (24.5%)	322	4.00	1.08
Sharing of educational resources increases my profile amongst peers and others	13 (4.1%)	11 (3.4%)	69 (21.4%)	161 (50.0%)	68 (21.1%)	322	3.97	1.10
OER increases my network and sphere of influence	12 (3.8%)	11 (3.4%)	90 (28.0%)	148 (46.0%)	61 (18.9%)	322	3.85	1.08
As a pedagogic supervisor, it is my responsibility to share all educational resources created by me	7 (2.2%)	8 (2.5%)	50 (15.5%)	125 (38.8%)	132 (41.0%)	322	4.18	.96

Note: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA).

Table 5 shows participants' behavioural intention towards OER. A greater majority of participants agreed to the statements related to their behavioural intention towards OER. These responses indicate that after the participants were sensitised on the importance of OER and how it can be used to enhance learning outcomes, they became interested despite the lack of requisite skills to use the resources.

Table 5: Behavioural Intention

Test items	SD	D	N	A	SAç	N	Mean	STD
I intend to use OER to enhance my knowledge	7 (2.8%)	15 (4.7%)	69 (21.4%)	157 (48.8%)	72 (22.4%)	322	3.93	1.03
I intend to sensitise teachers on the need to explore OER in teaching and learning	7 (2.1%)	7 (2.2%)	49 (15.2%)	162 (50.3%)	97 (30.1%)	322	4.11	.93
In intend to use OER to support teacher professional development	9 (2.8%)	15 (4.7%)	63 (19.6%)	163 (50.6%)	72 (22.4%)	322	3.97	1.05
I intend to support the Ministry to implement OER policy	10 (3.1%)	12 (3.7%)	74 (23.0%)	147 (45.7%)	79 (24.5%)	322	4.02	1.12

Note: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA).

Table 6 indicates participants perceived barriers to the adoption of OER. The findings of this construct indicate that, apart from one of the test items, the participants see the rest as barriers for the effective adoption of OER. The mean and standard deviation varied thus indicating the variability of participants' responses.

Table 6: Perceived barriers to the adoption of OER

Test items	SD	D	N	A	SA	N	Mean	STD
Difficulties finding relevant OER is barrier	44 (13.7%)	35 (10.9%)	102 (31.7%)	70 (21.7%)	71 (22.0%)	322	3.18	1.54
No time to search for OER is barrier	57 (17.7%)	83 (25.8%)	104 (32.3%)	62 (19.3%)	16 (5.0%)	322	2.78	1.44
No internet connection to access OER is a barrier	65 (20.2%)	34 (10.6%)	75 (17.1%)	71 (22.5%)	77 (23.9%)	322	3.08	2.19
lack of computer skills to search for OER is a barrier	50 (15.5%)	41 (12.8%)	68 (21.1%)	81 (25.2%)	82 (25.5%)	322	2.73	1.60
lack of skills to adapt different OER is a barrier	52 (16.1%)	25 (7.8%)	77 (23.9%)	89 (27.6%)	79 (24.5%)	322	2.96	1.50
Lack of skills to interpret the different OER licenses is barrier to me	36 (11.2%)	35 (10.9%)	131 (40.7%)	61 (18.9%)	59 (18.3%)	322	3.12	1.49

Note: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly Agree (SA).

Discussion

Based on Muganda et al. (2016) and Davis et al. (1989) framework, this study measured participants' acceptance and use of OER in five constructs namely: (a) perceived usefulness of OER; (b) perceived ease of use of OER; (c) barriers to the use of OER; (d) attitudes towards OER; and (e) behavioural intention to use OER.

Perceived Usefulness

The findings revealed that a majority of the participants perceive OER as very strategic in accommodating learners' diverse needs, engagement, satisfaction, grade scores and self-reliance. Besides perceiving the benefits of OER on the side of the learners, the participants also see it as a pathway for peer collaboration and as a means to improve their productivity. These findings corroborate with other studies which argue that beneficiaries of a new technology must see its usefulness before they can buy-in (Kim et al., 2015; Zhang & Li, 2017; Muganda et al., 2016). Similarly, TAM postulates that the success of an innovation begins with the targeted population perceiving the usefulness of the innovation in their routine practices. Perceiving OER as useful in accomplishing their job-description is a step forward in the acceptance of the resources. The few participants who disagreed or remained neutral could eventually make a move in the right direction if they see their colleagues using the resources.

Perceived Ease of Use

The major finding related to perceived ease of use indicated that majority of the participants disagreed as can be seen in the mean score and standard deviation of each test item (Table 4). Ease of use is one of the determinant factors when it comes to motivating a target group to accept innovation. Once they perceive it as complicated to implement, they can easily reject (Kim et al., 2015; Zhang & Li, 2017). Therefore, the findings in this construct are an indication that participants need further training to be able to perform the tasks associated with the use of OER. The skills to be developed here ranges from the ability to use ICT skills to search for relevant resources online; evaluate, adapt, interpret licences; and be able to encourage supervisee teachers to use the resources. Perceiving the use of OER as difficult could adversely affect the use of the resources.

Barriers

The barriers included difficulties in finding relevant OER; lack of computer skills to search for OER; lack of skills to adapt different OER; and lack of skills to interpret the different OER licenses. If teachers do not have requisite skills to do all that which is required to use OER, they tend to reject it (Pantò & Comas-Quinn, 2013). In order to ensure that they adopt and use the resources; there is a need for a capacity building programme to empower them with requisite skills.

Attitudes

Seeing its benefits in instructional process, most agreed that sharing OER improves their professional respect; make them feel proud if someone is using their resources; helps them get feedback; enhance their personal and professional reputation; increase their network; and sphere of influence. Attitude is paramount in the acceptance of any innovation (Rolfe, 2012; Panda & Santosh, 2017). TAM upholds that the attitude of beneficiaries of any innovative technology is influenced by either perceived usefulness and/or perceived ease of use. On the other hand, some researchers postulate that once the target population has a positive attitude towards the innovation the probability of succeeding is high. Based on these assertions the positive attitude of majority of the participants is an indication that they will use OER if they have the requisite skills.

Behavioural Intention

A majority of the participants are disposed to using OER. Attitude is the key determinant of behavioural intention, and once the beneficiaries are positive about the new technology, their chances of using it is high. The participants of this study intend to use OER to enhance their knowledge; sensitize supervisee teachers on the need to explore OER in teaching and learning; and use OER to support teacher professional development. These findings are in line with the work of other researchers who also reported that once educators' attitudes are positive towards an innovation, their behaviour intention is also positive (Kim et al., 2015; Zhang & Li, 2017; Muganda et al., 2016).

Conclusion

The use of OER in Cameroon's educational system is still in an early stage. Other educational systems within Sub Sahara Africa are already exploring the potential of OER to cut down the high cost of textbooks and increase access to quality learning materials. While probing Regional Pedagogic Supervisors for both Basic and Secondary Education in Cameroon, this study explores the perceived

usefulness of OER; perceived ease of use of OER; barriers to the use of OER; attitudes towards OER; and behavioural intention to use OER. Based on the findings, it is recommended that (a) the stakeholders in the respective Ministries of Education take necessary measures to empower the supervisors with requisite skills – build capacity on how to search for OER, identify what is relevant, interpret the different OER licenses, adapt the resources to suit specific needs and use them for instructional purposes. This should be a key focus in future research work; (b) the Ministries should accelerate plans to connect schools to the internet so that teachers can make maximum use of the large volumes of resources available online; Thus far, the best strategy to distribute OER in a cost effective manner is through the internet. Developing the infrastructure will not only serve the purpose of distributing resources but will also assist teachers and learners to enhance learning outcomes; and (c) validation and implementation of the policy documents created during the nationwide advocacy and sensitization campaign conducted in 2016 to accelerate the use of OER in schools under the Ministries of Basic and Secondary Education. The availability of a policy document will foster the quick take-off of OER since it clearly defines the role of stakeholders.

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