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Open Praxis welcomes contributions which demonstrate creative and innovative research, and which highlight challenges, lessons and achievements in the practice of distance and e-learning from all over the world.

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Introduction to vol. 13 issue 1 and brief report on Open Praxis data

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As in previous years (Gil-Jaurena, 2015, 2016, 2017, 2018, 2019, 2020), this first Open Praxis issue in 2021 presents a brief report on the Open Praxis progress since it was relaunched as a scientific peer reviewed open access journal in 2013, with a special focus on volume 12, published in 2020. Table 1 includes different data referred to the last 8 years: number of submissions, number of published papers; acceptance rates; number of authors, number of reviewers, etc.

As shown in table 1, a total of 96 authors (excluding the editor) participated in Open Praxis volume 12 in 2020, publishing 38 research papers, innovative practice papers and book reviews distributed in the 4 issues. The average number of authors per paper was 2.38, ranging from 1 to 16 authors in one of the published research papers.

These contributions reflect a geographical and institutional balance; the authors are based in all the continents: 8 Asian countries (China, India, Israel, Japan, Malaysia, Pakistan, Sri Lanka and Turkey), 3 North American countries (Canada, Mexico and USA), 5 European countries (Germany, The Netherlands, Portugal, Spain and United Kingdom), 4 African (Ghana, Nigeria, Tanzania and South Africa), and 3 in Oceania (Australia, Fiji and New Zealand).

The list of 62 reviewers who contributed to volume 12 in 2020 –and who also reflect a gender, geographical and institutional balance– is available in the Open Praxis website (https://openpraxis.org/index.php/OpenPraxis/about/displayMembership/11).

Following with the analysis of the international scope of the journal, a total of 32,412 users visited the Open Praxis website in 2020 (figure 1): 30.2% users were from the USA, followed by these countries in the “top ten”: Philippines (7.8%), India (6.7%), Canada (5.2%), United Kingdom (5.2%), South Africa (3.3%), Australia (2.7%), Pakistan (2.6%), Turkey (2.3%) and Malaysia (1.8%).

Figure 1: Location of visitors to Open Praxis website (January–December 2020)
Source: Google Analytics

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* Special papers: ICDE prizes 2013 and 2015, Open Education Consortium Global Conference selected papers 2014, 2015, 2016, 2017, 2018, 2019. They were subject to double-blind peer review by a minimum of two Reviewers.
Scientific impact, based on citations to *Open Praxis* in academic publications (journals, conference proceedings, books, etc.), has continued increasing since the relaunching of the journal in 2013 (figure 2). The *Open Praxis* h-index in March 2021 is 37 (source: Google Scholar).

Following this brief report on the *Open Praxis* data and evolution, we present an introduction to the first *Open Praxis* issue in volume 13 in 2021, that includes seven research papers and two innovative practice papers.

In the first article (*An Exploration of China-Africa Cooperation in Higher Education: Opportunities and Challenges in Open Distance Learning*), Xia Zhu and Gladson Chikwa, based in the United Kingdom, analyze the Sino-African cooperation in ODL, with a focus on teachers’ professional development. Using literature review and interviews as methodologies, the authors explore the historical relationship between China and Africa and identify achievements and challenges in different areas: political, economical, sociocultural, curricular, etc. The reflections raise relevant issues with regards to international cooperation in higher education and ODL.

The next two research papers, both from South Africa, are related to student support services.

In the first one (*Evaluating student support provision in a hybrid teacher education programme using Tait’s framework of practice*), Folake Ruth Aluko uses a multi-method approach –survey, focus group and interview– and Alan Tait’s 7 dimensions model –based on the students’ whole experience of studying– to analyze the support provision in a hybrid Teacher Education Bachelor Programme at the University of Pretoria. The author suggests some guidelines on the use of the framework, which can be of interest for other institutions.

The next paper (*Student support service excellence evaluation: Balancing the Iron Triangle of accessibility, cost-effectiveness and quality?*) by Asteria Nsamba, Angie Bopape, Bongi Lebeloane and Laetitia Lekay, focuses on UNISA study centres as spaces that provide support services in ODL universities. Using data of occupancy of the facilities at a study centre and a survey administered to students as users of the facilities (Computer Lab, Library and Study Space), the authors analyze the three dimensions of the Iron Triangle: access, quality and cost-effectiveness. They identify aspects of interest that can help to improve the use of the study support facilities.

The next two research papers, both from the USA, are related to open educational resources (OER).

The first one (*Exploring student perceptions as co-authors of course material*), by Eric Werth and Katherine Williams, analyzes the pedagogical value of and OER-enabled approach. The survey and interview-based study shows students’ perceptions about motivation and concern about open assignments, impact of the experience on skills gained, attribution, agency, etc. The findings show
a positive effect of engaging students as co-creators, and the exploratory paper contributes to the empirical literature in the field.

In the next paper (Inequitable Impacts of Textbook Costs at a Small, Private College: Results from a Textbook Survey at Gettysburg College), Sarah Appedu, Mary Elmquist, Janelle Wertzberger and Sharon Birch presents librarians concern and perspective on supporting faculty to reduce course materials costs. The survey-based study analyses the students’ practices with regards to spending and textbook use and how they manage and experience the high costs. The authors advocate for the adoption of OER as an equity solution.

The last two contributions in the research papers section are framed within the COVID-19 pandemic and its impact in open and distance education.

In the first one (A global crash-course in teaching and learning online: A thematic review of empirical Emergency Remote Teaching (ERT) studies in higher education during Year 1 of COVID-19), William H. Stewart, based in Korea, presents an analysis on 38 papers about ERT in higher education published in 2020. The review describes the country where the studies were based, the methodologies, the knowledge domain and four major themes the papers dealt with: positive and negative experiences; digital divide and inequities concerns; problems and challenges; and adjustments in response to ERT. The paper provides an interesting overview of the first actions implemented due to the pandemic.

The last research paper (Exploring Learners’ Attitude toward Facebook as a Medium of Learners’ Engagement during Covid-19 Quarantine), by Meisam Moghadam and Habibeh Shamsi, from Iran, explores the use of one of these emergency solutions during the pandemic: the use of Facebook as a supplementary resource. Using surveys, interviews and observation as methodologies and sociocultural theory as a frame, the authors report about the use of that medium for English language learning. The findings show a positive attitude towards this tool and its potential for L2 teaching and learning.

In the innovative practice articles section, the first paper is also contextualized in the COVID-19 pandemic. Phu Vu and Christine Fisher, from the USA, present the article Does Virtual Field Experience Deliver? An Examination into Virtual Field Experience during the Pandemic and Its Implications for Teacher Education Programs, where they compare the virtual field experience with the face-to-face field one that was common before the pandemic. The onsite observation of teachers and classroom settings was replaced with videos in a virtual learning platform. The study shows that academic performance did not change in the virtual field experiences. The paper reflects about the potential of virtual observations beyond the pandemic.

Finally, in the last paper in the issue (Lessons learned developing a massive open online course in implementation research in infectious diseases of poverty in low-and middle-income countries), an international team composed by Pascale Allotey, Daniel Reidpath, Edith Certain, Mahnaz Vahedi, Dermot Maher, Pascal Launois and Bella Ross present a case study of a MOOC addressed to a specific learners population: those located in LMICs. The authors describe the different steps followed in the planning, development and implementation phases of the MOOC, providing interesting keys and practical insight for those involved in similar MOOC teaching experiences.

We hope these articles will provide input for reflection and good practice in open and distance education.

Special thanks from Open Praxis to the authors and reviewers who have contributed to this issue.
References


An Exploration of China-Africa Cooperation in Higher Education: Opportunities and Challenges in Open Distance Learning

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Abstract
Cognisant of the wide range of cooperation between China and Africa and the existing strong Sino-African relationship, this article explores the international cooperation between Africa and China in the higher education domain, especially in the field of Open Distance Learning (ODL). The study employed data triangulation relying on both secondary and primary sources to address the main research questions. It sheds light on the development of ODL in Chinese Higher Education Institutions (HEIs) with a focus on professional development of university teachers. The article argues that ODL is crucial for emerging economies' sustainable development. Key factors such as political, technological and socio-cultural features play a crucial role in the development and effective implementation of ODL. By exploring the potential opportunities and identifying related challenges, this article contributes to an understanding of how mutually beneficial partnerships between African universities and Chinese HEIs can be developed within the wider framework of Sino-African relationship.

Keywords: Lifelong learning, Educational technology, Professional development of university teachers, Sino-African cooperation, Sustainable development, Open Distance Learning

Introduction
China and Africa are both fast growing economies in need of an educated workforce to support their social, economic, technological and human development (Jegede, 2012; Gaba & Li, 2015). One of the United Nations’ sustainable development goals emphasises the importance of providing good quality education stating that “obtaining a quality education is the foundation to creating sustainable development. In addition to improving quality of life, access to inclusive education can help equip locals with the tools required to develop innovative solutions to the world’s greatest problems” (UN Sustainable Development Goals, 2019a, n.p.). However, formal education cannot sufficiently meet the demand of the economy and respond to the countries’ rapid development (Mwapachu, 2010; Jegede, 2012; Gaba & Li, 2015). In contrast to formal education, Open Distance Learning (ODL) is flexible and accessible and involves “multi-learners, with multi-modes, by multimedia, at multi-levels and for multi-purposes” (Wei, 2010, p. 49). ODL opens learning opportunities, promotes a learning society and contributes to the preparation of a workforce needed to support sustainable economic development.

Many African countries focus on the development of the formal education system which includes building schools, colleges and universities to ensure proper education systems in order to meet the countries’ development needs (Jowi, 2012). This has led to some positive developments in Africa’s higher education sector, for instance, Africa’s top 10 most populous nations including Nigeria, South Africa, Ethiopia, Democratic republic of Congo, Egypt, Sudan, Uganda, Algeria, Kenya and Tanzania.
have a total of 740 universities serving 660 million of Africa’s one billion people (Dahir, 2017). At the same time, ODL courses have been provided by some well-established universities in some countries, such as the University of South Africa (UNISA) and the Zimbabwe Open University (Gunga & Ricketts, 2007). However, the African continent currently has the world’s fastest-growing university-aged cohort and the growth is expected to double by 2050 (Gu, 2017). For example, the number of students in secondary education in Tanzania jumped from 345,000 in 2003 to 2 million in 2010 (Mwapachu, 2010). Arguably, this poses a great challenge to ensure that all the young people graduating from high school can access university-level education. In addition, apart from the issue of young people having access to post-secondary education, many countries in Africa are also faced with the challenge to provide lifelong learning opportunities to the people (Unwin et al., 2010). This makes it necessary to explore different means such as ODL for equipping a large population of Africa to access higher education and opportunities for lifelong learning.

Similarly, there has been a growing demand for higher education in China, for instance, its enrolment rate of higher education has increased from 10.5% in 1999 to 25% in 2010; yet, the number of people who had received Higher Education in China was only 1/20 of its total population in 2005 (Ding et al., 2010). Facing the strong learning demand, the Ministry of Education (2010, p. 9) specified its goals which are to: “modernise education, bring a learning society into shape and turn China into a country rich in human resources by the year 2020”. At the same time, the national government increased its spending in education, at an average annual growth rate of 21.58% and reached 4% of GDP in 2012 (Wen, 2013). Moreover, the allocation of educational resources was given priority to rural, remote, poor and ethnic minority areas for the improvement of fairness in education (Wen, 2013). As part of China’s educational strategy, the development of ODL in China was catapulted by political, social and economic reasons (Gaba & Li, 2015). Gaba and Li (ibid.) assert that ODL has played an important role in Chinese education development and in constructing a learning society which has made significant contributions to economic development.

In light of the educational demands faced by China and Africa and the existing strong Sino-African relationship in many sectors, this article explores the international cooperation between Africa and China in higher education, especially in the area of ODL. The article seeks to address the following questions:

• What is the status of ODL development in Chinese Higher Education Institutions (HEIs)?
• How well developed is the current China-Africa cooperation in Higher Education?
• What are the existing opportunities and challenges to Sino-Africa cooperation in ODL?

Method

To address the research questions, the study employed a combination of qualitative interviews and critical literature review. The conduct of literature review involved employing different search engines, such as university library search and Google Scholar. A range of keywords such as “lifelong learning”, “Sino-African cooperation” and “Open Distance Learning in China and Africa” were used to filter and narrow down the number of articles to be reviewed. Both Chinese and English academic sources as well as government websites and reports were consulted to facilitate an understanding of the background and context of the Sino-African relationship considering its political, economic and social dimensions.

At the same time, some in-depth qualitative interviews were conducted by one of the authors, an African scholar, who spent a total of six months working at a Chinese University as a consultant in professional development of university teachers between 2018 and 2019. The African scholar
was contracted by one of the universities in Zhejiang Province, East China, to provide training to a consortium of university teachers drawn from six universities in the province. The African scholar also participated at some national conferences focusing on teaching and learning in China and the interactions he had with university staff helped to broaden our understanding of the issues around teaching and learning in higher education in Chinese context including the development of ODL.

The African scholar conducted 12 semi-structured interviews with teachers who were attending a continuous professional development course. He also interviewed a retired professor who has been working actively with the Ministry of Education to support the provision of online teacher training programmes across the country. In total, 13 semi-structured interviews were conducted adhering to the BERA ethical guidelines (BERA, 2004). The participants were free to participate or withdraw at any time during the study (Hennink et al., 2011). No real names of the participants are used in the project for confidentiality and anonymity (Cohen et al., 2011; Israel & Hay, 2006). The interviews were not recorded, yet observations and notes were taken during each interview to capture the important points made by the interviewees. The interviewees were able to articulate their experiences of participating in different ODL courses in China including the benefits and challenges associated with the emerging massive open online courses (MOOCs). The use of semi-structured interviews facilitated the teachers to share their experiences including feelings and emotions about the use of ODL courses (Merriam, 2009). Thematic analysis was employed to identify, analyse and report the key patterns in both secondary data and interviews in order to address the research questions (Braun & Clarke, 2006).

Results

The results are presented using the following key themes derived from the main research questions:

- The Development of ODL in China
- ODL for Professional Development of University Teachers in China
- Sino-Africa Cooperation in Higher Education

The Development of ODL in China

The ODL system in China began with the establishment of the Radio and Television University (CRTVU) in 1979 which was modelled on the UK’s Open University system (Zhang & Li, 2019). The purpose of establishing Radio and Television Universities was “…a strategic choice for expanding higher education, upgrading the scientific and cultural level of the masses, as well as having a larger number of professionals” (State Council, 1979, p. 1). The ODL system in China has been through three different stages in its development, adapted to the Chinese context (Gaba & Li, 2015; Ding et al., 2010). The three stages include a single-mode distance teaching university network (1979–1985), dual-mode distance teaching universities (late 1980s–1990s) and dual-track distance teaching universities (1999 to 2011) (Li, 2014).

At the first stage, the Central Radio and Television University (CRTVU) was set up as the headquarters focusing on curriculum development and the programmes were limited to the engineering and social sciences disciplines at that time (Zhang & Li, 2019). Wei (2010) clarifies that twenty-eight provincial Radio and Television Universities (RTVUs) were responsible for enrolling students and organising the teaching and learning activities including the awarding of certificates. They worked in partnership with local conventional higher education institutions hiring their staff on part-time basis and using
facilities on their campuses. During this stage, a national television network was set up to facilitate the delivery of courses and programmes by talking heads of professors from the traditional universities which would be broadcasted by China Central Television (CCTV) (Li, 2014). On the other hand, the real distance learners had to follow the lectures on their own with no additional support due to staff shortages at local RTVUs. ODL was clearly adapted to the Chinese contextual reality from the very first stage of its development.

In 1986, with the decentralisation of the national educational system, local RTVUs moved out of the campuses of traditional institutions and became independent dual-mode local distance teaching universities “by offering education to both working adults and high school leavers” under the direct leadership of their local government (Wei, 2010, p. 51). In the meantime, the CRTVU undertook a large-scale course development project in collaboration with traditional universities and provincial RTVUs (Li, 2014; Zhang & Li, 2019). More than 200 courses were developed and revised. Television and radio programmes were converted into audio-cassettes and video-cassettes as a key component of the new study package. The local RTVUs were provided with devices such as cassette players for students to listen or watch if they had no access at home. However, as most of the self-study packages were unable to provide the needed guidance and support for students, local RTVUs had to provide group tuition to provide a bridge for the separated teaching and learning activities. This was not without its challenges; the economic problems led to a drop in the number of adult learners studying full-time as employers could not afford to continue to give their workers paid study leave. The working adults were also unable to fit in the schedule of the television programme broadcasting. This marked a turning point in the development of ODL in China as the RTVUs had to start thinking about ways of supporting part-time students studying at a distance. On the other hand, the high school leavers studied on full-time basis using the same materials as the part-time students. In a way, during the day, the RTVUs resembled the regular colleges and looked more like adult higher education institutions in the evenings and weekends when working adults attended group tuition sessions.

In the late 1980s and 1990s, the Chinese government started promoting the idea of continuing education, lifelong learning and open learning with the view to improve the quality of the nation (MOE, 1993 cited in Wei, 2010). The advent of technology has made it possible for the provision of more interactive support in ODL. For instance, during the early years of the new millennium, the CRTVU combined the satellite broadcast system and China Education and Research Network for the delivery of ODL. This helped the different stakeholders including teachers and students to access online resources and other additional materials for more than 500 courses from their campus computer laboratories or from home computers (Zhang & Li, 2019). In addition, communication between teachers and students has been enhanced using technology applications such as emails, teleconferencing, discussion forums and chatrooms including instant messaging programmes commonly used in China such as QQ (a social media platform). These developments are helping to facilitate the transition in pedagogy, from teacher-centred to student-centred approach in ODL provision. The higher education graduates of CRTVU reached 7.2 million from 1979 to 2009 contributing approximately 24% of the total Higher Education graduates (Liu, 2009). In 2012, the national government established the Open University of China (OUC) using the operational guidelines of the CRTVU. The OUC is designed to be open to all members of the society in China including adults, school-aged students, the elderly, farmers, the unemployed and other disadvantaged groups and it provides practical-oriented formal tertiary education and non-formal education (Li, 2014). Currently, ODL in China is further developed and covers different levels of education for a large audience attracting people from both public and private sector.
It emerged from interviews that several courses are being designed and delivered using ODL based on the market demand. Apart from the Open University of China, several universities in the country are also providing different online courses, the MOOCs, which can be accessed by any member of the public. Some of the eminent universities such as Tsinghua University and Peking University are among those that are actively providing MOOCs. For instance, Tsinghua University provides courses in both Chinese and English making it possible for non-Chinese speakers to benefit from the courses (see: www.xuetangx.com). The teachers who participated in our study were positive about the online courses provided by different universities and commented that:

“I’m interested in the accredited online courses like my course. It’s useful for me to learn the advantages of the accredited courses and then introduce the good/useful videos/lecture notes to my own students” (Interviewee A)

“It is good for me and the students to see what happens in other classes at the top Universities in the country” (Interviewee B)

In addition to the excitement of being presented with ODL opportunities, the interviewees mentioned the excessive workload which inhibits their engagement with the online courses.

**ODL for Professional Development of University Teachers in China**

The need to develop qualified teachers through collaborative training initiatives has been placed on the sustainable development agenda by the UN. For instance, one of the UN Sustainable Development Goals on Teaching Quality (2019a) states that: “by 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing states” (n.p.). This article sought to explore the potential for collaborative delivery of ODL between China and Africa focusing on continuous professional development. It was, therefore, important to understand how well developed the provision of ODL for professional development of teachers in China is.

The Ministry of Education (MOE) In China coordinates the provision of online Continuous Professional Development Courses. It is generally difficult to find documented information about these courses, especially in English. However, one of the authors of this article participated in delivering one of the online workshops that was delivered to university teachers in 2018. This presented an opportunity to interview some university teachers, including Professor Jimmy (not his real name) who is actively involved in the online Professional Development Training Programme. Professor Jimmy indicated that the MOE provides online courses to support the continuous professional development of teachers at different levels including university and school teachers. Selected experts in teaching and learning and specialists from various fields of study are chosen to design the online courses and workshops. All the courses and workshops can be accessed easily by all the academics using their university accounts. With additional payment for the courses, they could get more support, that is, have asynchronous and synchronous interactions online with the course providers as well as obtaining a certificate at the end of the course. Alternatively, university academics can simply access the online material for free but do not obtain a certificate. This was welcomed by teachers:

*I really appreciate the fact that one can study for free and get some useful ideas to improve own practice. If you want to receive a certificate, you can pay a nominal fee for the courses but no need to pay if you just learn by yourself without extra online support from the experts. (Interviewee C)*
Occasionally, the MOE organises workshops which run over three days, usually from Friday to Sunday where teachers can either attend physically or virtually. As indicated earlier, in 2018, one of the authors of this article participated in a similar workshop. The workshop was hosted by a university in Henan Province, in the North of China and different speakers were arranged by the MOE. The workshop was attended by more than one hundred university teachers in person while more than 2000 teachers from different parts of the country followed the proceedings of the workshop online over the three days period. Those who participated in these programmes were largely positive and express satisfaction about the benefits of these opportunities in enhancing their teaching practice. However, not everyone is able to benefit from the face-to-face interactions as the workshops are held in places that might require long distance travelling. The MOE changes the workshop venues every year to ensure that interested university teachers from all the different provinces can have a chance to attend in person.

**Sino-Africa Cooperation in Higher Education**

The need to foster cooperation between countries has been articulated in the UN’s Sustainable Development Goals. For instance, one of the partnerships goals highlighted the need to: “enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation” (UN Sustainable Development Goal, 2019b, n.p.). It is against this backdrop that we sought to explore the cooperation between China and African countries in Higher Education as discussed below.

The cooperation in Higher Education between China and Africa started as early as 1956 when the newly established People’s Republic of China initiated diplomatic ties with Egypt which led to the exchange of eight students and teachers between the two countries (Gu, 2017). The exchange of students has continued to grow over the years, with a rapid increase in the number of African students in China in the 21st Century (Haugen, 2013). For example, according to China’s Ministry of Education (MOE) (2017), between 2005 and 2015, African student numbers in China rose from 2,757 to 49,792, a 35% average annual increase. This dramatic growth can only be explained with the related understanding of Chinese government policies and education strategies, such as the Forum on China and Africa Cooperation (FOCAC) and the 20 + 20 cooperation plan by the MOE in China.

The establishment of FOCAC in 2000 sought to consolidate the existing relationship between China and the African continent to face the emerging global challenges (Ojo, 2016). Higher Education is one of the main focal points for the FOCAC and several initiatives have been implemented (https://www.focac.org/eng). For instance, historical data show how the figures have increased over the years; between 2010 and 2014, the Chinese Government provided 33,866 scholarships to African students. In 2012, FOCAC rolled out the African Talents Programme which sought to train 30,000 African professionals in China between 2013 and 2015 and a total of 18,000 students were given Chinese Government scholarships. In 2015, at the 6th FOCAC ministerial conference in Johannesburg, Chinese President Xi Jinping provided additional 30,000 scholarships for African students and 2000 postgraduate and doctoral slots at top Chinese institutions including visits to China for 200 African scholars and 500 African youths. In the same vein, in 2018, at the 7th FOCAC Ministerial conference in Beijing, Chinese President Xi Jinping announced plans to further increase aid to African students with an additional 50,000 scholarships and 50,000 training opportunities for seminars and workshops.
in many disciplines. At the same conference, China pledged to train 1000 high-calibre Africans and to continue to support the development of the existing Confucius Institutes and classrooms in Africa. The Chinese Universities are continuing to increase the number of scholarships for African students, for instance, in 2016, eight Chinese universities agreed to reserve places for 1000 students from Ghana every year.

At the same time, in 2009, the MOE in China launched the 20 + 20 cooperation plan which involves the establishment of one-to-one partnerships between 20 Chinese and 20 African higher education institutions. By 2017, the programme had established partnerships in seventeen African countries and some Chinese Universities participating in the programme are Peking University, East China Normal University and Jilin University (Gu, 2017). The Sino-Africa relations have seen the provision of some African studies at some Chinese Universities including Peking University’s Centre for African Studies, Zhejiang Normal University Centre for African Education Studies, and Tianjin University of Technology and Education Centre for African vocational education studies.

In an effort to internationalise higher education, between 2010 and 2020, the Chinese government set out to recruit 500,000 international students with 150,000 of them enrolled on degree programmes (Gu, 2017). According to the MOE, by 2015, significant progress was made with the country hosting 397,635 international students and 12.5% of these were African students. To demonstrate China’s commitment to higher education exchange with Africa, numbers of African students are continuing to increase annually. One of the authors of this article worked at a Chinese University in the Zhejiang Province between 2018 and 2019 and each time he visited the university, he met new African students from different countries including Zimbabwe, Malawi, Democratic Republic of Congo, Congo-Brazzaville, Benin, Liberia, Zambia, Burundi, Sudan and South Africa. The International Office in the university where the African scholar was based confirmed that in 2018/2019 academic year the university had enrolled a total of 1257 international students and 315 of these were from African countries. Most of the students were doing undergraduate studies while some of them were enrolled on postgraduate courses including Master’s and PhD programmes. For the students enrolled on undergraduate programmes, they use Chinese language as the medium of instruction; hence, they must learn Chinese prior to embarking on the degree programmes. At a recent international forum of higher education organised by China’s Association of Higher Education, speakers from different Chinese Universities shared details about increasing numbers of African students enrolled in their universities and this includes some of China’s top Universities such as Peking University, Tsinghua University and Zhejiang University that are recognised globally.

There are many tangible achievements in higher education exchange between China and Africa. Gu (2017) provides a summary of some of the key achievements of the Sino-Africa relations in the field of Higher Education:

- The FOCAC supports academic exchanges, between 2009 and 2015, 34,500 scholarships were awarded.
- Through the UNESCO Trust Fund, China has promised US$2 million to support development programmes in Africa (mainly higher education).
- The Chinese government dedicated US$40 million to build Africa’s largest University Library in Tanzania.
- China has established 46 Confucius Institutes in 32 African countries. They provide language and cultural training to over 36,000 Africans and have offered 951 scholarships.
• The 20 + 20 Cooperation plan developed by China’s MOE has established partnerships between 20 Chinese and 20 African Universities in 17 African countries. While there exist several opportunities for establishing collaborative partnerships between Chinese HEIs and African universities, a number of challenges also need to be acknowledged as highlighted below:

• The challenges related with political factors: as government initiatives and education policies play a significant role in the direction of the Sino-Africa cooperation in Higher Education, the political stability of the different countries and the relationship between governments directly influence the development. Over-reliance on government policies can be a barrier, universities should take a lead in building partnerships especially in the growing competitiveness in online education (Gaba & Li, 2015).

• The economic factors related challenges: the Sino-Africa cooperation in Higher Education rely heavily on available funding. Currently, China provides more resources into the cooperation, but the investment is mainly 'one-way' with African students and professionals receiving Chinese scholarships in Higher Education exchanges. As the Chinese government focuses on reducing public funding in higher education, educational aid may become unsustainable (Haugen, 2013).

• The challenges of technological factors: technological and infrastructural constraints in underdeveloped regions of developing countries may impede the effectiveness of Higher Education cooperation. As argued by Hao (2017), leveraging technology is certainly one of the big challenges for the higher education institutions.

• The challenges from society: the active engagement of China in Africa has received some criticisms (Bbaala, 2015), and the Sino-Africa cooperation in Higher Education needs to be understood within a wider picture of Sino-Africa relationship in order to achieve a long-term strategic partnership. Social conflicts associated with racial identities can affect the relations between Chinese and African students making it difficult to build good diplomatic relations and sound collaborative institutional partnerships.

• The challenges of heterogeneity: Africa is a large continent with many countries that are different from each other. The heterogeneity in the culture, language and educational systems requires more nuanced understanding in order to foster effective collaborative partnerships.

• The other challenges include the design of internationalised curriculum that can be delivered effectively by the cooperating universities. It is also important to ensure that effective quality assurance mechanisms are put in place to facilitate the enhancement of student learning experience which can affect the sustainability of partnerships in ODL.

Discussion

Based upon the findings, it is evident that political, technological, economic and socio-cultural factors contributed to the development of ODL in China. Government initiatives led to the establishment of distance learning in China, and education policies play a significant role in the direction of its development. Economic factors, such as the adoption of a socialist market economy policy for promoting China’s economic development led to many employers’ unwillingness to release adult workers from their work to study at RTVUs (Wei, 2010). Technology and infrastructure also need crucial consideration for the development and implementation of ODL. The influential role of technology has been evident in the change of Chinese ODL delivery mode from watching television programmes in the classrooms to teleconferencing and interactive instant messaging in order to ensure the enhancement of student experience (Li, 2014). Unwin et al. (2010) pointed out the infrastructural constraints for developing ODL in Africa and the irony of increasing inequalities among learners when only the
universities with the best infrastructures in Africa can benefit from the effective use of technology. This is opposite to the underpinning ideas of educational democracy, equity and egalitarianism for ODL. With the development of technologies, the provision of ODL in many countries today has been made easier. However, some lessons can be drawn from the model adopted by China in the past when many people had limited access to resources that distance learning is not ‘one-size-fit-all’, alternative delivery modes need to be developed considering the local contextual reality in order to cope with the restriction of technology and accommodate the needs of learners.

ODL for Chinese university teachers’ training has many benefits, such as expanding the knowledge about teaching and learning which leads to improvement of practice, and enhanced student experience. University teachers have the opportunity to network and learn from some of the best practitioners. Introducing an international dimension in the courses by engaging some speakers from abroad would help to diversify the experience and introduce new ideas that can improve the quality of courses. At the moment, as there is limited information about this ODL programme, it is difficult to evaluate what is working well and what needs improving. It is unclear whether there is any similar ODL programme for university teacher training in Africa. Unwin et al. (2010) pointed out the lack of training and practical experience in the use and implementation of e-learning in Africa after surveying 358 participants across 25 African countries. The ODL for professional development of university teachers is potentially an area that can be explored further by the Chinese and African Universities to strengthen collaboration, facilitate knowledge transfer and exchange of ideas to enhance teaching and learning practices. Professionals from Chinese Universities can co-design some online courses with their counterparts in African universities that can contribute to professional development and enrich students’ learning experiences.

The relationship between China and Africa is traceable to as early as the 15th Century when Chinese merchants arrived at the continent’s eastern coast (Besada & O’Bright, 2016). In the 21st Century, many trade agreements have been signed between China and Africa, such as higher education, infrastructural development, technology transfer, institutional building and job creation. The trade between China and Africa increased ten times between 2001 and 2010 compared to the eightfold increase in China’s trade with the rest of the world (Wasserman, 2012). By the end of 2013, China’s trade with Africa was over US$200 billion (Moyo, 2014; Rotberg, 2014). In addition, between 2000 and 2011, over 50% of China’s total foreign aid allocation was given to African countries (Brautigam, 2011). Reflecting on China-Africa relations, Raine (2009, p. 14) stated that, “China, as the world’s largest developing country is posited as a natural ally of Africa, the world’s largest development continent”. Both China and Africa need each other for their own development agendas (Akpor et al., 2013). The establishment of the Forum on China and Africa Cooperation (FOCAC) in 2000 provided China with an opportunity to establish robust economic, political and social relations with the African continent as a regional partner within the international cooperation framework (Ojo, 2016). Despite the growing economic relations between China and Africa, some critics consider that the active engagement of China in Africa is tantamount to neo-colonialism (Bbaala, 2015) and asymmetrical (Tull, 2006). We concur with Kumpe and Chen’s (2014) view that it is essential for the relationship between China and Africa to be founded on mutual benefit if a long-term strategic partnership is to be achieved.

As Sino-Africa relations are continuing to grow in strength, one of the key areas that characterise the Sino-Africa relations is the investment in Higher Education. Higher Education Institutions (HEIs) play a significantly important role in ensuring the adequate preparation of individuals who can contribute actively to their communities and societies. China and Africa are both fast growing economies which rely on highly skilled workforce for sustainable development. Both China and Africa understand the pivotal role that education plays in “fostering growth, reducing poverty and
boosting shared prosperity” (World Bank, 2017). Despite the rapidly increasing numbers of African students coming to China, the exchange in Higher Education between China and Africa is mainly ‘one-way’ (Haugen, 2013). The ‘one-way’ model needs to be reconsidered and reflected on and potentially seeking a ‘two-way’ dialogue should be prioritised where China is not only offering educational opportunities to African students but should also benefit from Africa’s rich history and cultural heritage. Taking into account the increase in the number of Africans immigrating into China and Chinese immigrating into Africa, a few years ago, there were about 500 000 Africans living in China and up to a million Chinese living in Africa (Besada & O’Bright, 2016), arguably these numbers are continuing to grow on both sides. It is crucial for both Chinese and African people to be aware of the similarities and differences across cultures and develop a mutual understanding. Most of the times Africa is conceptualised as a homogenous group, yet, there is great diversity among the different countries in Africa. This should be borne in mind when seeking to understand the opportunities and challenges of fostering collaborative partnerships. Opportunities in ODL, such as building relevant courses with inputs from African scholars would help the Chinese to learn and understand more about Africa, thus enhancing Sino-African relationship via mutual understanding. China has been establishing many Confucius Institutes in Africa and a few Chinese universities (e.g. Peking University) have opened centres of African studies. There is much scope on cultural exchange. It is also time for Chinese and African universities to establish collaborative research projects to facilitate knowledge transfer and sharing of good practices within the Sino-Africa cooperation in higher education framework.

Conclusion

Much research and discussion on Sino-Africa relationship has been focused on the political and economic dimensions (Tull, 2006; Ojo, 2016). We did not intend to engage with the analysis of the economic relations between China and Africa, instead, our intention has been to explore the Sino-Africa cooperation in Higher Education, an area that we understand has not yet been sufficiently brought to light. This article provides a glimpse of the ODL development in China and Sino-Africa cooperation in Higher Education based upon secondary research and some primary data generated by an African scholar who spent six months engaging in consultancy work in Professional Development of university teachers in Chinese universities between 2018 and 2019. It is evident that the concept of ODL emanated from the western countries and was embraced, adapted and continues to experience transformation in line with the evolving characteristics of China (Zhang & Li, 2019; Li, 2014). Looking at the development of ODL in Chinese context, it can be gleaned that with determination and a clear sense of purpose, it is possible to imitate and adapt approaches from the West to suit local contexts.

There are many achievements in higher education exchange between China and Africa. Sino-Africa cooperation in Higher Education needs to be understood within a wider picture of Sino-Africa relationship, taking into account the political, economic, socio-cultural and technological factors. In higher education, instead of being at the receiving end of scholarships and infrastructural developments provided by China, Africa has its own rich history, culture and knowledge systems which could contribute to a better understanding between different cultures. ODL is one of the many areas through which African universities can strengthen their relationships with their Chinese counterparts and contribute to a more sustainable Sino-Africa relationship. Furthermore, instead of treating Africa as a homogenous entity, African countries have diverse culture and histories, and the continent’s heterogeneity needs further understanding when building educational collaborative partnerships.
There are many questions that are still waiting to be answered, for instance, how many ODL courses of African studies (such as African cultural, language, history, geography and tourism) are available in Chinese? How many ODL courses available in Africa are about Chinese related topics, such as Chinese language, culture, history, and economy? Is there much awareness of Chinese MOOCs in Africa? How many African students are enrolled and studying through the Chinese MOOCs? How many African Universities are developing their own MOOCs? Some MOOCs are built by Chinese and English scholars in both languages (www.xuetangx.com), however, we do not have the information on whether there are any MOOCs designed through the collaboration of Chinese and African scholars.

The UN Sustainable Development Goal (2019a) focusing on quality education states that:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development (n.p.).

Bearing in mind the UN aspirations stated above, both Africa, the world’s largest developing continent, and China, the world’s largest developing country, have important roles to play and much scope to work together towards the achievement of the UN sustainable development goals. Other countries can then draw inspiration from the Sino-African cooperation in Higher Education and make use of ODL to strengthen the provision of good quality education, a precursor of sustainable economic development.

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Evaluating student support provision in a hybrid teacher education programme using Tait’s framework of practice

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Abstract
Effective student support is key in stemming the dropout in distance education. This article reports on the student support provision in a hybrid teacher education programme. Altogether 160 participants were purposively selected; 126 completed a survey, 33 (30 students and 3 administrative staff) took part in six focus group discussions; and one instructional designer took part in a one-on-one interview. Tait’s framework on student support guided the study. The data analysis involved descriptive statistics and thematic analysis. The findings revealed that, although the institution is striving to support its students, areas that need attention include call centre services, tutor support services, tutor-student communication, and funding. Recommendations include the need for providers to pay particular attention to students’ whole experience to ensure effective student support. Further research is needed regarding the contextualisation of each aspect of Tait’s framework; the author suggests some guidelines to guide this process.

Keywords: distance education, teacher education, student support, student success, Tait’s student support framework

Introduction and Literature Review
Scholars consider distance education to be one of the most viable ways of transforming societies because of its ability to leverage equity, access and inclusivity (Council on Higher Education [CHE], 2014; Nage-Sibande & Morolong, 2018). This ties in with the 2030 Agenda for Sustainable Development, especially concerning teacher preparation and professional development (United Nations, 2015). According to CHE (2014, p. 1), “there is evidence that, designed and implemented well, (its) provision can reach larger numbers and cater for more diverse student needs”. Distance education has been used for decades to train and retrain teachers in emerging economies (UNESCO, 2002). The continuous professional development of teachers is paramount because there is a link between the teachers’ quality and students’ learning outcomes. Also, the quality of education offered within a country is a strong predictor of economic growth rates (Africa-America Institute, 2015, p. 11).

However, the mode has often been plagued with lower completion rates compared to contact tuition. The risks of lower completion rates in distance education are higher due to the emphasis on access and inclusion (Tait, 2015). Scholars (Aluko, 2015; Tinto, 1975) have warned that the reasons for this dilemma are multi-faceted, and should not be taken out of context. Nonetheless, institutions that enrol students in this mode owe it to the field, to all stakeholders and to themselves to improve student success rates (Grau-Valldosera & Minguillon, 2014).

Generally, student support is defined as the creation of an environment that is conducive to learning to assist students to succeed (Lehman & Conceição, 2014; Simpson, 2012). Findings of a study conducted among members of the International Council for Open and Distance Education (ICDE) by Tait in 2014 revealed that distance education providers were generally committed to researching student success strategies. However, there was a lack of evidence that findings from such studies were fed back into institutional practices (Tait, 2015).
Tait (2000, p. 289) proposes the “primary functions of student support as being threefold, cognitive, affective and systemic”. To cater for students from different backgrounds and to make the early detection of problems more realistic, supporting students should involve everyone, making academic and non-academic services available to them (Sánchez-Elvira & Simpson, 2018, p. 2). Subotsky and Prinsloo (2011) refer to this as planning holistically for the “student walk.” The Open University (United Kingdom) is one of a few distance education institutions with a success story in student retention. Wildavsky (2016) attributes this to the ability of the institution to combine “scale with personalisation”.

Distance education providers have traditionally been early adopters of new technology, moving through different “generations” to provide students and facilitators with the necessary structure, dialogue and support (CHE, 2014, p. 6). In emerging economies, where paper-based distance education has prevailed, there is a move towards the hybrid model. This is the use of traditional classroom teaching methods together with online learning for the same learners studying the same content in the same course (Cleveland-Innes & Wilton, 2018, p. 12-13). Although information and communication technologies (ICTs) can be used to balance the transactional distance between institutions and students that has long plagued this mode, the “systemic evaluations of distance education provision have provided evidence that much provision is far from ideal” (CHE, 2014, p. 1). Simpson (2013, p. 105) refers to the phenomenon as the “distance education deficit”.

The aim of this study was therefore to examine the extent to which support structures put in place by a provider have assisted students enrolled for a newly developed web-dependent B Ed Hons in Teacher Education and Professional Development (TEPD). The author adopted Tait’s framework on student support, which was developed to establish an outline to understanding the goals for student success and the means to monitor and improve it, to evaluate the structures. The following research question guided the study: “To what extent have the support structures put in place by the university assisted distance students enrolled for the newly developed B Ed (Hons) TEPD?”

Background

The unit under study, situated in an emerging economy, has been running paper-based distance teacher programmes for almost two decades, and has graduated thousands of students. Based on institutional and national policies, it adopted web-dependent learning for all its programmes, irrespective of the mode. In October 2016, it introduced a hybrid B Ed (Hons) TEPD. Due to its iterative stance on the quality of all its programmes, continuous improvement is possible based on the application of research findings to practice.

Conceptual Framework: Tait’s framework of practice to support student success

According to Tait’s framework (2015), supporting student success is an organic whole-institution system that must be based on the students’ whole experience of studying. Previous understanding of student support has been treated as stand-alone, not considering the whole “student walk” referred to by Subotszky and Prinsloo (2011). The framework emanated from a study carried out among members of the ICDE “to examine the ways in which student success can be best supported in open, distance and e-learning programmes, and student drop-out and failure diminished” (Tait, 2015, p. 1). The framework involves the seven key elements briefly described below.

1. Pre-study information, advice, guidance and admission

Admission begins with the marketing of programmes. According to the author, “sales and marketing activities are essential if the institution is to make its offer known to relevant sectors of the public”.

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Although, there is “tension between student acquisition and business growth”, institutions are advised to avoid “misleading statements”.

2. **Curriculum or programme design for student success**
   This refers to the relevance of the curriculum, effective learning design that delivers student engagement, and clarity on how the nature of the programmes contribute to student success.

3. **Intervention at key points and in response to student need**
   This “involves all the stages of the student experience” providing the “structure in learner support and in particular interventions to support individual students”. These include three stages: pre-study (post-registration, review of readiness to start), in course (early contact, first assignment, mid-module, qualification progress check, preparing for examination) and through qualification (support for next module choice and qualification planning) (Tait, 2015, p. 8).

4. **Assessment to support learning and to judge achievement**
   Assessment is key in supporting students to succeed. Strategies emanate from the learning objectives of the module, and include both knowledge and skills. They could be formative and summative, continuous and final.

5. **Individualised and personalised systems of support to students**
   Technologies have made personalising individual support for students much easier. The process involves a range of staff members, including tutors, counsellors, guidance workers and career advisors. Due to cost implications, the author advises institutions not to make it an afterthought, but rather an integral part of their planning.

6. **Information and logistical systems that communicate between all relevant participants in the system**
   These have been central to distance programmes since their inception. Institutions use diverse learning management systems (LMS), which enable learning analytics. Clow (2016) defines this as “the measurement, collection, analysis and reporting of data about learners … for purposes of understanding and optimising learning”.

7. **Managing for student success**
   Student success should be at the heart of distance education and should be made a reality.
   The author reiterates the importance of putting effective quality assurance structures in place regarding each of the seven elements.

**Research Design and Methodology**

The study took place at a higher education institution that runs distance teacher programmes within its Faculty of Education. The researcher adopted the sequential explanatory mixed-methods research design characterised by quantitative data collection and analysis, followed by qualitative data collection and analysis. The design enabled the researcher to develop the survey instrument containing identified variables to be tested. At the same time, the results guided the development of the qualitative instrument and helped with the interpretation of results (Centre for Research and Innovation in Teaching, n.d.).

The population for the study included the first cohort (250) of the B Ed Hons TEPD programme, the administrative staff of the distance education unit and an instructional designer. Generally, convenience, purposive and non-probability sampling techniques were used. However, the researcher adopted the total population sampling technique because of the low enrolment of the first student cohort. The instruments were a survey, interview schedules for individual and focus group discussions, and relevant institutional documents. The validity and reliability of the instruments was based on a literature review and other relevant institutional documents. The researcher adhered to all ethical guidelines as approved by the university.
Table 1 provides the distribution of participants in relation to the instruments.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Participants</th>
<th>Codes</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey</td>
<td>Students</td>
<td>SS</td>
<td>126</td>
</tr>
<tr>
<td>Focus Group (FG) discussion schedule</td>
<td>Students (from five contact session venues)</td>
<td>FGSDB (Durban, 6)</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FGSNS (Nelspruit, 5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FGSPK (Polokwane, 7)</td>
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<td></td>
<td>FGSPT (Pretoria, 7)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>FGSRB (Richards Bay, 5)</td>
<td></td>
</tr>
<tr>
<td>FG discussion schedule</td>
<td>Student Administration: Distance Education staff members</td>
<td>SADE</td>
<td>3</td>
</tr>
<tr>
<td>Individual interview schedule</td>
<td>Instructional designer</td>
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</tr>
<tr>
<td>Total participants</td>
<td></td>
<td></td>
<td>160</td>
</tr>
</tbody>
</table>

SPSS was used for the statistical analysis, while the qualitative technique involved identifying codes, themes and sub-themes from the qualitative data.

**Findings**

The findings from the quantitative and qualitative data presented in this section have been guided by the seven elements provided by Tait (2015). Section A of the survey also contained biographical information.

**Biographical information**

Table 2 shows the biographical information in terms of the participants’ gender and age brackets. Of the 110 respondents, 81 (73.6%) were female, and 29 (26.3%) were male. These tally with the demographics of teachers in the country (Africa Check, 2018) and enrolled students in the institution’s distance education programmes.

The majority of the respondents (40) were in the age bracket 41–50 (35.1%), followed by 33 in the 31–40 age bracket (28.9%), 29 in the 21–30 age bracket (25.4%), 11 in the 51–60 age bracket (9.6%) and one in the 60+ age bracket (0.8%). Although many middle-aged students are still applying for the institution’s distance programmes, a new crop of younger students is emerging. This was not the case when the distance programmes were only paper-based. Research has shown that older students need more support in the use of technology than the younger ones (Aluko, 2015).
Table 2: Gender and Age Brackets

<table>
<thead>
<tr>
<th>Question item</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Missing frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>81</td>
<td>73.6%</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>29</td>
<td>26.3%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>100.0%</td>
<td>16 (14.5%)</td>
</tr>
<tr>
<td>Age brackets</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>21–30</td>
<td>29</td>
<td>25.4%</td>
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<td>31–40</td>
<td>33</td>
<td>28.9%</td>
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<td>41–50</td>
<td>40</td>
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</tr>
<tr>
<td>51–60</td>
<td>11</td>
<td>9.6%</td>
<td></td>
</tr>
<tr>
<td>60+</td>
<td>1</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>100.0%</td>
<td>12 (1.7%)</td>
</tr>
</tbody>
</table>

Sub-theme 1: Pre-study information, advice, guidance and admission

The questions in Section B covered pre-study information detailing how the respondents had heard about the B Ed Hons TEPD programme, the clarity of the information they had received, how they could contact the university, who to contact, and if they had done so, the extent of the helpfulness of staff, the timeliness of registration, and clarity on how to proceed with their studies.

The highest number of respondents (33%) heard about the programme from “marketers”, followed by “word of mouth” (31%), while no students (0%) heard about the programme via “social media”. Feedback from the qualitative data confirmed these findings, which shows that the university is yet to explore the use of social media to advertise its distance education programmes.

With regard to the clarity of information, there was greater clarity on the questions regarding the time it takes to complete the programme (82%), the academic requirements (74.6%) and the programme outcomes (70.63%). On the other hand, there was less clarity on the questions on technology requirements (56.2%) and programme modules (51.2%). The qualitative data buttressed these facts, except for those on the programme’s technology requirements, which was conflicting as many respondents indicated that the related information was clear.

In terms of contacting the university, both quantitative and qualitative data corroborated the fact that students were told they could call the university at the point of registration, with the numbers to call on the brochure. However, most of them found the call to marketers more helpful than that to the university as “the lines kept ringing” (FGSRB1) or they were “pushed from pillar to post” (FGSRB4). An administrative staff member indicated that “it was a time when we were under-staffed” (SADE3).

Generally, the respondents rated the support they received during registration to be supportive in terms of timeliness, the information they received on proceeding with their studies, the contact for enquiries and the friendliness of staff members. Very few respondents rated the support as very low.
Sub-theme 2: Curriculum and programme design for student success

The majority of the participants indicated that they found the programme very relevant to their job. The following quotations supported their claim:

“The programme is relevant to me because most of the things are practical...they are what we experience at schools.” (FGSPT4).

“Very relevant because I wanted to be in a management post, but because I didn’t have what I am busy with now I couldn’t.” (FGSRB6).

Sub-theme 3: Intervention at key points and in response to student need

Questions in this sub-theme revolved around participants’ awareness of three face-to-face contact sessions included in the study programmes, the identification of those with which they are familiar, their satisfaction with the contact sessions based on their attendance, their use of other available supportive interventions and their satisfaction with them.

Table 3 shows that most of the respondents (85.7%) were aware of the face-to-face contact sessions, while most were more aware of the ICT training session. Only two participants answered the question on the module consolidation session.

Table 3: Awareness of the Face-to-face Contact Sessions included in the Study Programmes

<table>
<thead>
<tr>
<th></th>
<th>Participants’ responses</th>
<th>Missing frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
</tr>
<tr>
<td>Awareness</td>
<td>90</td>
<td>85.7%</td>
</tr>
<tr>
<td>Identification of the ones(s) students know (questions 8a-c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of ICT training session</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Knowledge of modules orientation session</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Knowledge of modules consolidation</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

The majority of the participants indicated that they were satisfied with the contact sessions. Those that were not totally satisfied gave the brevity of ICT training, incapable presenters, computer illiteracy and lack of support for some electives as reasons.

Other supportive interventions were learning guides, tutorial booklets, admin booklets, online assignment submission, as well as online digital resources, discussion forums and wiki summaries. Due to the nature of the programme, interventions that could be regarded as compulsory, such as learning guides (99.0%), tutorial booklets (99.0%), admin booklets (97.6%) and online assignment submission (96.2%), received higher ratings. The participants were most satisfied with the learning guides. A student reiterated: “The materials are very helpful.” (FGSNS2).

However, the findings showed that the participants rarely made use of the online digital resources, discussion forums and wiki summaries. A participant’s comment gives a possible reason for this: “The majority of us have challenges with the online components of the programme.” (FGSNS5), while an administrative staff member confirmed that “students need more support with computer literacy” (SADE2). Another student lamented: “Others’ participation is problematic and discouraging... a lot of
the discussion is students asking questions and especially during assignment; no real interaction or discussion.” (FGSD6). This observation was corroborated by the instructional designer. On the way forward, students requested more contact sessions for ICT training and modules, the retraining of presenters (due to their lack of expertise) and support for electives during the sessions.

**Sub-theme 4: Assessment to support learning and to judge achievement**

As asserted in the institution’s policy document (University of Pretoria, 2009), assessment is recognised as a key motivator of learning and an integral part of teaching and learning. It also informs teaching practice and can help improve the curriculum. Participants indicated that they were aware of necessary assessment information (learning outcomes, assessment criteria, assessment procedures and dates). Further findings showed that the university uses both formative and summative assessments, which the participants judged as a “good mix of assessments”, and that the “number of assessments” was “appropriate for each module”. However, the following excerpts show the challenges: “A module feedback came only after the exam.” (FGSNS5); “I receive marked scripts with no comments” (FGSRB5); “I think the markers need further training” (FGSPT2); “There were no comments or constructive feedback…I will appreciate some efforts from the marker…I would like to know where I have gone wrong.” (FGSD8). All these can be supported by the very low response to questions c to g, as reflected in Table 4.

**Table 4: Students’ Response to Questions on Assessment and Feedback**

<table>
<thead>
<tr>
<th>Question item</th>
<th>Response</th>
<th>MF</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. There was a good mix of assessments</td>
<td>49</td>
<td>77 (61.1%)</td>
</tr>
<tr>
<td>b. The amount of assessment was appropriate for the module</td>
<td>58</td>
<td>68 (53.9%)</td>
</tr>
<tr>
<td>c. Assessment arrangements and marking were fair</td>
<td>7</td>
<td>119 (94.4%)</td>
</tr>
<tr>
<td>d. I received prompt feedback on my work</td>
<td>11</td>
<td>115 (91.2%)</td>
</tr>
<tr>
<td>e. The feedback will help me improve my work in future</td>
<td>16</td>
<td>110 (87.3%)</td>
</tr>
<tr>
<td>f. The feedback will help me to prepare for my final assessment (exam/portfolio)</td>
<td>5</td>
<td>121 (96.0%)</td>
</tr>
<tr>
<td>g. I am satisfied with the feedback I received from my tutors</td>
<td>2</td>
<td>124 (98.4%)</td>
</tr>
</tbody>
</table>

**Sub-theme 5: Individualised and personalised systems of support to students**

Sub-theme 5’s questions revolved around participants’ experience of individualised and personalised support services, including online support, tutor support, the call centre, SMSes, emails, student finance and disability.
Of the 126 participants, few made use of online support (25.3%), tutor support (20.63%) or both online and tutor support (12.69%). Reasons included no response or very late response from tutors, lack of internet access, the cost of bandwidth and inadequate online support. The instructional designer stressed the need for module coordinators to “own their modules” because some of them regarded distance education as an “add-on”, and not their core duty (ID).

In terms of other services, 61% had made use of the call centre, 100% had received an SMS from the university, and 84.6% had sent an SMS. A participant described this as the “most reliable” (FGSD2). In addition, 69.8% had received email, while 85.1% had sent email. Of the 126 participants, only one (0.79%) indicated a disability, which confirmed that fewer students with disabilities participate in the institution’s distance programmes.

Regarding finance, the majority of the 97 respondents (79.3%) had a student loan, followed by those who paid cash (17.5%), while only a few students were government-sponsored (2.1%) and only one had a bank loan (1.03%). Although information regarding financial aid is included in the institution’s distance education policy (University of Pretoria, 2009) and programme brochure (University of Pretoria, 2019), findings showed that a large number of participants were neither aware of the few highly competitive funding opportunities nor had they applied for them. Although all the participants were employed teachers, they lamented the need for aid for their studies. This is buttressed by the following comment: “but my salary does not mean I am not struggling” (FGSD 5).

In terms of participants’ perception of the helpfulness of the support services they receive, the rate of response showed that the clarity and timeliness of SMSes (25.3% and 21.7% respectively) and the clarity of emails (18.3%) received by participants received the highest rating of “extremely helpful”, while the call centre services (36.7%) and response to student queries (20.5%) received the highest rating of “not helpful”. Findings from the qualitative data reiterated these views. For instance, a student lamented: “Calls are not picked up, and we waste money.” (FGSPK4).

Sub-theme 6: Information and logistical systems that communicate between all relevant participants in the system

The findings on this sub-theme were based on evidence that emanated from the institution’s policy on distance education (University of Pretoria, 2009) and research reports (University of Pretoria, 2010-2019), as well as data from the focus group discussions with administrative staff members.

At the university, “the web is being used to provide technologically enhanced education and to improve the flow and management of information between teacher and learner” (University of Pretoria, 2009). In addition, tutor records (qualifications and experience of tutors) are detailed for each tutor and are available to module coordinators (University of Pretoria, 2009). The institution uses the PeopleSoft applications, which are linked to its Blackboard LMS. However, according to information gathered from administrative staff members, the institution is still trying to sort out how to make the link between the two easier regarding its distance programmes. Nonetheless, it has up-to-date detailed information about past, present and potential learners that is used to inform policy and plan programme development, course design and material development, learner support and other relevant aspects of educational provision (University of Pretoria, 2009). Research into learners and their needs is a high priority. Therefore, the unit has a dedicated research office for its distance programmes. Its management information system makes it possible to track student performance (in assignments, examinations or even attendance of contact sessions). This information is used to identify inactive and at-risk learners. It is also used to determine completion and throughput rates (University of Pretoria, 2009). This makes the collection of learner analytics possible. All research
findings are used to inform the institution's policy and practice. In addition, due to the context of its students, it still uses bulk SMSes to support students.

**Sub-theme 7: Managing for student success**

At the institution, students are at the heart of management. They are the reason for its existence. Since the inception of distance education in 2002, the university adopted the flat matrix management system. This made it possible for distance education to be integrated within existing structures, processes and procedures, where applicable, while some were restructured to accommodate the mode and new ones were set up, where necessary. Thus, the unit exercised functional authority over the staff involved in each particular business process. In addition, the university adapted and put appropriate quality criteria in place to ensure the equity of contact and distance programmes. According to the institution's distance education policy and practice (University of Pretoria, 2009), there is a symbiotic relationship between the academic and administrative systems in which both modes are integrated. The unit manager liaises closely with the academic departments and is a member of the Faculty Teaching and Learning Committee. The quality of the distance programmes is monitored via actions that are taken on research reports and matters that come up and are resolved at weekly operational meetings.

**Discussion**

According to Tait (2015, p. 3), the aim of the “student's whole experience of study” framework was to “establish a framework of understanding for establishing goals for student success, and means to monitor and improve it”. Thus, the discussion of the findings in this section focuses on how a distance education provider is working towards this ideal.

**Pre-study information, advice, guidance and admission**

Institutions make their programmes known to potential clients by diverse means. Apart from its official website and student walk-in service, the institution makes use of marketers that cover a large part of the country. The aim is to open up the institution's programmes to those who would otherwise not have been able to enrol for conventional programmes. Subsequently, the distance programme is serving its purpose of reaching both older adults and the younger generation of learners. However, older students often need more support on the use of technology than younger students. Other research findings support the emergence of this new demography of distance education students (University of South Africa, 2017). The studies of Owusu-Boampong and Holmberg (2015, p. 53) on some European countries generally confirm that “flexibility (i.e. the possibility of balancing study with career, career prospects, family and other responsibilities) is a strong motivation for choosing distance education”.

However, according to Tait (2015, p. 5), “to avoid individual disappointment and high dropout statistics”, information for potential students should be very clear in all its ramifications. This is because institutions are often torn between “student acquisition, business growth and the ethics of supporting clients” (Tait, 2015, p. 5). Although participants affirmed the clarity of the information they had received, they preferred dealing with marketers than with university staff. This could be because potential students often have face-to-face contact with marketers, while phoning the university is more expensive. The data emphasised the need to provide an adequate number of staff members so as not to discourage potential students. This links up with institutions risking their reputation.
through "word of mouth". Kundu and Sundara Rajan (2017) aver that the latter strongly influences the choices consumers make and is connected to the high involvement of today’s consumer over the internet. In addition, the rate of internet penetration is drawing institutions to the use of social media, but Haida and Rahim (2015) indicate more studies still need to be conducted on this area.

**Curriculum or programme design for student success**

The curriculum goes beyond a syllabus and includes how it should be taught and how the teaching-learning process itself will be effected (CHE, 2014). According to Tait (2015), curriculum relevance and effective learning design are key in determining student success. This is because the former motivates students, while – according to Tait – the latter mitigates dropout by encouraging student engagement. Unfortunately, poor throughput rates have been a contentious issue in distance education for some time. Among the reasons for this trend is poor programme design (CHE, 2014). Although distance education is not new to technologies, gadgets should focus more on improving teaching and learning (CHE, 2014).

**Intervention at key points and in response to student need**

Because of the high number of students involved in distance education, providers need to be creative in planning programme interventions. According to Tait (2015, p. 7), "intervention has been practised in many open distance e-learning systems for many years, and has been demonstrated to improve student completion".

In his framework, he identifies three levels of intervention: post registration and review of readiness to start, in course and through qualification. At the first level, the programme is web-dependent. Owning a laptop is, therefore, one of the requirements, while students without one can purchase a laptop through a payback scheme external to the institution. In addition, compulsory ICT training before the start of the programme ensures student readiness. The second level involves two additional contact sessions: module orientation and module consolidation. Although Van Zyl and Spamer (2013) aver most distance students may still do well without attending contact sessions, Boelens et al. (2015) found this intervention to be of particular benefit to weaker students. This study found that although the information on diverse interventions is accessible, some students were failing to avail themselves of such opportunities. This brings to the fore the argument of Mpofu (2016) regarding students’ roles in enhancing learning opportunities. While current technologies make the provision of diverse interventions possible, many students still struggle with lack of competence in ICT, unfamiliarity with web-based discussions and the high cost of network connections (Owusu-Boampong & Holmberg, 2015). Therefore, providers need to put technology in place that is relevant to their students’ context to ensure the scalability of their success rates (Maritim & Getuno, 2018).

**Assessment to support learning and to judge achievement**

The curriculum planning process involves deciding on the assessment strategy with evidence that the programme outcomes are being met (CHE, 2014). There is evidence that the institution uses both formative and summative assessment to support student success. Tait’s framework (Tait, 2015) confirms that both have been used for several years and that 21st-century technologies have further enhanced the support of student engagement and enabled the diagnosis of learning at shorter intervals. However, participants’ challenges with assignments are not very different from those found by other researchers in distance programmes. For instance, Haghighi and Tous (2014, p. 67) and
Owusu-Boampong and Holmberg (2015) found that students were frustrated by unclear instruction, lack of personal feedback and untimely feedback. Therefore, the CHE (2014) advocates for clear instruction on what students should do. This should include tasks that build on their background knowledge. There should also be appropriate feedback and commentary on activities that enable students to experience a form of interaction and discussion that normally takes place in lively classrooms, and self-assessment opportunities, as students mostly study on their own through their learning material. This links back to making the assessment part of the entire programme design. Although new technology affordances make assessment easier, the CHE warns that they should be used carefully “without losing sight of the basic requirements for an effective assessment strategy” (CHE, 2014, p. 54).

**Individualised and personalised systems of support to students**

Sánchez-Elvira and Simpson (2018, p. 3) opine that investing in this kind of support increases students’ “intrinsic motivation, thus promoting integration and retention, and enhancing their academic performance, satisfaction and wellbeing”. Such services involve “student-tutor and student-student communication through email and electronic conferences, social clubs and networks, student peer support through Facebook, wikis and other similar crowd-based services” (Tait, 2015, p. 8).

In this study, both online and offline support systems were in use. Similarly, as in this study, several studies have attested to the extensive use of SMSes for both administrative and academic purposes (Abu Ziden et al., 2017). Others have found that students prefer to use WhatsApp for both purposes due to cost (Cetinkaya, 2017), which the institution is yet to tap into. In addition, the number of participants with a disability in this study, and as evidenced in other distance institutional documents, is minimal. Providers need to consider reaching out more to such students. Other areas of concern identified in this study need further improvement. This includes the call centre services, responses to student queries and funding. These areas need attention to support students better (Owusu-Boampong & Holmberg, 2015). Although regarded as expensive (Tait, 2015), carefully integrating these services from the beginning of a programme can have a positive return on investment (Simpson, 2016).

**Information and logistical systems that communicate between all relevant participants in the system**

Distance education is no stranger to the combination of information and logistical systems, which have been made possible by the LMS in use by institutions (Tait, 2015). Linked to this is the growing use of learner analytics. According to Tait (2014, p. 14), “the new practices of learner analytics are being developed as the back-system to diagnose and identify when and how learners might need support, deriving from learning within, not separate from, the module or programme”. Nonetheless, Tait (2015) observed in the study among members of the ICDE that this is still a promise rather than an achievement because not all institutions are taking maximum advantage of it.

**Managing for student success**

Commenting on the earlier work of Moore and Kearsley (1996, p. 5) on the system view of distance education as comprising diverse component processes, the CHE (2014, p. 65) reiterates that this “provides a holistic picture of the various elements and how they interrelate”. For Tait (2015, p. 9), managing for student success involves “putting the learner at the heart of the system”. A key to enabling this process is to ensure the quality of all aspects of the programme, something which distance education is continually grappling. This consideration, among others, means making sure that “the institution’s mission and aims
are clear and known to all; putting in place well thought-out systems, fool-proof and communicated to everyone; and making clear to everyone who is responsible for what” (CHE, 2014, p. 72).

Guidelines on the Use of Tait’s Framework

Based on the findings from this study, the author is suggesting some guidelines on the use of Tait’s framework (Table 5).

Table 5: Guidelines on the Use of Tait’s Framework

<table>
<thead>
<tr>
<th>Key elements of Tait’s framework</th>
<th>Suggested indices</th>
</tr>
</thead>
</table>
| Pre-study information, advice, guidance and admission | - Marketing strategies relevant to the context  
- Clear information regarding the programme to prospective students  
- Guidance on choice of programme  
- Clear line of communication (e.g. staff students could liaise with) |
| Curriculum or programme design for student success | - Programme aligned to institutional mission and vision  
- Programme aligned to national and student goals  
- Built-in student support  
- Technologies relevant to student context and the future plan of the institution (pull and push approach)  
- Training of staff and students regarding the use of technologies  
- Programme evaluation that involves all stakeholders |
| Intervention at key points and in response to student need (pre-study, in course and through qualification) | - Pre-study  
  a. Clear line of communication  
  b. Review of readiness (Survey to measure student readiness and to know what to improve on and how to further support students)  
  - In course  
  a. Call centre  
  b. Contact sessions/Tutoring (online/face-to-face depending on the context)  
  c. Learner analytics on first assignment and mid-module  
  d. Exam preparation: Contact sessions/Tutoring (online/face-to-face depending on the context)  
  - Through qualification  
  a. Guidance on next-module choice (as applicable) and qualification planning |
| Assessment to support learning and to judge achievement | - Relevant formative and summative assessment  
- Built into the programme design, not an after-thought  
- Training of staff (tutors) on effective feedback  
- Administrative and academic monitoring on timeous feedback |
| Individualised and personalised systems of support to students | - Call centre  
- Communication (e.g., tutor-student and student-student)  
- SMS  
- The use of social media (WhatsApp, Facebook, YouTube)  
- Quick response to student query  
- Funding  
- Students with disabilities |

(Continued)
Table 5: (Continued)

| Information and logistical systems that communicate between all relevant participants in the system | - Management Information System (MIS) with diverse levels of accessibility  
- Learner analytics (information to improve practice) |
| --- | --- |
| Managing for student success | - Total Quality Management  
- Communication of mission and vision to all stakeholders (including academic and administrative staff members)  
- Communication of institution's stance on quality and how this relates to all staff  
- Management of key staff with clear line of responsibilities  
- Operational meetings with key staff members with timelines attached to actions  
- Periodic evaluation of all structures – short-term and long-term  
- Periodic institutional audit |

As earlier indicated, the framework can be adapted to any context. In summary, the indices reflect the relevance and importance of the involvement of all stakeholders in the process of supporting students. In addition, they serve as a means to monitor, evaluate and improve on institutional structures.

**Impact of the Research on Practice and Conclusion**

Effective student support that results in positive throughput rates has been an ongoing battle for distance education providers. Although there is consensus on the importance of researching the phenomenon, there is sparse evidence that the research findings influence practice. Distance education providers will benefit immensely from paying attention to Tait’s framework in its totality to understand the challenges and to address them effectively. For instance, the application of the framework to this study has helped to bring to the fore the areas of strength (e.g. curriculum/programme design for student success) and weakness (e.g. more needs to be done in the area of intervention at key points and in response to student need) in the programme at the unit of study.

As at the time of writing this paper, the unit has begun to review its policy and to put measures in place to address the shortfalls highlighted in this research. The researcher organised a colloquium to which she invited a distance education expert on quality management and academic and non-academic staff members, including management. The findings of the study were presented, while the guest expert gave a presentation and facilitated a discussion on total quality management in distance education. Using the guidelines indicated in Table 5, a longitudinal study has been put in place to monitor the impact of Tait’s framework on practice.

**Acknowledgement**

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Student support service excellence evaluation: Balancing the Iron Triangle of accessibility, cost-effectiveness and quality?

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Abstract

Recently, the University of South Africa widened access to academic facilities and services at one of its study centres. Although this is laudable and demonstrates a commitment by the university towards its students, it raises these three concerns (1) What is the occupancy rate of the facilities? (2) To what extent are these improved facilities cost-effective? (3) What is the quality of the services at these facilities? A modified iron triangle was employed to analyse and determine accessibility, cost-effectiveness and the quality of the facilities. Data mining techniques involving descriptive analysis indicated that the most utilised service facilities were the computer laboratories and the least utilised was the study space. Moreover, perceived service quality of the facilities was rated good to excellent by the majority of the respondents. The modified iron triangle was found to be useful in helping us understand Student Support Excellence Project’s (SSEP) improvements at the identified study centre.

Keywords: Open Distance Learning (ODL), study centres, service quality, service facilities, Iron Triangle

Introduction

Many open distance learning (ODL) universities such as the University of South Africa (UNISA), the Open University in UK and the Central Queensland University in New Zealand have established learning spaces known as study centres to allow students to have access to a variety of support services. Student support services, defined as a cluster of facilities and activities that makes the learning process easier and more interesting for students (Krishnan, 2012) form an integral part of ODL. Past research (Robinson, 1995; Tait, 2003) and the most recent (Zuhairi et al., 2019; Ouma & Nkuyubwatsi, 2019; Makoe & Nsamba, 2019) emphasizes the importance of support services in ODL. Zuhairi et al. (2019) note that support services motivate students to engage in their learning, and learn autonomously and independently (p. 2).

Support services for undergraduate and postgraduate UNISA students include student registration; technical support; counselling and career development support; assignment management, face-to-face and online tutorial classes, as well as academic literacies, which include academic writing and numeracy. These support services are available online and face-to-face, and are provided at all study centres, located in different provinces in South Africa: Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, Free State, North West and the Western Cape; and one in Ethiopia. Facilities found in these centres include libraries, computer laboratories and study spaces, which are rooms that students use for discussion and study purposes. These centres are equipped with digital and information technologies, which include assistive technologies for students with disabilities. Most of them are crammed on most days, especially on weekends and during examination periods (Nsamba & Makoe, 2017). While on a visit to one of these centres, we observed that students utilise all spaces available –unoccupied rooms, passages and open lobbies.
Most users come from under-resourced communities and schools, and they are in dire need of these facilities to support their learning. Equally important is the fact that these centres give the students a sense of belonging to a community of higher education (Higher Education Quality Committee (HEQC), 2010).

As demographics shift to student communities comprising school-leavers and young adult learners, thus changing the landscape of distance education, study centres are becoming platforms to establish collaborations, study groups and networks. Of interest to us as researchers is to understand the utilisation and quality of these student support facilities and services provided because little research has been conducted in this area. The study’s focus is the Rustenburg study centre in North West Province. The Rustenburg study centre serves approximately 12000 registered students, from Rustenburg town and the surrounding villages.

In 2017, UNISA commissioned a project titled “Student Support Excellence Project” (SSEP) at the Rustenburg study centre, with the purpose of improving access to academic facilities and services, in response to students’ demands for resource accessibility. The project provided for more study spaces, and longer opening hours for three computer laboratories (Labs) and the Library; and introduced Saturday studies. Visiting hours were extended from 07h45 to 20h00 on weekdays; and from 08h00–16h00 on Saturdays. The Library, which has the seating capacity of 40, offers services such as information literacy training, electronic information resources and information support searches; and the Labs which offer services such as digital skills training, technological support, access to the LMS for facilitation of online assessments and online modules, have the capacity of 59. Additionally, four classrooms for study purposes with the seating capacity of 35 each, were provided.

Widening access to learning facilities and resources for longer opening hours is laudable and demonstrates a commitment by the university towards its students. Power and Gould-Morven (2011) refer to this as the student-administration interface, resulting in “a pull response to a student-initiated accessibility push” (27). However, this raises three concerns summarized in these questions: (1) What is the occupancy rate of the facilities? (2) To what extent are these improved facilities cost-effective? (3) What is the quality of the services at these facilities? The purpose of this study, therefore, was to analyse the SSEP project improvements in order to assess the extent to which the support service facilities were utilised and determine their quality and cost-effectiveness. Data mining techniques were used to uncover information related to service facility utilization and quality. Power and Gould-Morven’s (2011) iron triangular perspective was employed to analyse accessibility, cost-effectiveness and the quality of the facilities.

The Iron Triangle Concept

The Higher Education Iron Triangle is a visual triangular model representing three factors of access, cost and quality. The iron triangular concept, whose origins can be traced from the field of project management, theorises the relationship and interactions among access, cost and quality. The model argues that these three factors are bonded and interdependent, and any change in one of them affects the other two, either individually or collectively. In higher education (HE), the factors of the triangle are considered to represent three key areas of university course delivery, namely; access, cost and quality (Daniel et al., 2009). The triangle can be used as criteria to manage access, costs and quality in HE. However, this concept is not seen as workable in its original form. Lane (2014, p. 2) cautions that “there is little scope to alter these factors advantageously” as improving one will worsen the others. This is corroborated by Immerwahr et al.’s (2008) study.
exploring the perspectives of university Chancellors and Vice Chancellors in United States (US). The majority of the participants indicated that any improvements to accessible and high-quality HE would escalate costs.

It is our observation that the unbreakable nature of the HE iron triangle factors has led to the development of several versions in the last decade. Daniel et al.’s (2009) proposed version is an iron triangle whose vectors (sides) can be altered for improvements; thus “breaking out of the iron triangle” (Power & Gould-Morven, 2011). Their proposition is that the economies of scale of ODL teaching and learning model can help break the economic iron triangle that applies to campus-based institutions. In addition, this model deals with tradeoffs in the allocation of resources in an economically minded approach, thus minimising any conflicts among the three factors of the triangle. The concept of tradeoffs is regarded as a central operations strategy that forms the foundation of managers’ approach to process improvements within organisations (Da Silveira & Slack, 2001). To Power and Gould-Morven (2011), these tradeoffs should be acceptable to all stakeholders of ODL: Administrators, staff and students.

Extensions of Daniel et al.’s (2009) ODL triangle of access, cost and quality have been proposed in the literature (Power & Gould-Morven, 2011; Lane, 2014; Mulder, 2013). Of interest to this study is Power and Gould-Morven’s (2011) modified triangular concept of three priorities. These authors modified the ODL triangle by removing the term “vectors” and replacing it with the term “priorities” at the corners of the triangle. Further modification included renaming two of the factors: access and cost and associating each with a stakeholder group. Cost was renamed cost-effectiveness priority and associated with the administrative staff stakeholder group. Access was renamed accessibility and defined as increasing access to courses, and was associated with the student stakeholder group; because students are said to be the most concerned about accessibility to educational resources. The only factor that corresponds to Daniel et al.’s (2009) triangle is quality. However, it was also modified by being associated with faculty, because faculties are said to be defenders of quality (Power & Gould-Morven, 2011, p. 25).

The priorities in this version indicate how stakeholder groups interact as they “advance their agendas” (p. 26). Each group possesses the “push” and “pull” power. The push power is understood to mean putting forward some demands; and the pull power refers to responding to those demands. For example, when one stakeholder group pushes for improvements in teaching or learning, other stakeholder groups may respond favourably, if all priorities are aligned. Put succinctly,

A situation is created whereby one stakeholder group will respond to the priority of another, but only insofar as such a response does not impede the pursuit of their own priority. Ideally, this dynamic would lead to the state of equilibrium and the balancing of priorities between two stakeholder groups. However, should increasing accessibility lead to a state of worsening quality, then these two stakeholder groups would have overtly non-aligned priorities, resulting in a lower probability of pull at the faculty end (Power & Gould-Morven, 2011, p. 26).

The intention of Daniel et al.’s (2009) and Power and Gould-Morven’s (2011) triangular perspectives is to strike a balance that will not affect any one of the factors or priorities negatively. However, in contrast to Daniel et al.’s (2009) ODL triangle, Power and Gould-Morven’s (2011) version deals with the behaviours of specified stakeholder groups with the greatest stake in accessibility, cost-effectiveness and quality, as relate to specific provision of ODL programs.
Figure 1: Iron Triangle

Figure 2: Daniel et al (2009) Triangle

Figure 3a: Power & Gould-Morven’s (2011) (student push and staff pull alignment)
Figure 1 shows the HE iron triangle of equal sides. Figure 2 shows Daniel et al.'s (2009) triangle that is flexible and can be adjusted; and Figures 3a and 3b depict Power and Gould-Morven's (2011) modified triangle. Figure 3a shows student push and staff-pull alignment; and Figure 3b shows student push and staff push-back non-alignment.

Power and Gould-Morven's (2011) triangle was used in this study to analyse and determine accessibility, cost-effectiveness and the quality of the improved service facilities at the identified study centre. This version is appropriate for this study because it highlights interactions among the priorities and their stakeholder groups. ODL is a high involvement service system, with multiple service interactions of students, administrators and staff (Makoe & Nsamba, 2019). Understanding stakeholder group interactions and their priorities is a means to improved service delivery.

Literature Review

There are limited empirical studies in the literature focusing on the interactions of the original Iron Triangle’s three factors: access, cost and quality or Power and Gould-Morven's (2011) version. Earlier research (Immerwahr et al., 2008) that explored views of university presidents and the general public about educational demands in US public colleges and universities, has helped illuminate the nature of these factors. The study highlighted conflicting views regarding issues of access, cost and quality. The college and university presidents believed that the bond among these three factors was unbreakable and any change in one of them would impact the other two. They suggested that HE costs were the responsibility of governments and parents. Conversely, the public surveys indicated that institutions could make HE accessible to “more students without compromising quality or increasing tuition” (p. 33). Contrary to the presidents’ view, the public participants indicated that there was no unbreakable relationship among the three factors. 56% believed that quality could be maintained at a low cost; and four in ten people believed that mismanagement and waste were driving up costs.

A more recent qualitative study employed the Iron Tringle to understand access to quality postgraduate ODL education at Indira Ghandi National Open University (IGNOU), in Ethiopia (Woldeyes, 2016). The study’s premise was that access to distance education was cost-effective; therefore, it was imperative to understand aspects of distance education quality of the courses and support services. The study’s findings indicated that the quality of these services was perceived as satisfactory by the majority of the student participants. However, some students were dissatisfied with the quality of support services such as feedback. Woldeyes (2016) further observed that the cost of reproducing and distributing elearning study material was minimal, which made ODL cost-effective.
and accessible for students. This observation corroborated earlier studies (Hulsmann, 2004; Gaba, 2004; Rumble, 2003) that found the system of distance education cost-effective. However, we are beginning to see rapid increases in higher education costs, which affect ODL institutions as well. Gaba and Li (2015) noted that the ODL system in countries like India and China are experiencing decreases in government funding, thereby shifting the responsibility to students.

Woldeyes’s (2016) research has highlighted the bond that exists among quality, cost-effectiveness and accessibility; and has also indicated the importance of these factors in ODL. The preceding discussion is based on studies that have not applied the iron triangle, because there is limited research in this area. Instead they have examined access/accessibility, cost/cost-effectiveness and quality separately (Apuke & Iyendo, 2018; Mawere & Sai, 2018; Onifade et al., 2013; Salubi et al., 2018; Becker et al., 2017; Olajide & Adio, 2017). We believe that this discussion will help the reader visualise a triangle representing access/accessibility, cost/cost-effectiveness and quality. In addition, the findings of these studies will help us in understanding how various stakeholder groups behave in their sphere of influence. The primary participants in the studies were the student stakeholder group. This group visits libraries for personal study and research, and to access the computer laboratory, Wi-Fi and other resources. The library use ranges from high, moderate to low, with most studies reporting low library use. A contrast was found in Becker et al.’s (2017) study which had observed an increase of library visits over the past few years. Goodall and Pattern (2011) define low use as: (1) Having less than five visits to the Library; (2) logging in to the University’s electronic resources collection less than five times; or (3) borrowing less than five books, during an academic year.

A study on the utilisation of library support services and resources by postgraduate students (Onifade et al., 2013) revealed that the library was occasionally used by the majority of these students (47%), with a mere 10.5% of the students using the library daily; the most utilised resource being the Internet facility. 14% of the students visited the library to study for examination. The authors’ observation was that the majority of postgraduate students at the institution were full-time workers who had to combine work and study, hence their occasional library use.

Similarly, a study involving 390 students from two South African universities (Salubi et al., 2018) indicated that the majority of the respondents rarely or never used the library databases and e-resources, including e-books; and did not utilise information literacy training, which was recorded as the least used service, the most used being the Wi-Fi. The study showed that 44.3% of the students visited the library occasionally, 27.3% almost daily and 15.7% never visited the library. A further revelation was that 83.5% of the students visited the library to access Wi-Fi, not e-resources or databases. The study also indicated that 63% of the respondents always use computer labs, and 31.3% use the discussion room.

Studies have also evaluated levels of satisfaction in using library services and resources. Becker et al. (2017) evaluated students’ use of library facilities, as well as service satisfaction and accessibility in a South African university of technology. Data indicated that 72% of the students were satisfied with library facilities and 62% with the computer facilities, “despite the long queues often experienced by students waiting to use the computer facilities” (p. 17); and 80% perceived the library as comfortable and inspiring. On the contrary, a more recent quantitative study (Mawere & Sai, 2018) found that students were dissatisfied with most of the library facilities and resources of their university. Dissatisfaction was caused by lack of access to e-resources and relevant materials, inadequate reading space and unpredictable power supply. Poor library staff-student relationship due to untrained staff and low bandwidth were also cited as contributory factors to non-utilisation of library resources. Similar results were reported by Olajide and Adio (2017).
and van der Walt’s (2019) study uncovered service quality gaps between library users’ expectations and perceptions.

Dissatisfaction regarding inadequate internet access in three universities in Nigeria were also reported by Apuke & Iyendo (2018). This study found that 86.8% of students had inadequate Internet access, while 13.2% reported having adequate access. This is in contrast with India and China, whose citizens “enjoy” good infrastructure, such as Internet, due to fast industrial development (Gaba & Li, 2015).

It is worth noting that the student stakeholder group is usually seen “as a more disembodied influence” (Power & Gould-Morven, 2011, p. 25) than other groups. In ODL, this situation could be worse due to distance. Power and Gould-Morven (2011) have indicated the importance of integrating all the groups into an overall strategy. Makoe and Nsamba (2019) assert that this could be achieved by evaluating the quality of offerings or support services from students’ perspective.

Quality is very critical in ODL, and as noted by Gaba and Li (2015), courts in India have declared that ODL is not at par with conventional universities due to deterioration in quality assurance practices. ODL universities are making efforts to quality assure their offerings and services, and research conducted on service quality include Uppal et al. (2017); Makoe and Nsamba (2019); Dursun et al. (2014). In addition, service quality dimensions have been tested and recommended by researchers such as Gathoni and van der Walt (2019), and Makoe and Nsamba (2019). Gathoni and van der Walt (2019) have suggested reliability, access and collection as appropriate to assess library quality, whilst Makoe and Nsamba (2019) proposed the following modified dimensions for ODL support service quality:

- **Tangibles**: adequate and appropriate physical facilities: study centres, equipment; friendly personnel
- **Reliability**: the ability to perform the desired service dependably, accurately, and consistently; keeping promises to match to the goals; handling complaints; solving problems and understanding users’ needs
- **Delivery**: feedback; guidance on learning guidance on assignment; access to academic and administrative staff
- **Assurance**: the knowledge and competence of the staff; possession of necessary skills; staff courtesy and their ability to inspire trust and confidence (p. 4)

Quality has also been linked to satisfaction as in Hsu et al. (2014) and in a more recent study (Gathoni & van der Walt, 2019) which examined students’ perceptions of library service quality dimensions (Parasuraman et al., 1988) and found gaps in the services.

The final important concept in this review is cost-effectiveness priority. As suggested by Power and Gould-Morven (2011) cost-effectiveness is a more significant indicator of quality in the Iron Triangle than the cost factor. There are limited studies on cost-effectiveness of ODL student support facilities and services. Research in this area had focused on online learning (Jung, 2005); e-learning (Hulsmann, 2004) and the cost of the ODL system (Gaba & Li, 2015; Gaba, Panda & Murthy, 2011; Rumble, 2003). When addressing the issue of cost-effectiveness evaluation, Gaba (2004) who has written extensively on issues of costs in ODL (Gaba & Li, 2015; Gaba et al., 2011), suggested that cost-effectiveness analysis is appropriate because it addresses inputs in terms of the level of achievement of the objectives. In addition, this technique is used to compare the cost of a programme or project relative to its expected benefits, when it is difficult to monetise the outcomes (Cellini & Kee, 2015; Johnson, 2014). This gives credence to Power and Gould-Morven’s (2011) use of the term cost-effectiveness.
In this study, the cost-effectiveness priority is critical because it examines whether the outcomes of the SSEP were achieved, and whether the administrators received their money’s worth. This is very imperative because the SSEP was borne out of a push by the student stakeholder group.

**Research Processes**

**Data Collection**

This study used Data mining and descriptive analysis to understand accessibility, cost-effectiveness and quality of the improved student support facilities and services. Quantifiable information from students’ information dataset, representing quality and utilisation of facilities and student support services was extracted.

The target population consisted of all students regardless of age, gender, field and level of study, who visited the Library, Computer Laboratories and Study Space, after working hours. The normal working hours in South Africa is between 07:00 and 16:00. Data were collected from 01 July 2017 to 31 May 2018.

Three data collection and analysis processes were followed:

1. Data showing the occupancy of the facilities were mined and analysed. Each student who utilized the services of any of the three facilities signed an attendance register. The data (from the attendance register) represented accessibility priority.
2. Service quality data were mined from a questionnaire that was distributed to the whole population to evaluate the service facilities. The questionnaire measured the following three attributes on a five-point rating scale –“Excellent”, “Good”, “Average”, “Poor”, “Very Poor” and “No Answer”:
   - The level of knowledge of the staff that assisted you.
   - Friendliness of the staff that assisted you (including security and cleaning staff).
   - The cleanliness of the area you were visiting.
3. To understand and determine the cost-effectiveness of the three facilities, occupancy rate was calculated. In this study, occupancy rate means the extent to which services and facilities were utilised. It should be highlighted that utilisation of facilities and services was dependent upon the facilities accessibility.

**Data Analysis**

The first part of the analysis is based on visits to the three facilities: The Labs, the Library and the Study Space. This is intended to understand service facility monthly use and average occupancy.

The second part of the analysis focuses on service quality of the facilities. The three stakeholder groups relevant in this analysis are: Administrators, staff (faculty) and students.

**Service Facility Use and Occupancy**

Data indicated that within a period of eight months, from 01 July 2017 to 31 May 2018, students’ use of different support facilities varied. The Labs had the highest number of total attendances (451), the Study Space had 326 while the Library had the lowest number of attendances (217). Average % occupancy for the Labs was 96%, while that for the Study Space was 68% and 39% for the Library. Occupancy is the number of students who attended in relation to the number of
spaces available. Table 1 presents the break-down of service facility monthly use. The greyed-out cells indicate unoccupied facilities during that month.

### Table 1: Service Facility Monthly Use

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th></th>
<th>2018</th>
<th></th>
<th>Total</th>
<th>Average per month</th>
<th>Capacity</th>
<th>% Average occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
</tr>
<tr>
<td>Lab</td>
<td>110</td>
<td>125</td>
<td>32</td>
<td>70</td>
<td>4</td>
<td>55</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Study</td>
<td>72</td>
<td>54</td>
<td>32</td>
<td>32</td>
<td>28</td>
<td>46</td>
<td>42</td>
<td>20</td>
</tr>
<tr>
<td>Library</td>
<td>1</td>
<td>82</td>
<td>10</td>
<td>10</td>
<td>41</td>
<td>10</td>
<td>3</td>
<td>60</td>
</tr>
</tbody>
</table>

| Total | 183  | 261  | 64   | 112  | 4    | 10   | 124  | 84   | 45   | 107  |       |            |          |        |

**The Computer Labs**

The occupancy data show that the Labs were the most frequented and most utilised of the three facilities, at 96% occupancy. An average monthly facility utilisation of 56 had been recorded, whereas available capacity is 59, which gives percentage average occupancy of 96% (56/59= 96 %). Services offered in these facilities include digital skills training, technological support and the LMS; which makes this area the busiest of the whole study centre.

**The Library**

The second highest utilised facility is the Library, with 68% average occupancy. An average monthly facility utilisation of 27 was recorded, whereas the available capacity is 40, which gives percentage average occupancy of 68% (27/40= 68 %). The Library offers services such as information literacy training, electronic information resources, and support on information searches. The largest attendances were 82 visits in August 2017 and 60 in May, 2018.

**Study Space**

Data show that the least utilised facility is the Study Space, consisting of three classrooms. An average facility utilisation per month is 41, whereas the available capacity is 105, which gives percentage average occupancy of 39% (41/105= 39 %). This implies that on average two of the classrooms remained unoccupied for a period of 8 months. Data also indicate that during September and October 2017; and February and May 2018, the average occupation was as low as 28% (112/4=28%). This result is largely consistent with Salubi et al. (2018) and Onifade et al. (2013) who indicated that 31.3% and 14% of the students used study rooms respectively.

**Quality**

**The Computer Labs Quality**

Data as summarised in Table 2 show that an average of (970+337)/1350) 97% of the respondents over an eight-month period rated the quality of the Labs as good and excellent. 72% of respondents
rated “the Level of knowledge from staff” as excellent, and 25% rated it good. 70% of the respondents rated “Friendliness of staff” as excellent and 27% rated it good. The cleanliness of the Labs was rated as excellent by 74% of the respondents and good by 23% of the respondents.

Table 2: Computer Labs Quality

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Very poor</th>
<th>No Answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of knowledge from</td>
<td>324</td>
<td>112</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>451</td>
</tr>
<tr>
<td>staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendliness of staff</td>
<td>315</td>
<td>121</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>451</td>
</tr>
<tr>
<td>member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The cleanliness of the</td>
<td>331</td>
<td>104</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>448</td>
</tr>
<tr>
<td>area you were visiting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>970</td>
<td>337</td>
<td>25</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>1350</td>
</tr>
<tr>
<td>Average Total Percentage</td>
<td>72%</td>
<td>25%</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

The Library Quality

Data show, as summarized in Table 3, that an average of ((460+183)/676) 95% of the respondents over an eight-month period rated the quality of the Library as excellent and good. 68% of the respondents rated “the Level of knowledge from staff” excellent, and good by 27%. “Friendliness of staff” was rated excellent by 67% of the respondents while 29% rated it good. The cleanliness of the Library was rated excellent by 70% of the respondents and good by 27%.

Table 3: Library Quality

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Very poor</th>
<th>No Answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of knowledge from</td>
<td>153</td>
<td>57</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>228</td>
</tr>
<tr>
<td>staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendliness of staff</td>
<td>149</td>
<td>65</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>223</td>
</tr>
<tr>
<td>member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The cleanliness of the</td>
<td>158</td>
<td>61</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>225</td>
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<tr>
<td>area you were visiting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>460</td>
<td>183</td>
<td>20</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>676</td>
</tr>
<tr>
<td>Average Total Percentages</td>
<td>68%</td>
<td>27%</td>
<td>3%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

The Study Space Quality

The data as summarised in Table 4 show that an average of ((444+347)/951) 83% of the respondents over an eight-month period rated the quality of the Study Space as excellent and good. 47% of respondents rated “Level of knowledge from staff” excellent whereas 36% rated it good. “Friendliness of staff” was rated excellent by 43% of the respondents and as good by 38%. The cleanliness of the Study Space was rated excellent by 49% of the respondents and good by 32%. Table 4 shows the summary of the Study Space data.

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Table 4: Study Space Quality

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Very poor</th>
<th>No Answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of knowledge from</td>
<td>151</td>
<td>124</td>
<td>24</td>
<td>1</td>
<td>3</td>
<td>14</td>
<td>317</td>
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<tr>
<td>staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendliness of staff</td>
<td>137</td>
<td>120</td>
<td>31</td>
<td>5</td>
<td>6</td>
<td>18</td>
<td>317</td>
</tr>
<tr>
<td>member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The cleanliness of the</td>
<td>156</td>
<td>103</td>
<td>34</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>317</td>
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<tr>
<td>area you were visiting</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>444</td>
<td>347</td>
<td>89</td>
<td>11</td>
<td>16</td>
<td>44</td>
<td>951</td>
</tr>
<tr>
<td>Average Total Percentages</td>
<td>47%</td>
<td>36%</td>
<td>9%</td>
<td>1%</td>
<td>2%</td>
<td>5%</td>
<td></td>
</tr>
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</table>

Discussion

The purpose of this study was to analyse the SSEP’s improvements implemented by UNISA at one of its study centres. Three concerns were raised: (1) What is the occupancy rate of the facilities? (2) To what extent are these improved facilities cost-effective? (3) What is the quality of the services at these facilities? The study used Power and Gould-Morven’s (2011) iron triangular perspective consisting of accessibility, cost-effectiveness and quality priorities as criteria to understand how these priorities were managed at the following facilities: Labs, Library, and Study Space. The results of this study show that satisfactory levels of accessibility as demanded by the students was achieved; and the perceived service was found to range between good and excellent. The study also found that two facilities have low levels of occupancy, which suggests that they are not cost-effective. These results support Power and Gould-Morven’s (2011) model. As depicted by this model, stakeholder groups interact to advance their priorities. These interactions can lead to alignment or non-alignment of priorities, depending on the direction of their push or pull powers. The results support this logic. The study found that student stakeholder group’s push for improved accessibility to facilities and services led to high levels of accessibility to services. In addition, the quality of these services was highly rated, which is an indication of students’ satisfaction with the services. Similar to Power and Gould-Morven’s (2011) model, certain priorities are aligned, and others are not aligned. The discussion below is based on the three questions asked in this study.

The occupancy rate and the cost-effectiveness of the facilities

The Computer Laboratories

The occupancy data show that the Labs were the most frequented and most utilized of the three facilities, at 96% occupancy. This high percentage also indicates the Labs’ accessibility. Services offered in these facilities include digital skills training, technological support, and the Learning Management System (LMS), which makes this area the busiest of the whole study centre. Although the occupancy rate looks satisfactory, the Labs at this study centre are not operating at full capacity and there are no long queues, in contrast to the first author’s observations of long queues to computer labs in other study centres she visited. (The first author facilitates workshops at regional centres). In support, Nsamba and Makoe’s (2017) research indicated that computer rooms are the most utilized facilities at study centres. To corroborate, Becker et al. (2017) reported the long queues experienced by university students waiting to use their computer facilities. A more recent study (Salubi et al., 2018) has reported that 63% of the respondents indicated that they always use computer labs. These data
are consistent with earlier research (Saadon & Liong, 2011) that found that more than 95% of the respondents used the computer lab at least once a week.

We find this utilisation acceptable and cost-effective due to its high occupancy. We can conclude that this is an acceptable threshold (equilibrium). However, what is unclear and surprising are the non-attendances in January and April 2018, given that these facilities are the busiest, while the library and the study space were occupied during these months. Even more surprising is that the quality data do not suggest indications of dissatisfaction from the student stakeholder group regarding this.

The Library

According to the data, the library is the second highest utilised facility with 68% average occupancy. The library offers services such as information literacy training, electronic information resources, and support on information searches. There was an average of 27 visits per month which translates to 12% of the total visits. The highest number of visits was 82 which constituted 37% in August. Although these results contrast those of Onifade et al. (2013); Olajide and Adio (2017) and Salubi et al. (2018), our view is that these visits are still low. Onifade et al. (2013) indicated that only 10.5% of the students were using the library daily, and 47% occasionally; and Salubi et al. (2018) indicated that the majority of the respondents rarely or never used the library e-resources, and information literacy training.

The low library use suggests that students do not borrow library books or access electronic resources as expected. It also suggests that they make less than five visits to the library, log into the electronic resources less than five times or borrow less than five books (Goodall & Pattern, 2011). This is worrying because this study centre serves approximately 12000 undergraduate and postgraduate students. The likelihood is that many of these students may not be reading and preparing well enough for their studies. As Salubi et al. (2018) indicated, students rarely or never use library resources. This is not cost-effective for UNISA because the library operates for 12 hours on weekdays and 8 hours on Saturdays. Again, these low levels of facility usage are in contrast to students’ demand for increased access to facilities and services.

It would be interesting to see the nature of administrators’ pushback now that a non-alignment of priorities has emerged. This could bring the three stakeholder groups: student, administrators and staff, into conflict because, firstly, low occupancy is not cost-effective and secondly, less reading may suggest less quality of students’ work. To reiterate, concerns have been raised over the years that ODL students’ performance is far lower than that of conventional institutions.

Study Space

Data show that the study space, consisting of three classrooms, is the least utilised facility. This occupancy rate is very low and indicates that on average two of the classrooms remained unoccupied for long periods of time – (8 months). This result is largely consistent with Salubi et al. (2018) and Onifade et al. (2013) who indicated that 31.3% and 14% of their participants used study rooms, respectively.

This is a concern because students’ push for increased access to study spaces resulted into a ‘pull’ of three additional classrooms for study purposes and discussions, which now stand idle. These facilities are not cost-effective because of the low levels of occupancy and long operating hours. This could be another source of conflict among the three stakeholder groups due to non-alignment of priorities. We expect some form of staff and administrator pushback regarding this situation. At this
stage, the staff has the right to demand good quality work from students because they have access to adequate facilities. The administrators on the other hand should be concerned about this low occupancy and should push for adequate occupancy.

The quality of the improved support service facilities and cost-effectiveness

Power and Gould-Morven’s (2011) triangular perspective indicates that the quality priority is the responsibility of university faculty/staff. Different service quality models suggest that service quality should be evaluated by the users themselves. In line with this, the SSEP quality was evaluated from students’ perspective. Quality attributes that measured perceived quality for the three facilities were “Knowledge of staff”, “Friendliness of staff” and “Cleanliness of the area visited”. The overall results indicated that the three facilities were highly rated, which means that the students were satisfied with their service. These results support Power and Gould-Morven’s (2011) assertion that students pull quality when it promotes accessibility. Nsamba and Makoe’s (2017) also found that students award excellent ratings to study centres that provide excellent service. This is corroborated by Woldeyes (2016) who found that good quality of student support services leads to student satisfaction.

In these results, we have observed a point of equilibrium whereby all the three stakeholder groups attain acceptable levels of satisfaction of their priorities. This indicates that acceptable threshold levels can be attained if stakeholders understand their priorities. The results suggest that quality seems to be the only priority that has led to the desired outcomes among the three stakeholder groups. Therefore, thus far, there is an appropriate pull by all the stakeholders.

Recommendations

The results of the study suggest that some stakeholder groups may not be having a clear understanding of their priorities and do not work hard enough to promote or protect these priorities.

The students have access to improved support facilities, and the quality surveys have indicated their satisfaction towards the services. However, the facilities are not adequately utilized. Are students taking these improvements for granted? To prevent non-alignment of priorities, we recommend that each stakeholder group should understand what their priorities are, in order to have acceptable levels of alignment of these priorities. In this case, administrators are responsible for directing activities of the University and must help students and staff achieve their objectives. Students on the other hand have a responsibility towards their studies therefore they should utilize the services provided to them. In the same breath, the staff should organize more face-to-face tutoring support.

The results also indicate that students do not engage in required reading, despite having resources in the library. We recommend that the staff should provide more activities on reading to promote the use of the library and to improve the quality of students’ work. We also recommend more training sessions on how to access library resources.

Our reflections should also glance at concerns that have been raised over the years that ODL students are lonely and unsupported. Our observation is that students visit these centres with the hope of receiving academic support from the staff. We recommend the use of teleconferencing technology to support the students, and the idling facilities could be used for this purpose.

Lastly, a limitation found in the data is that the questionnaire administered in this project did not include many important items that would have illuminated a lot more about the quality of facilities. We recommend that more items be included in this questionnaire to understand other aspects of service quality.
Conclusion
Over the years, scholars have been vocal about the provision of quality support services in ODL institutions. Two variables can be added to this discourse, namely; cost-effectiveness and satisfactory levels of accessibility to ODL facilities and services. Power and Gould-Morven’s (2011) model was found appropriate to understand the management of these three priorities in an ODL environment. We recommend the application of this model in ODL because it recognises tradeoffs and emphasizes the attainment of acceptable levels of satisfaction of students, staff and administrators’ priorities, thus balancing this iron triangle, unlike the notion of breaking the iron triangle. Daniel et al.’s (2009) iron triangle is more suited to comparing campus-based learning with ODL.

The focus of this study was on students’ utilisation of service facilities and their perceptions of these facilities, leaving out other stakeholders such as academic staff and administrators. We suggest that future research should examine the other two stakeholders.

References


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Exploring Student Perceptions as Co-authors of Course Material

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Abstract

Students acting as co-creators of academic material is growing in popularity as a pedagogical approach in higher education. With student engagement and persistence consistently being emphasized for student and institution well-being, educational praxis must foster engaged, high-retention student cohorts. This exploratory research uses a mixed-methods approach to examine the experience of students participating in a first-year course utilizing OER-enabled Pedagogy. Students considered how projects that were open impacted their perception of course engagement, satisfaction, and overall experience. Participants also evaluated their level of concern in sharing attributed academic work. A plurality of students preferred the project using OER-enabled Pedagogy, indicating it increased engagement and skills acquisition. The majority of students were unconcerned about sharing work publicly, even if their names were included. Themes that emerged from interviews included the motivational value of creating work potentially valuable to others, being given agency, and receiving public credit for their efforts.

Keywords: student perception, OER-enabled Pedagogy, Open Pedagogy, student engagement

Engaging students, particularly those in their first year of college, has long been a goal of faculty and staff (Dewey, 2018; Hanover Research, 2014; Roberts & Styron, 2010). Although there are many approaches being utilized to connect with students (Boulton et al., 2019), engagement, particularly within the classroom, is often lacking (Pino-James, 2018; Yacek & Jonas, 2019).

Open Pedagogy is a concept that has been evolving since at least the 1960s and possibly as early as the 1940s (Cronin & MacLaren, 2018; Lane, 2009). Often conceptualized as being a component of Open Educational Practice, Open Pedagogy engages students in the co-creation of course material with the aim of making the educational environment more transparent, meaningful, participatory, and engaging (DeRosa & Robison, 2017; Hegarty, 2015; Wiley et al., 2017). This approach, then, may be particularly beneficial in fostering student agency as agency has been shown to reduce disengagement and play an important role in motivation (Anderson et al., 2019; Baran & AlZoubi, 2020; Seifert, 2004).

“Openness” in education as a framework for research has been plagued by terms with evolving and sometimes contradictory definitions (Baker, 2017; Bozkurt et al., 2019; Cronin & MacLaren, 2018; Inamorato dos Santos et al., 2016; Wiley & Hilton, 2018). The term OER-enabled Pedagogy has been proposed to address the confusion in nomenclature. Specifically, OER-enabled Pedagogy is defined as educational practices that are only possible in the context of the five R’s of Open Educational Resources (Wiley & Hilton, 2018). Thus, a practice labeled as OER-enabled Pedagogy is Open Pedagogy, but less ambiguous in terms of how the creator shared their work and what rights others have in its subsequent use.

To capitalize on the value of openness, a small, private university in the United States evaluated its own first-year experience course where a common reading plan had been utilized since 2003. This reading experience failed to engage students as intended. In order to better engage students and...
begin implementing more sustainably minded assignments, the First Year Studies program chose to implement a project that used OER-enabled Pedagogy.

**Literature Review**

Common intellectual experiences, those in which a student cohort focuses on a shared interdisciplinary theme, have been shown to engage students in deep, high-impact learning (Grant & MacLean, 2018; Kilgo et al., 2015; Kuh, 2008; López, 2013). However, it may not only be the experience itself but also its structure that impacts student impression of assignment value. Non-disposable assignments have been proposed as a method for increasing student engagement as the value of their work extends beyond the student-teacher relationship (Seraphin et al., 2018; Sheu, 2020; Stommel, 2015; Wiley, 2013). Sometimes referred to as “renewable”, non-disposable assignments are those where students create an artifact which has value to others; the artifact is made available to the public, and it is openly licensed (Wiley & Hilton, 2018). In addition to being student-centered, the use of non-disposable assignments may increase student motivation by helping learners see a greater value to their efforts (Al Abri & Dabbagh, 2019; Allan et al., 2018; Farzan & Kraut, 2013; Hilton et al., 2019; Jhangiani, 2017; Sheu, 2020).

While much has yet to be determined regarding the use of non-disposable assignments, preliminary evidence is promising (Hilton et al., 2019; Marsh, 2018; Sheu, 2020; Wiley et al., 2017). Exploratory research by Hilton et al. (2019) found that learners generally perceive Open Pedagogy positively. Their research goes on to indicate that studies on student perception are limited. Sheu (2020) reiterates the findings of Hilton et al. (2019), indicating that when students were given the choice between a renewable and disposable assignment, a majority of students chose the former. They posit that this may be attributed to three specific areas: connections to learning management and time management, connection to learning objectives, and student preference (Sheu, 2020).

There appear to be only two studies, both at large, public universities, which have published data regarding this pedagogical approach. A gap, therefore, exists in relation to the impression of students at smaller, private institutions who constitute a quarter of those seeking an undergraduate degree in the United States alone (National Center for Education Statistics, n.d.).

Wiley and Hilton (2018) state that for an assignment to be considered OER-enabled Pedagogy, it should fulfil four criteria: students are invited to publish under Creative Commons licensing, these artifacts are made publicly available, materials have value beyond creation by the author, and students are content-creators who may remix existing OER or create their own new works. The researchers chose to use the concept of OER-enabled Pedagogy as the conceptual framework for this study as it provides more clarity regarding student efforts than the broader term Open Pedagogy.

**Research Questions and Hypotheses**

This study addresses gaps in current literature related to Open Pedagogy viewed through the lens of OER-enabled Pedagogy. The research questions explored are:

1. How does a project based on OER-enabled Pedagogy impact student motivation and engagement in a course?

2. Are students concerned with the “open” nature of assignments inherent in OER-enabled Pedagogy?
Researchers examined findings in relation to the following hypotheses:

1. Student responses will indicate that OER-enabled Pedagogy increases excitement, motivation, and engagement within the classroom (Hilton et al., 2019) and prepares them for future college-level work (Hilton et al., 2019; Marsh, 2018).
2. Student responses will indicate little concern about sharing their work with global audiences or having their names associated with their submissions (Fulton & Kibby, 2017; Jiang et al., 2016).

Several authors indicate that to respect privacy and safety concerns, instructors using Open Pedagogy should allow students to determine whether to include their work in published compilations and the option of using a pseudonym (DeRosa & Robison, 2017; Elder, 2019; Mays, 2017; Seraphin et al., 2019). The researchers of this study have examined available databases for empirical studies related to students’ perception of privacy in public-facing materials. No data on student concern related to Open Pedagogy and thus, by extension OER-enabled Pedagogy was located. Thus, this study plays a role in connecting sound practice and evidentiary support and represents important preliminary insight into OER-enabled Pedagogy from the perspective of those to whom it is intended to benefit. In addition, no studies have yet been published regarding the impression of students at smaller and private schools to OER-enabled Pedagogy, a gap this paper also seeks to help fill.

Methods

Institutional Profile & Research Participants

In 2019, faculty and staff at a private, open enrollment university undertook the task of redesigning curriculum for a First Year Seminar (FS) class. Traditionally, this required learners to purchase a common reader selected by faculty. Taught by eighteen faculty and staff members, FS represents the first exposure most students have to a college classroom. Considering the high percentage of first-generation (37%) and low-income (57.6%) students at the university, as well as a first-year attrition rate close to 40%, course instructors were interested in developing a pedagogical approach that both reduces student cost and increases engagement.

OER-Enabled Pedagogy Project Overview

A project based on the concept of OER-enabled Pedagogy was selected as a central part of the new curricula. To successfully complete the project, students identified a current knowledge gap they had regarding the university experience. Next, in small groups or individually, they developed an artifact of their choosing (e.g. video presentation, infographic) to be included in an eBook for use as the reader in future classes. Students conducted research on their topics (e.g. interviews, surveys, document analysis) and submitted a project proposal, draft with peer review, and final project. Instructors were asked to maintain the structure of the assignment including the three assignment stages. The intent was that projects would be improved by instructor feedback at the proposal and draft stages, as well as through peer review. Thus, the experience was designed to enhance student agency while providing mentorship between instructor and student.

Within the field of Open Pedagogy and thus OER-enabled Pedagogy, questions have been raised as to the ethics of requiring students to openly license their work, or mandating that learners post...
their artifact with or without their names (Elder, 2019; Mays, 2017). To address these concerns, instructors were given a video explaining copyright and Creative Commons licensing. Instructors played this toward the end of class and facilitated a discussion about the value of licensing options. Students then selected a license. Similarly, students determined individually whether they would be given attribution for their project. Any project missing a licensing form was copyrighted while any student not indicating otherwise was “anonymous”.

**Research Process**

To address instructor-related differences, training sessions were held before the term and throughout the semester related to OER-enabled Pedagogy and the project. Instructors were given three assignments (project proposal, draft/peer review, and final submission) to incorporate into their own class. These assignments included student directions, examples, and scoring rubrics.

A mixed-method approach was used to assess the research questions. During the last week of class, an anonymous survey (see Appendix A) was sent to all FS students. Demographically, the class was 52% female and 48% male, with an average of 18. Ninety-eight percent of the students enrolled within a year of completing high school and 16% identified as an ethnic minority. The survey consisted of 15 questions: four demographic, six to assess student impression of the project openness, three to determine student impression of skill development, one regarding willingness to take another class with an open project, and one open-ended. Questions on the survey were answered on a 5-point, Likert-type scale. To increase participation students were offered an opportunity to enter a drawing for one of five $10 gift cards. Considering the study’s exploratory nature, descriptive statistics were generated for each question and evaluated in relation to the research hypotheses. Inferential statistics were not utilized for two reasons. First, since all freshmen participated and it was the first time the project was utilized, researchers lacked an effective comparison group. Second, a pre/post design was not practical as the study sought information on student experience with OER-enabled Pedagogy which they could not assess prior to completion of the project. While the results provide insight into important aspects of this pedagogical movement, attempts were not made to generalize findings.

Following the term semi-structured interviews were conducted with 12 students, four male and eight female (average age of 18.8). Three students were recruited as they indicated earlier their willingness to volunteer for research. Nine students were randomly selected from course rosters and contacted directly. Students were offered a $10 gift card to be a research participant. Researchers planned a minimum of 12 interviews, then to assess whether additional participants were necessary to achieve data saturation. After 12 interviews, no new themes emerged so recruitment ceased. Verbatim transcripts were created from audio recordings and analyzed using the program Dedoose. Researchers reviewed transcripts collaboratively taking an inductive and line-by-line approach (Charmaz, 2012; Skjott Linneberg & Korsgaard, 2019). Open coding was followed by axial coding to develop categories/themes (Khandkar, n.d.).

Reflexivity is important in transparent scientific exploration as researchers impact and are in turn impacted by their research. In this study, the authors played a collaborative but vital role in redesigning the FS curricula to include OER-enabled Pedagogy as agency and empowerment were viewed as critical to student development. The authors developed and facilitated all training on OER-enabled Pedagogy for FS instructors. In addition, one of the researchers facilitated a section of the first-year course and as such, did not play a role in recruiting participants or interviewing a student who was a member their class.
Results

Although the intent was for students to have a great amount of agency, it was discovered that instructors teaching a cohort of science majors made significant changes to the project. While still OER-enabled Pedagogy, students did not have an opportunity to select their own topic, direct their experience, or determine the format of the final project. These students also did not participate in peer review, an important element of open pedagogical approaches (Hegarty, 2015). These 74 students were removed from the participant pool to reduce variance in results that could be attributed to different assignment approaches.

Surveys were sent to the remaining 329 students. Following several reminders, ninety-two completed responses were received, a response rate of 28%. Of those, 51% identified as female and 49% male, nearly identical to the overall composition of the freshman class. In addition, 58.9% of respondents indicated they had prior experience with OER (defined for students as, “class materials that one may freely use, reuse, and share”) and 19.6% were familiar or very familiar with student-created content. Students were asked how frequently they post to social media as it was believed this information may provide insight into attitude toward sharing in general. Fifty-two percent indicated they post to social media at least once a day, 36% once a week or every few days, and 12% never.

Student Motivation and Concern in an Open Assignment

Table 1 depicts the results of questions about aspects the students found motivating or concerning. To aid in comparison to results from Hilton et al. (2019) which is one of only two empirical studies exploring student perception of OER-enabled Pedagogy and the one most similar to this research, data was condensed to three categories; less than a neutral perception, neutral, and greater than a neutral perception.

Two questions asked about student excitement or motivation to participate in the project. In relation to creating an artifact that would be available to future students, 30.7% of respondents indicated they were excited, 44% were neutral, and just over one-quarter indicated they were not excited. Results were slightly more positive in relation to whether they found the project being available to future students and a global community motivating, with 41.3% indicating it was, 35.9% neutral, and 22.8% not motivating.

Table 1: Student Responses to Attitudinal Questions

<table>
<thead>
<tr>
<th>Attitudinal Questions</th>
<th>1 or 2</th>
<th>3 (neutral)</th>
<th>4 or 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitement participating in a project open to future students</td>
<td>25.3% (not excited)</td>
<td>44.0%</td>
<td>30.7% (excited)</td>
</tr>
<tr>
<td>Motivation that the final project was open to students locally and globally</td>
<td>22.8% (not motivating)</td>
<td>35.9%</td>
<td>41.3% (motivating)</td>
</tr>
<tr>
<td>Concern with project being available to students locally and globally</td>
<td>43.5% (not concerned)</td>
<td>41.3%</td>
<td>15.2% (concerned)</td>
</tr>
<tr>
<td>Concern with project being available to others with name included</td>
<td>52.7% (not concerned)</td>
<td>35.2%</td>
<td>12.1% (concerned)</td>
</tr>
<tr>
<td>Positive or negative feelings about the project having utility following class</td>
<td>15.2% (negative)</td>
<td>41.3%</td>
<td>43.5% (positive)</td>
</tr>
<tr>
<td>Positive or negative impact of the open project on overall engagement in the course</td>
<td>15.4% (less engaging)</td>
<td>39.6%</td>
<td>45.1% (more engaging)</td>
</tr>
</tbody>
</table>

Note: 5-point scale reduced for concision
The next two questions asked about concerns related to attribution and sharing their work. As evident in Table 1, only 15.2% of responses indicated concern of their projects being available to others and 12.1% reticence of public attribution. Forty percent to 50% of students indicated no concern in either regard, 43.5% stated no concern with their project being made available to future students and a global audience, and 52.7% no concern about being given attribution. When asked if they viewed the project more positively or negatively knowing it would be useful in the future (non-disposable), only 15.4% of those who responded indicated a more negative outlook. Closely mirroring these results were responses to a final attitudinal question about whether the course seemed more engaging than other classes without a project of this nature.

Development of Academically Important Skills

Three questions measured student belief in the project building tangible skills: confidence in completing a multi-week project, confidence in one’s ability to collaborate in groups, and confidence conducting research and drawing conclusions. Only a small percentage of students felt that the OER-enabled Pedagogy-based project had a negative effect on their confidence related to cross-disciplinary skills (see Table 2). While a large portion of students marked “neutral”, over 56% indicated an increased confidence in completing multi-week projects, 44% felt more confident collaborating in group settings, and more than 45% stated their confidence in engaging in research and drawing conclusions was enhanced.

<table>
<thead>
<tr>
<th>Skills Questions</th>
<th>1 or 2</th>
<th>3 (neutral)</th>
<th>4 or 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of project on confidence completing a multi-week project</td>
<td>6.8% (less confident)</td>
<td>33.7%</td>
<td>56.5% (more confident)</td>
</tr>
<tr>
<td>Impact of project on confidence collaborating in groups for major assignments¹</td>
<td>11.0% (less confident)</td>
<td>27.5%</td>
<td>44.0% (more confident)</td>
</tr>
<tr>
<td>Impact of project on conducting research and drawing conclusions</td>
<td>5.5% (less confident)</td>
<td>49.5%</td>
<td>45.5% (more confident)</td>
</tr>
</tbody>
</table>

Note: 5-point scale reduced for concision
¹13.2% worked individually.

The final question of the survey prior to a free response section asked students if they would be willing to take another course including similar projects. While a plurality of students (42.4%) indicated yes, 38% of respondents were indifferent and 19.6% unwilling. These results parallel those found by Hilton et al. (2019) were 52.7% of students preferred Open Pedagogy, 27.8% indicated no preference, and 19.5% of respondents preferred more conventional learning activities.

Few individuals provided anonymous feedback on the survey. Two students wrote they did not like the project, but indicated that it was because they did not believe it would be used in future classes. Three individuals stated they enjoyed the project. Three students contributed advice for future iterations, including providing additional examples and more time to work on the project. Two individuals stated they did not like the project without further explanation.
Attribution Decision of Students

Figure 1 depicts the attribution option selected by students.

Figure 1: Attribution Permissions for Students

Of the 178 individuals who returned forms, 77% indicated they would like to be given attribution while 18% opted for anonymity. Nine individuals (5%) wished to have their names on their project but their artifact was not included in the eBook due to quality concerns. Fourteen students were listed as part of a group but did not submit an attribution form so had their names removed by default. The difference between the total number of students on course rosters and the forms received may be attributed to students who stopped attending class with the intent to drop or those who did not submit a final project.

Motivation to Help Others

Results of interviews provided greater insight into the elements of OER-enabled Pedagogy that students found motivating. One key theme that emerged was the high value students placed on work that could benefit others. Student 2 indicated, “Just the thought of giving advice to someone who is just coming in. That’s the most interesting thing because they might feel lost or like they don’t know what to do.” Similarly, Student 8 stated, “…you know we could be the reason why, we can change somebody’s life or change their concept on the whole thing…”. When reflecting on whether an assignment is of greater value if it benefits oneself or others, Student 9 noted, “I think the most motivating would be valuable to others, because they can also learn something from the whole experience.” This recognition on the part of students is important as the development of a non-disposable assignment is a key element of Open Pedagogy and OER-enabled Pedagogy (Seraphin et al., 2019).

Motivation Through Agency

Another theme that emerged was the importance of agency in the development of motivation. Apparently, motivation is largely dependent on the student being able to align personal interest with their classwork as opposed to having this determined by the instructor. Student 1 stated:
I always think being able to choose your own topic on any assignment no matter what makes the person who is doing it 10x more motivated to do it. It just, even just my case because in the past when they have given me a topic and I like, I don't want to do this, I don't want to write a whole project about this, but when I get to choose myself, I know what I'm looking for. I know what I'm writing. It's really exciting to me.

Student 12 echoed this sentiment stating, “Yea because if they give us our own then I don't want to do it.”, while Student 7 viewed agency as providing an opportunity to create something of lasting value, “…that's why I picked the topic I picked because people were going to be able to use it from here and maybe like, 20 years later.” Student 9 expanded on choice connecting this to the concept of freedom:

...you know like, normally when you get a project for science or something somebody tells you what to do it's like, I'm doing this for them but seeing that I had the option to pick the topic that I wanted to do, it made me have like free will in the situation so I got to be myself...

Every student interviewed mentioned the motivational value of being given agency. Student 3 indicated that it was somewhat overwhelming to have complete choice and would have liked to have had a list to select from, but this was not mentioned by others. Agency is not limited to projects conforming to OER-enabled Pedagogy. It does, however, serve to disrupt the hierarchical power dynamic within a classroom and provides voice to those who are traditionally oppressed, foundational elements within the decolonizing and critical pedagogy pillars of open pedagogical approaches (DeRosa & Robison, 2017; Ehlers, 2011; Hegarty, 2015; Lambert, 2018).

**Motivation Through Public Recognition**

A third major theme from student interviews related to the perceived value of receiving public credit. Several students saw attribution as an issue of pride. Student 9 indicated, “I love that because that’s like me getting credit for my work…”, while Student 4 stated “…if I help people learn how to study, then it’s nice to get a little bit of credit I guess.” Student 2 wanted her name on the project for a more specific reason noting, “... people could reach out to me if they’re coming into band and, be like, ‘Hey I’m coming into band. I’m going to be a marching band student. Can you give me more advice, or how did you do this?’” Student 10, on the other hand, showed indifference saying, “I really didn’t mind one way or another.” Only one student interviewed indicated a desire to remain anonymous. She stated, “... I’m very shy and I wrote kind of stuff like, how to deal with things that I did and stuff and I didn’t really want people to know that, so try to hide it...”

**Discussion**

**Research Question 1**

The first research question explored how a project based on OER-enabled Pedagogy impacts student motivation and engagement. Researchers compared their findings to Hilton’s et al.’s (2019) study on the use of Open Pedagogy in the undergraduate classroom. Survey results reported here suggest that the criteria inherent in framing works as OER-enabled Pedagogy also improve students’
attitudes toward the assignment. Although approximately 35% to 45% of students were neutral about the impact of sharing their work on their own excitement and motivation, nearly 31% of those who responded found sharing with future learners exciting and 41% sharing with future students and a global community motivating (see Table 1).

Researchers hypothesized that the open nature of the project would positively impact student perception. Survey results generally affirmed this, both regarding motivation and excitement. Interviews were even more definitive regarding the perceived value of sharing work publicly, with all participants indicating they appreciated this part of the project. The reason this was motivational varied among three main ideas: 1) sharing helps others which is a good thing to do, 2) sharing makes you try harder so that others see your best work, and 3) sharing is a way of receiving credit for your efforts.

Future iterations of the project may show continued positive trends in student attitude towards becoming content creators, as each new class will be able to see the fruits of the labor of previous cohorts. The published eBook may address the concerns of two students who provided free responses on the survey indicating an overall negative impression of the project based on the belief that it would not be used by future classes. Three of the 12 students interviewed also indicated doubt that students in subsequent courses would reference their work. It is unknown how widespread this impression was or how it affected student responses regarding excitement and motivation.

Survey data indicating that OER-enabled Pedagogy positively affects student engagement aligns with the limited research data on the topic. Hilton et al. (2019) indicate that students who participate in Open Pedagogy respond positively, with 52% stating that they preferred Open Pedagogy. Sheu (2020) echoes this sentiment, with renewable assignments being preferred by 70.6% of class participants. Students surveyed here were not asked whether they preferred OER-enabled Pedagogy but if their feelings were more positive or negative due to the open nature of the project and if the course was more engaging because of the project structure. Only 15.2% of students indicated negative feelings regarding the non-disposable nature of the project. Similarly, 15.4% of students said this course was less engaging than courses without a similar project (see Table 1).

The first research hypothesis also speculated that students would find OER-enabled Pedagogy helpful in building skills needed for college-level work. Many students who worked in groups and participated in the survey indicated that their collaboration skills increased as a result of the project. While given the opportunity to work individually, 80 of 92 projects were completed by groups. When asked about their development of collaborative skills, 44% indicated an increase. This aligns with the experience of students at other institutions regarding the impact of Open Pedagogy on their ability to collaborate with others (Marsh, 2018). It also parallels findings by Hilton et al. (2019) who write that 48% of students indicated collaborative learning skills were higher with Open Pedagogy. As students in this study could choose to work alone or with others, results may be different if group work was mandated.

As Table 2 indicates, a significant number of students perceived an enhancement in their confidence completing a multi-week project (56.5%), and conducting research and drawing conclusions (45.5%). While these skills are not inherent in all “open” assignments, they are important for students to thrive at the college level. These findings are complementary to those of Hilton et al. (2019) who indicate that students felt Open Pedagogy improved critical thinking and problem solving (45%) and learning how to learn (37%) to a greater extent than more traditional approaches.
Research Question 2

The second research question explored whether students were concerned with the “open” nature of assignments inherent in OER-enabled Pedagogy. Researchers hypothesized that students in this age group would not have the same concern for privacy their instructors may expect due to frequent use of social media. Research assessing the perceived risk of providing personal information online indicates that adolescents (ages 12-19) may feel more comfortable sharing than older individuals (Steijn & Vedder, 2015). A study by Pereira et al. (2017) comparing Baby Boomers, Generation X, and Millennials indicated younger Millennials (ages 18-27) were less concerned about both privacy and security than other generational groups.

As predicted, students showed little hesitation including their names on projects. Of the 173 attribution forms received, 137 students requested to be given credit for their project. Of the students surveyed, 52.7% indicated they did not have concerns about the project including their name. These findings were supported through student interviews. Ten of the 12 students interviewed indicated a positive view of attribution for their work, with one student indifferent and only one reticent to having their name on their project. One reason for this may be the nature of the assignment. Being a college survival guide and providing students agency to choose the topic, students may have been less concerned about others knowing their identity compared to work viewed as more personal.

The definition of OER-enabled Pedagogy encompasses activities as diverse as writing test question banks, editing Wikipedia articles, creating study guides, and co-authoring books. While many of these activities would likely not be seen as private, some students do not wish to have their name associated with work available to others and this should be respected.

A high number of students in this sample post frequently to social media (88% weekly or more) and also demonstrate little concern about online privacy, although causation between these was not established. Further research may assess the willingness of current college-aged students toward sharing their classwork publicly and their social media habits. Such an endeavor may demonstrate that a causal relationship exists between social media behavior and one’s willingness to share academic artifacts.

Additional research is needed regarding the various ways OER-enabled Pedagogy is implemented and how this impacts student perception. Here, freedom was given to students to work alone or in groups. Although this increased student agency and all students interacted with others in the classroom, future studies may determine how student experience is similar or different if they are in a group or work alone. Additionally, this project was the creation of a college survival guide. Data collected from both the survey and interviews was thus contextualized. While students indicated during interviews that they saw the activity as beneficial both to themselves and others, motivation likely depends on the values held by each student. Thus, findings may differ in other academic subjects, by a student’s academic standing, or using other open assignments.

Finally, on the survey some students indicated negative views of the project. The most common reason stated was the belief that the artifacts would not be used by future students. While this concern may be ameliorated in future classes, it is clear that some individuals did not find the project motivating or engaging. Research specifically on those with this belief would be beneficial in improving the experience for all students.

Conclusion

This study begins filling gaps in current empirical research related to the impact of OER-enabled Pedagogy on students. Two research questions were examined: 1- How does a project based on OER-enabled Pedagogy impact student motivation and engagement in a course?, and, 2- Are
students concerned with the "open" nature of assignments inherent in OER-enabled Pedagogy? While both Hilton et al. (2019) and Sheu (2020) report on student perception, neither specifically address students' impressions of the motivation experienced by a project being "open" nor the concerns students may view in sharing their work with larger audiences. The authors of this report have not been able to identify any empirical studies reporting on student perceptions of these elements.

Findings indicate that students are generally motivated and engaged by the prospect of their work having meaning outside the limitations of the disposable assignment. Results indicate that a plurality of students are willing to participate in another course that uses OER-enabled Pedagogy, findings which are further strengthened by interview data. This mirrors comparative data from Hilton et al. (2019).

Several limitations of this study should be noted. First, this research was conducted with first-year students at one institution. It is unknown how results would differ if conducted with those who are not freshmen or at institutions with different student demographics. Second, because of changes made by instructors teaching a cohort containing declared science majors, these students were not included in analyses. Third, due to a withdrawal policy that goes until the last day of class, it is possible that some students had decided to drop the course prior to data collection but remained on the class roster. Finally, considering the survey response rate, generalizability to the entire freshman class cannot be guaranteed. Although interviews generally aligned with survey findings, additional research to confirm these results is merited.

The general takeaway from this study at a small, private university is similar to that of Hilton et al. (2019) and Sheu (2020), namely that students found value in a class incorporating OER-enabled Pedagogy. Thus, while more research is warranted and not all students perceive a value to this approach, existing data with students at private and public institutions is promising and may serve as a stepping-off point for future analyses.

Acknowledgements

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Appendix A

Student Survey Instrument

Q1 Do you identify as
   • Male
   • Female
   • Prefer not to say

Q2 Have you had prior experience using open educational resources (OERs) in the classroom? OERs are class materials that one may freely use, reuse, and share.
   • Yes
   • No

Q3 How frequently do you post to social media (Snapchat, Instagram, Twitter, Facebook, etc.)?
   • Multiple times a day
   • About once a day
   • Once every few days
   • About once a week
   • Never

Q4 How familiar were you with student-created course content as a part of education prior to taking this course?
   • Very Unfamiliar
   • Unfamiliar
   • Neutral
   • Familiar
   • Very Familiar

Questions 5-14 were answered on a 5-point scale where one represented the lowest score, three was neutral, and five the highest score.

Q5 How excited were you to participate in a project that would be openly available to future University students?

Q6 How motivating was it that the final product of your course was going to be made openly available to future students both at the University and globally?

Q7 How concerned were you about your project being made available to future students, both at the University and globally?

Q8 How concerned were you about your project being made available to others with your name being included as a creator of the project?

Q9 Were your feelings about the final project more positive or more negative since you knew the assignment was going to be useful after the class ended?

Q10 Did this course seem more engaging or less engaging than courses that do not have a project like this as a major part of the course?
Q11 How confident are you in your ability to complete a multi-week project after completing your final project?

Q12 Did this project help you feel more confident collaborating in groups for major assignments or less confident?

Q13 Did this project make you more confident or less confident doing research and drawing conclusions?

Q14 How willing are you to take another course that has a student-created public project?

Q15 Do you have any comments that you would like to leave regarding your experience with the final project?
Inequitable Impacts of Textbook Costs at a Small, Private College: Results from a Textbook Survey at Gettysburg College

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Abstract
Recognizing that higher education settings vary considerably, librarians at Gettysburg College sought to better understand textbook spending behaviors and the effects of costs on our students. We adapted the Florida Virtual Campus 2016 Student Textbook and Course Materials Survey to suit the context of our small, private, liberal arts college. Most students spent $300 in Fall 2019. Financial aid awards did not cover the cost of required books and course materials for most students receiving aid. Negative effects were more pronounced for first-generation students and Pell Grant recipients, who were more likely to not purchase required books, to not register for a course due to cost, and to struggle academically. Some reported negative effects beyond their academic lives, as well. We recommend adoption of Open Educational Resources as an equity-minded practice that addresses this academic success barrier.

Keywords: Textbook survey, OER, undergraduate students, private college

Introduction
Gettysburg College is a private, residential, liberal arts college with 2,600 undergraduate students located in Adams County, Pennsylvania. Over the past decade, the campus library has observed and responded to a perceived increase in financial need from students. The sense that financial hardship is becoming a more acute problem among our students is supported by national data—the 2015–16 National Postsecondary Student Aid Study found that 72% of undergraduates received some form of financial aid (National Center for Education Statistics, n.d.-a). Despite the common assumption that students who attend private liberal arts colleges come from primarily wealthy backgrounds, our own institutional data reveal that 79.3% of Gettysburg College students received financial aid awards in the 2018–19 academic year, constituting a 33% increase in funds awarded from 2014–15 to 2018–19 (Office of Institutional Analysis, 2019; 2020).

To put this in context, the cost of attendance at Gettysburg College increases approximately 3.5% each year, rising from $60,870 for the 2015–16 academic year to $69,850 for 2019–20 (Office of Institutional Analysis, 2020). The cost of textbooks has also increased over the last several decades. A 2005 report from the US Government Accountability Office found that the overall price of college textbooks increased 186% between 1986 and 2004, more than twice the rate of general inflation (U. S. Government Accountability Office, 2005). Librarians frequently see the effects of this increase
first-hand; students often come to our public service desks early in the semester hoping we have copies of their required course materials in the general collection or in course reserves as an alternative to purchasing or renting the texts. Librarians were motivated to begin researching solutions, the most promising of which was Open Educational Resources (OER). On our campus, we define OER as teaching and learning materials that are both free to use and include permissions to reuse, retain, remix, revise, and redistribute.

We began promoting OER adoption in 2014 as a way to lower the cost of required books and course materials, believing that this was a natural fit with the library’s role of supporting student academic success. Our initial campus outreach involved educating both faculty and librarians about the potential benefits of OER to students and faculty, focusing particularly on the cost-saving aspect of OER, which are licensed for free digital use. Early outreach initiatives included hosting faculty presentations (Wertzberger, 2017, 2019a, 2019c), creating infographics for new faculty orientation in partnership with the campus bookstore (Barnes & Wertzberger, 2018), conducting a Textbook Listening Tour inspired by one done at Temple University (Bell & Johnson, 2019; Wertzberger, 2019), presenting to undergraduates about social justice issues related to textbook costs (Appedu, 2019), and hosting programming for Open Education Week each March, including displays on the library main floor (Bein, 2018; Bradford, 2019). However, many faculty were not convinced that high textbook prices were problematic, as they perceived our students to be wealthy enough to afford the assigned course materials. Notably, some even dismissed the financial concerns of students who do not come from wealthy backgrounds by claiming that financial aid awards cover all textbook costs for those who have genuine need (Wertzberger, 2019).

To support our initial advocacy, we used qualitative, anecdotal evidence from informal conversations with students and from a #textbookbroke wall displayed during Open Access Week (Scholarly Communications, 2017). Lacking local quantitative data describing what our students spend on textbooks, we relied on findings from the Florida Virtual Campus Student Textbook and Course Materials Survey (Florida Virtual Campus, 2011; 2016; 2019; Florida Virtual Campus et al., 2012) to help make a case that high textbook costs negatively impacted students’ academic success. The Florida reports are the one of the largest open sources of textbook use data, including self-reported expenditures, from U.S. students in higher education. They are commonly referenced by other textbook survey authors (Jhangiani & Jhangiani, 2017; Martin et al., 2017; Tillinghast, 2017; Murphy & Rose, 2018; Wittkower & Lo, 2020). However, because the Florida studies surveyed students at public colleges and universities across the state—a population with significant differences from our own student body—we observed hesitation from faculty regarding the relevance of the results on our own campus. As a result, we decided to adapt the Florida Virtual Campus 2016 Student Textbook and Course Materials Survey to suit our needs.

Our research questions included:

- How much money do Gettysburg College students spend on textbooks and required course materials?
- What strategies do students use to reduce textbook costs?
- What textbook formats are preferred by students?
- How are students affected by textbook costs?

We intended to use the results to shape expansion of library support for faculty who wish to reduce or eliminate the cost of course materials as a strategy to improve student success.
We will share our considerations for revising the survey questions, our procedure for administering the survey, how we handled data analysis, the major survey findings, and a discussion about what this means in our local and national context. Ours is one of the first surveys to be conducted at a small, liberal arts college like Gettysburg, adding to the literature about the impact of high textbook costs on undergraduate students. Our results reveal both common and differing experiences of students across higher education.

**Literature Review**

The most recent Florida Virtual Campus Student Textbook and Course Materials Survey was conducted in 2018. 46% of respondents reporting spending over $300, 64% of respondents chose not to purchase a required text to reduce costs, and only 4.4% did not attempt to reduce their textbook costs in some way (Florida Virtual Campus, 2019). Additionally, 42.8% of respondents reported they took fewer courses, 40.5% reported that they had avoided registering for specific courses, 22.9% reported having dropped a course, and 18.1% reported withdrawing from a course due to the price of their textbooks.

In a 2013 national survey, the U. S. Student PIRGs similarly reported that 65% of respondents had chosen not to buy a textbook because it was too expensive, and that 48% of respondents felt textbook costs had some impact on the amount of courses they were able to take at a time (Senack, 2014). Their most recent survey was published in 2020, in which they found that 63% of students had chosen not to buy a textbook because of the cost, a slight decrease from the 2013 survey (Nagle & Vitez, 2020). In 2015, Jhangiani and Jhangiani surveyed students at 12 colleges and universities in British Columbia and found that 54% of participants had decided not to purchase the required textbook at least once, and 30% of respondents reported receiving a poorer grade due to textbook costs, although this effect was not evident from self-reported grades in the same study (Jhangiani & Jhangiani, 2017).

In a survey by Murphy and Rose at American University also conducted in 2015, 45% of respondents spent over $300 on textbooks in Fall 2015, and 67% of respondents said that they had decided not to purchase a textbook due to cost (Murphy & Rose, 2018). When students at Brigham Young University were surveyed in 2016, 66% reported that they had chosen not to purchase a textbook due to cost, and 47% of those reported that it had negatively affected their grades (Martin et al., 2017). University of Hawaii at Manoa’s student textbook survey on student behaviors towards traditional textbooks and OER found that 82% of respondents had chosen not to purchase required textbooks for a course, and only 13% said that this did not affect their performance in the class. 60% of respondents had spent over $200 for the Spring 2017 semester (Tillinghast, 2017). In Spring 2017, researchers at Old Dominion University found that 58.8% of respondents had spent over $300 that semester on textbooks and other course materials. Additionally, 37.9% of respondents reported not purchasing required course materials, and 19.8% said they had earned a lower grade than expected because they could not afford their course materials (Wittkower & Lo, 2020).

While these surveys provide important context on which to build an affordability-focused OER program, so far little research has been conducted regarding the purchasing and use of textbooks by students at small, private liberal arts colleges. Additionally, our student population is small (2,623 full-time students in Fall 2019), undergraduate-only, and composed overwhelmingly of traditional students who are not often the focus of affordability initiatives.
Methods

Our research questions included:

- How much money do Gettysburg College students spend on textbooks and required course materials?
- What strategies do students use to reduce textbook costs?
- What textbook formats are preferred by students?
- How are students affected by textbook costs?

Survey items were adapted from the 2016 Florida Student Textbook and Course Materials Survey; we asked ten questions related to course materials (see Appendix 1). Influenced by Sarai Rosenberg’s work on respectful survey design (Rosenberg, 2018), we carefully considered which demographic data were necessary and chose to present nine demographic questions at the end of the survey. We were interested in whether textbook costs differed for students by class year, major, gender, first-generation status, international student status, race, ethnicity, and/or socioeconomic status (we used the Pell Grant award as a proxy measure); because of Gettysburg’s programmatic emphases on first-generation students and students from low-income households, we were especially interested in those response groups. For some items, we included demographic definitions provided by our Institutional Analysis office in order to facilitate comparison between the response group and the entire student body. Because the survey was anonymous and confidential, we relied on self-reported demographic data from respondents.

The survey was administered using LimeSurvey, an open source online survey tool, during the first three weeks of the Fall 2019 semester. Rather than employing a random representational sampling method, we encouraged all students to complete the survey. We promoted the survey throughout the administration period using a variety of digital and physical media, as well as word of mouth. 438 students (17% of total enrollment in Fall 2019) completed the survey. Post hoc comparisons between the response group and the student body revealed that our sample, while not completely representative, was fairly close. Women, first year students, and Pell Grant recipients were overrepresented; we recognize that the number of self-reported Pell Grant recipients may be lower than the actual number, as some students may not know the details of their financial aid packages. Men, juniors, and seniors were underrepresented (see Appendix 2). Because of the response rate, we found value in analyzing results even though the response group did not align precisely with the entire student population.

The survey data were cleaned and prepared for analysis using both Excel and SPSS. We created a few new variables in order to categorize some of the continuous variables on spending and preferred costs. In general, we limited ourselves to univariate and bivariate descriptive statistics, because inferential comparisons to determine statistical significance rely upon a randomized and representative sample. Our descriptive statistics primarily consist of frequencies and cross tabulated comparisons of groups. For some variables, we performed means comparisons to easily summarize the extent of the differences. In all cases where we report differences between groups, the differences are large enough to be meaningful; non-meaningful differences are not discussed. For questions that included free response fields, responses were organized thematically to uncover repeated concerns and issues raised by students.

Meaningful Findings

Student Spending and Textbook Use

Students reported their Fall 2019 book spending in whole dollars. We asked them to report separately what was spent on required texts and what was spent on additional required materials (including, but not limited to, access codes, clickers, art supplies, and lab manuals). Most respondents likely
estimated their costs, but this effect was mitigated by the timing of the survey collection period. The survey was administered during the first three weeks of the semester, shortly after course materials were acquired.

Participants most frequently answered in $50 increments. The most common response (mode) for total amount spent on books was $300; the highest response was $950 and the lowest was $0 (Figure 1). Because we asked how much participants spent rather than how much their books cost, these numbers reflect money spent after employing the cost-saving strategies asked about later in the survey.

New variables were created to sort individual responses into $100 ranges in order to simplify spending patterns. 10.3% of respondents spent less than $100 for all their books, while 17% spent more than $400. 37% of respondents spent more than the most common answer of $300.

Participants were also asked about money spent on other course materials. For greater insight into the total money spent by students in one semester, we created a new variable that combined individual responses to the amount spent on books and the amount spent on other materials. These responses were again separated into ranges. The combined variable revealed that 33% of respondents spent over $400 for books and course materials in one semester; only 17% spent over $400 on books alone.

Students estimated what portion, if any, of their total books and materials costs were covered by financial aid (Figure 2). 56.8% reported that they received financial aid but did not have any remaining funds available to pay for books and course materials. 8.4% reported that any of their required materials were covered by financial aid; only 3.2% reported that all of their required materials were covered.
Responses to this question were cross tabulated with responses about whether participants received a Pell Grant (Figure 3). 68.5% of Pell Grant recipients reported that financial aid did not cover any books or course materials compared to 55.5% of students who did not receive a Pell Grant. 14.4% of Pell Grant recipients reported having some financial aid funding available to purchase books, compared to 4.7% of those who did not receive a Pell Grant.

Figure 3: What percentage of the total cost of books and other course materials was covered by financial aid for Fall 2019? (Pell Grant status)

Strategies for Reducing Cost in Fall 2019

Participants were asked which measures they used to reduce the costs of required books for the Fall 2019 semester (Table 1). Only 1.1% of all respondents reported that they had not attempted to use any cost-reducing strategy. The most-reported strategies included buying and selling used textbooks, renting books, and purchasing from sources other than the campus bookstore.

Table 1: In your entire academic career at Gettysburg College, has the cost of required books caused you to…? (All respondents)

<table>
<thead>
<tr>
<th>Strategies used</th>
<th>Percentage (all responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent a copy from the campus bookstore</td>
<td>52.3%</td>
</tr>
<tr>
<td>Buy books from a source other than the campus bookstore</td>
<td>49.5%</td>
</tr>
<tr>
<td>Buy used copies from the campus bookstore</td>
<td>47.5%</td>
</tr>
<tr>
<td>Rent books from a source other than the campus bookstore</td>
<td>39.0%</td>
</tr>
<tr>
<td>Sell used books</td>
<td>26.0%</td>
</tr>
<tr>
<td>Share books with a classmate</td>
<td>16.4%</td>
</tr>
<tr>
<td>Only purchase some of the required books</td>
<td>15.8%</td>
</tr>
<tr>
<td>Check out course materials from the library</td>
<td>11.6%</td>
</tr>
<tr>
<td>Buy lifetime access to a digital version of the book</td>
<td>8.4%</td>
</tr>
<tr>
<td>Use a reserve copy from the campus library</td>
<td>7.3%</td>
</tr>
<tr>
<td>I do not attempt to reduce book costs</td>
<td>1.1%</td>
</tr>
</tbody>
</table>
Cross tabulations allowed comparisons among demographic groups; meaningful differences were identified in several instances. 20.5% of first-generation student respondents reported sharing books with a classmate to reduce cost, while only 13.7% of non-first-generation student respondents employed this strategy. 20.7% of Pell Grant recipients reported sharing books with a classmate, while only 14.7% of non-Pell recipients used this strategy. 16.2% of Pell respondents reported checking out textbooks from the library to reduce cost, while only 10.4% of non-Pell recipients used this strategy. 19.8% of Pell respondents reported purchasing only some of their required texts, while only 14.7% of non-Pell recipients used this strategy. Responses from students who reported being “not sure if they received a Pell Grant” were not included in this comparison.

Participants were also asked which strategies they used to reduce the cost of additional required course materials. 35% reported not attempting to reduce the cost of these materials.

**Impact on Student Experience**

Most survey questions asked about the cost of books and additional required materials for the Fall 2019 semester. Two questions asked respondents to report on the effects of books and materials costs over their entire career at Gettysburg College (Figure 4).

![Figure 4: In your entire academic career at Gettysburg College, has the cost of required books caused you to...? (All respondents)](image)

While a large portion reported “no effect” or “no effect because this is my first semester”, the most commonly selected effects were “did not purchase the required books” and “struggle academically because I could not access the book(s)”. 24.2% of respondents reported not purchasing the required books at some point in their college career, and 14.7% disclosed that they have struggled academically because they could not access books and/or materials. Cross tabulation revealed that 46% of respondents who reported not purchasing their books due to cost also reported struggling academically. Participants were able to choose “other” in response to this question and elaborate in a free-text field; 12 students (2.7% of respondents) entered responses in this field.

In order to separate respondents who are not impacted by costs from those who have not yet felt any effects, first year and transfer students were able to select “no effect because this is my first semester at Gettysburg College”. Surprisingly, cross tabulation revealed that 13 first year students reported already experiencing at least one effect within the first three weeks of their college experience.
Overall, first-generation students reported experiencing the negative effects of book costs more frequently than other students. 30% of first-generation respondents reported not purchasing required textbooks, while only 21% of non-first-generation respondents reported this effect. 22% of first-generation respondents reported struggling academically due to lack of access caused by cost, while only 11% of non-first-generation students reported this effect. 12% of first-generation respondents reported not registering for a course due to book costs, while only 6% of non-first-generation students reported this effect. Additionally, only 28% of first-generation respondents reported not feeling any effects of book costs compared to 45% of non-first-generation respondents.

Similarly, responses from Pell Grant recipients revealed that this group was at greater risk of experiencing the consequences of textbook costs. 33% of Pell Grant respondents reported not purchasing the required materials, while only 18% of non-Pell students reported this effect. 27% of Pell Grant respondents reported struggling academically because of textbook costs, while only 9% of non-Pell respondents reported this effect. Only 26% of Pell Grant respondents reported no effects from book costs, while 49% of non-Pell students reported no effects.

Textbook Format and Reasonable Cost Per Class

Participants were asked about their preferred formats for their textbooks; they were able to choose as many options as they wished. 87% of respondents stated that they preferred printed books. The next most popular options were “printed book with companion website” at 29%, “downloadable ebook/PDF” at 26%, and “online ebook” at 15%.

To provide some additional context to our local textbook affordability initiative, participants were asked to submit a reasonable cost in whole dollars for all textbooks and course materials assigned for a single class. $50 was both the median and mode response. The mean response of $73.56 was influenced by large outliers as high as $500. Because most survey questions asked students to report on total book costs per semester (not by class), the outlier responses may reflect reasonable cost per semester.

Additional Findings from Free-text Responses

The final survey question was a free response item with a simple prompt: “Anything else to say?” 146 respondents submitted comments, which were organized into three major categories: responsibility, frustration, and consequences.

Responsibility

Many participants used this question to assign responsibility for high textbook costs. While the list price of textbooks and other course materials is set by the publishing industry, students related that local individuals and offices should make certain that all students have access to necessary materials. 25 suggested that ensuring access to course materials was the responsibility of professors, while 10 identified the college and 4 identified academic departments as responsible entities. 18 students named the bookstore as being responsible for textbook prices, while 5 expressed that the library had a role. Only 2 students looked beyond our campus and identified publishers as the driving force behind high textbook prices.

Frustration

Respondents repeatedly expressed frustration with their textbook acquisitions; most comments focused on cost. However, 8 students also used this question to express dissatisfaction with the
underutilization of required books and asserted that they were not worth the cost. 12 students singled out the cost of access codes and subscriptions as a major frustration; 6 expressed that the cost of an online homework system access code was excessive when paired with the textbook cost; one also pointed out that the access code prevented them from having access to materials after the semester ended. 10 respondents used this item to report frustration with the overall cost of college and how the cost of textbooks factors into the overall cost of being a student. 6 students shared that their financial aid award didn’t adequately cover their textbook and materials costs. Finally, 12 students shared that they were frustrated by the variability of textbook costs both from semester to semester and by academic department. For example, one participant said that due to the high cost of the textbooks, they could never be a science major “even if [they] wanted to.”

Consequences

8 students divulged specific financial and academic consequences that resulted from high costs. One participant said that they had fallen behind in their courses because the professor waited until the first week of classes to communicate their book assignments, which did not allow the student to budget for purchases. Another student shared that the cost of textbooks impacted their family at home.

Discussion

Textbook Purchasing and Behaviors

Our survey instrument was adapted from the Florida Virtual Campus survey, which allows for direct comparison between our results and the results of the most recent iteration of their survey. The 2018 Florida Virtual Campus survey found that 43.5% of Florida students reported spending more than $300 on textbooks in Spring 2018 (Florida Virtual Campus, 2019). Our survey, administered approximately a year and a half after the Florida survey, found that 37.4% of Gettysburg College students reported spending more than $300 on textbooks in Fall 2019. The smaller percentage of Gettysburg students spending over $300 in one semester is consistent with the approximately 10% decrease in Florida students spending that much between the 2016 and 2018 iterations of the survey, assuming the decrease continued into 2019.

While our reports of student spending are similar to results from the Florida surveys, our survey responses suggest that the realities of financial aid at Gettysburg College may be different from those previously studied. Although our survey did not directly ask students whether they received financial aid, 16.9% of participants reported receiving no financial aid when asked what portion of their book costs were covered by aid. If we extrapolate from this response, we can assume that 83.1% of survey respondents received some form of financial aid; this is approximately consistent with the 79.3% of all Gettysburg College students receiving aid as reported in the 2018–19 Common Data Set (Office of Institutional Analysis, 2019).

Only 8.4% of our respondents said that any amount of their textbook and course materials cost was covered by financial aid—about one-tenth of the percentage who reported receiving aid. These percentages are notably lower than those reported in the Florida Virtual Campus Survey, where an extrapolated 66.1% of students reported receiving aid in Spring 2018, and 43.2% reported that any of their course materials were covered by aid (Florida Virtual Campus, 2019). The difference between our results and the findings of the Florida survey may be the result of any number of factors, such as students who choose not to accept all funds offered in financial aid packages or simply the high cost of tuition at Gettysburg College.
Our findings also run counter to local, anecdotal perceptions from faculty that students who cannot afford textbooks cover their costs with financial aid (Wertzberger, 2019b); 68.5% of Pell Grant recipients reported that none of their books or course materials were covered by aid. In *Paying the Price: College Costs, Financial Aid, and the Betrayal of the American Dream*, Sara Goldrick-Rab (2016) writes:

The hard truth is that while financial aid reduces the ever-increasing cost of college, more often than not it still leaves families with unmanageable prices.... [W]hen it comes to the group that this financial aid system was designed to help the most—those families earning an average of $16,000 a year—the net price of college now amounts to a whopping 84% of their income (Goldrick-Rab, 2016).

For these students with the greatest financial need, this lack of funding for course materials is especially likely to have negative financial and academic impacts.

Like students at other institutions, Gettysburg students reported using a variety of strategies when trying to reduce costs. Among these were some that the authors of the Florida Virtual Campus survey termed “coping strategies” (2019), i.e., those that resulted in temporary or partial access to materials. These coping strategies include sharing books with a classmate, purchasing only some of the required textbooks, checking out textbooks from the library, and using library reserves. Of these, sharing books and only purchasing some of the required books were more likely to have been implemented by first-generation students and Pell Grant recipients than their counterparts. The use of these strategies may be connected to these students’ likelihood of feeling the effects of textbook costs, a topic discussed further below.

When comparing Gettysburg students and students in previous studies, the most noticeable difference in cost-saving strategies is the number who chose not to purchase required textbooks. While past work at a variety of institutions has found that anywhere between 38% and 67% of students have not purchased a required textbook to cut costs (Florida Virtual Campus, 2019; Jhangiani & Jhangiani, 2017; Martin et al., 2017; Murphy & Rose, 2018; Senack, 2014; Wittkower & Lo, 2020), only 16% of our respondents said that they only purchased some of their required books in the Fall of 2019, and just 24% of respondents said that they had chosen not to purchase required books at any point during the course of their college career. While first-generation students and Pell Grant recipients were more likely not to have purchased required books (both in the Fall semester and throughout their career), the percent of affected participants in these groups is still not as high as in previous studies.

Our participants reported fewer negative effects of the high cost of textbooks across the board when compared to respondents in the previous surveys. Some of this discrepancy may be because first-year participants, who were at most three weeks into their college career at the time of the survey, were able to choose that they had not yet felt any effects of textbook costs, an option not presented in previous studies.

The billing structure at Gettysburg College also may help to explain this—because students are billed by the semester, rather than by course or credit hour, they do not have the opportunity to control costs by dropping or withdrawing from individual classes. Responses from participants who added their own effects of textbook costs reveal that some students choose to make sacrifices in other aspects of their lives because of textbook costs:

“Broke my wallet and made me lose other opportunities that required money”
“Have to budget money for other things I need”
“I pay for my books myself, and so it causes me to not spend money on other things”
“Cut costs in other school areas”
These non-academic consequences of book costs, although outside of the scope of this study, may play a significant role in student behaviors surrounding textbook purchasing at our institution.

Inequitable Impacts of Textbook Costs

Our survey results indicate that Pell Grant recipients and first-generation students more frequently experience negative consequences from the high cost of course materials than their counterparts. First-generation students were 50% more likely to report not purchasing required books, twice as likely to not register for a course due to cost, and only reported not feeling any effects from book costs at about two-thirds the rate of non-first-generation students. Similarly, Pell Grant recipients were almost twice as likely to report not purchasing required books and half as likely to not feel any effects in comparison to those who did not receive Pell Grants. The cost of course materials also has negative effects on learning, with first-generation students about twice as likely to report struggling academically as a result of book costs than their counterparts and Pell Grant recipients reporting this effect at three times the rate of non-recipients.

The higher education community is increasingly aware that high textbook costs impact equitable access to learning for specific demographic groups. First-generation college students face additional challenges adjusting to a higher education setting, including decreased likelihood of degree attainment (DeAngelo et al., 2011), decreased academic and social integration (Nunez & Carroll, 1998), lower self-confidence and feelings of academic preparation (Saenz et al., 2007), and greater numbers of hours spent working (Pascarella et al., 2004). First-generation students employ coping strategies to save on the high cost of textbooks at a higher rate than their peers and more frequently report negative effects from these costs, implying that, at Gettysburg College, course materials are an additional barrier to success for many first-generation students.

As previously discussed, the hidden costs of obtaining a college education and the resulting disenfranchisement of students with the greatest financial need are not adequately addressed by financial aid at Gettysburg College. Our findings imply that Pell Grant recipients and other financially struggling students are also frequently academically disadvantaged in comparison to their peers due to the high cost of course materials. One student expressed that, “I have on several occasions been asked to purchase books during the first week of classes, which I did not budget for. This is unfair, and often causes me to be behind in a class while waiting for the materials to come in.” These financial struggles may have impacts that reach past the individual students as well; one student shared that, “[the cost] created a struggle and a more strict budget for not only myself, but my parents and family at home.” Our results show that the high costs associated with textbooks and other course materials not only exacerbate existing socioeconomic inequities on campus and beyond, but also put lower-income students at an academic disadvantage.

While many campus groups have a stake in conversations about equity and inclusion, few prioritize efforts to address the high cost of course materials. However, these data suggest that the high cost of course materials is situated within the greater context of increasing tuition and an increasingly socioeconomically diverse student body. In order to support the learning of all students, faculty must begin considering how the cost of their required course materials can heighten social and academic stratifications that exist in their classrooms. While textbook publishers set the prices of their materials, faculty can choose to implement creative solutions that reduce this barrier to equal participation in the educational experience.
Conclusion

The results of this survey suggest a few issues that have been missing in reports on similar studies. The academic structure at Gettysburg College—where the vast majority of students are residential and tuition costs do not vary by number of credits taken—may affect how student behaviors and experiences are shaped by high textbook costs. Our results imply that students at our institution are generally unlikely to have financial aid money to spend on their course materials, even though a higher percentage of our students receive aid than those at some previously-studied institutions.

At the same time, our respondents were less likely to report negative effects of high costs. Most notably, we found that first-generation students and Pell Grant recipients were more likely than their peers to feel negative impacts from the high costs of their course materials. Both groups were also shown to more frequently struggle academically as a result of those costs. Our results reveal clear barriers to our students’ chances at succeeding academically, driven by the high costs of textbooks and course materials.

OER as an Equity Solution

Research shows that adopting OER can help address inequities among students created by the high cost of textbooks. A University of Georgia study shows that while all students benefit from courses shifting from commercial textbooks to OER (with better grades and lower rates of Ds, Fs, and withdrawals), Pell-eligible students benefit the most (Colvard et al., 2018). In 2019, researchers produced similar findings for students in calculus courses with commercial textbooks exceeding $120 in price (Delgado et al., 2019).

The textbook affordability umbrella covers low-cost and zero-cost course materials in addition to OER. From a student perspective, any significant reduction in the cost of textbooks is a win. In cases where we cannot identify appropriate open materials to support a course, we enthusiastically recommend library-licensed materials (which carry no additional charge to students) and even, on occasion, commercial materials with lower costs.

When our library began learning and teaching about OER in 2014, commercial publishers dismissed the potential of the open education movement to disrupt their long-established revenue streams. Since then, sales of commercial textbooks have dropped, and publishers have attempted to co-opt the affordability conversation and even the word “open” (Jhangiani, 2019). Educators who are truly concerned with issues of equity and inclusion should critically examine commercial packages labelled “inclusive access”; these are actually automatic billing programs that remove student agency from the textbook acquisitions process and can carry hefty price tags (Jhangiani, 2017).

We prioritize truly open materials because of their pedagogical flexibility and sustainability. For example, although we found that most students prefer print textbooks and many OER are digital-first, the open licenses applied to these materials allow for them to be printed without restriction. Adopting OER is the best strategy for instructors who want to control, customize, and sustain their course materials and to create an equitable learning environment for all students.

Areas for Future Study

While this survey has made headway in revealing some of the effects of high course material costs at Gettysburg College and may have implications for similar institutions, some areas would benefit from further study to better understand the full impact of these costs. We do not yet understand why students at our institution less frequently report receiving enough financial aid funds to cover
Inequitable Impacts of Textbook Costs at a Small, Private College

Future studies may wish to investigate this phenomenon further. Additionally, our qualitative responses revealed that some students felt the impact of book costs in areas beyond their academic lives; future studies may wish to consider investigating these effects on the whole student experience.

Acknowledgements

The authors gratefully acknowledge Hana Huskic and Kevin Aughinbaugh, who helped design this survey. Huskic also provided assistance during survey administration. Clinton Baugess provided helpful feedback during the writing process.

Notes

1. Several other student textbook surveys have been conducted in various setting that deserve mentioning but cannot be fully detailed here, including: University of Otago’s student textbook survey, which highlights student perceptions and behaviors towards textbook prices in New Zealand (Stein et al., 2017); William & Mary’s survey on student textbook purchasing practices (Taliaferro et al., 2019); and Adams State University’s student survey on the need for student engagement with OER initiatives (Langdon & Parker, 2020).

2. “Traditional students”, as defined by the National Center for Education Statistics, are not employed full-time, are not financially independent, do not have children or a spouse, and are not GED recipients (National Center for Education Statistics, n.d.-b).

3. Gettysburg College defines “first-generation student” as one from a family where neither parent has obtained at least a Bachelor’s degree (Office of Institutional Analysis, 2020).

4. Federal Pell Grants are awarded to undergraduate students who display exceptional financial need and have not earned a bachelor’s, graduate, or professional degree (U.S. Department of Education, n.d.).

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Wertzberger, J. (2017, May 17). Customize your course content with open educational resources. All Musselman Library Staff Works. 66. https://cupola.gettysburg.edu/librarypubs/66


Wertzberger, J. (2019c, December 5). What’s up with textbooks? All Musselman Library Staff Works. 127. https://cupola.gettysburg.edu/librarypubs/127

Appendix 1 – Survey and Demographic Questions

Q1 Are you a Gettysburg College student? [required question]
   • Yes
   • No

Q2 How much money did you spend on books (textbooks, novels, ebooks) for your Fall 2019 courses? Please enter an amount (not a range) expressed in whole dollars.

Q3 Excluding books, how much did you spend on other required course materials for the Fall 2019 semester (art supplies, lab notebooks, lab manuals, access codes, clickers, etc.)? Please enter an amount (not a range) expressed in whole dollars.

Q4 What percentage of the total cost of books and other required course materials is covered by your financial aid for the Fall 2019 semester?
   • I do not receive financial aid
   • None
   • Less than 25%
   • 26% to 50%
   • 51% to 75%
   • 76% to 99%
   • All of my course materials costs are covered by financial aid
   • I’m not sure
   • Prefer not to answer

Q5 What measures have you taken to reduce your required book costs for the Fall 2019 semester? [Check all that apply]
   • I do not attempt to reduce book costs
   • Buy used copies from the campus bookstore
   • Rent a copy from the campus bookstore
   • Buy books from a source other than the campus bookstore
   • Rent books from a source other than the campus bookstore
   • Buy lifetime access to a digital version of a book
   • Sell used books
   • Use a reserve copy from the campus library
   • Check out course materials from the library
   • Share books with classmate
   • Only purchase some of the required books
   • Other (please specify)

Q6 Excluding books, what measures have you taken to reduce your required course material costs for the Fall 2019 semester? (art supplies, lab notebooks, lab manuals, clickers, access codes, etc.) [Check all that apply]
   • I do not attempt to reduce course material costs
   • Buy used course material from the campus bookstore
   • Rent used course materials from the campus bookstore
   • Buy course material from a source other than the campus bookstore
   • Rent course materials from a source other than the campus bookstore
   • Sell used course material
• Share course material with classmate
• Purchase only the minimal required course materials
• Other (please specify)

Q7 In your entire academic career at Gettysburg College, has the cost of required books caused you to…? [Check all that apply]
• Not register for a specific course
• Drop a course before/at the beginning of the semester
• Withdraw from a course later in the semester
• Not purchase the required books
• Struggle academically because I could not access the book(s)
• Change Major
• None of these
• This is my first semester at Gettysburg College
• Other

Q8. In your entire academic career at Gettysburg College, has the cost of required course materials (art supplies, lab notebooks, lab manuals, clickers, access codes, etc.) caused you to…? [Check all that apply]
• Not register for a specific course
• Drop a course before/at the beginning of the semester
• Withdraw from a course later in the semester
• Not purchase the required course materials
• Struggle academically because I did not have the course materials
• Change Major
• None of these
• This is my first semester at Gettysburg College
• Other

Q9 Which book formats do you prefer? [Check all that apply]
• Printed book
• Printed book with companion website
• Online ebook
• Downloadable ebook/PDF
• Formatted for cellphone or tablet
• Formatted for print disabilities/assistive technology
• Audio book
• Other (please specify)

Q10 How much do you feel is reasonable to pay for ALL books and required course materials for a single class? Please enter an amount (not a range) expressed in whole dollars.

Q11 Anything else to say? Please enter your comments below.

D1 What is your class year?
• 2019
• 2020
• 2021
• 2022
D2 Are you currently studying off campus for the Fall 2019 semester?
- Yes
- No

D3 Your major(s)? [Check all that apply]

D4 What is your gender?
- Woman
- Man
- Non-Binary
- Self-identify
- Prefer not to answer

D5 Are you a first-generation college student? (Gettysburg College defines first-generation as a student from a family where neither parent has obtained at least a Bachelor’s degree)
- Yes
- No
- Prefer not to answer

D6 Did you receive a Pell Grant?
- Yes
- No
- I’m not sure
- Prefer not to answer

D7 Are you an international student?
- Yes
- No
- Prefer not to answer

D8 What is your ethnicity? (the term “Hispanic or Latinx or Spanish Origin” is defined as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race)
- Hispanic or Latinx or Spanish Origin
- Not Hispanic or Latinx or Spanish Origin
- Prefer not to answer

D9 What is your race? [Check all that apply]
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Prefer not to answer
- Self-identify
## Appendix 2 – Demographic Data

<table>
<thead>
<tr>
<th>How many students…</th>
<th>Gettysburg College*</th>
<th>Survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>in each class year?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Year: 686 (26.2%)</td>
<td>First Year: 137 (31.3%)</td>
<td></td>
</tr>
<tr>
<td>Sophomore: 706 (26.9%)</td>
<td>Sophomore: 125 (28.5%)</td>
<td></td>
</tr>
<tr>
<td>Junior: 641 (24.4%)</td>
<td>Junior: 72 (16.4%)</td>
<td></td>
</tr>
<tr>
<td>Senior: 590 (22.5%)</td>
<td>Senior: 85 (19.4%)</td>
<td></td>
</tr>
<tr>
<td>No answer: 19 (4.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>by gender?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women: 1,394 (53.1%)</td>
<td>Women: 301 (68.7%)</td>
<td></td>
</tr>
<tr>
<td>Men: 1,229 (46.9%)</td>
<td>Men: 108 (24.7%)</td>
<td></td>
</tr>
<tr>
<td>Nonbinary: 8 (1.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No answer: 20 (4.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>by first generation status?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Year: 136 (19.9%)</td>
<td>First Year: 37 (27%)</td>
<td></td>
</tr>
<tr>
<td>Sophomore: 199 (26.6%)</td>
<td>Sophomore: 34 (27.2%)</td>
<td></td>
</tr>
<tr>
<td>Junior: 151 (21.0%)</td>
<td>Junior: 20 (27.8%)</td>
<td></td>
</tr>
<tr>
<td>Senior: 151 (21.6%)</td>
<td>Senior: 20 (23.5%)</td>
<td></td>
</tr>
<tr>
<td>by Pell grant recipients</td>
<td>≈ 472 of total class (18%)</td>
<td>111 of all respondents (25.3%)</td>
</tr>
<tr>
<td>by ethnicity (of any race)?</td>
<td>Hispanic/Latino: 241 (9.2%)</td>
<td>Hispanic/Latino: 48 (11%)</td>
</tr>
<tr>
<td>by race?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black or African American: 102 (3.9%)</td>
<td>Black or African American: 30 (7.2%)</td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaska Native: 8 (0.3%)</td>
<td>American Indian or Alaska Native: 4 (1%)</td>
<td></td>
</tr>
<tr>
<td>Asian or Pacific Islander: 66 (2.5%)</td>
<td>Asian or Pacific Islander: 39 (9.3%)</td>
<td></td>
</tr>
<tr>
<td>Two or More Races: 59 (2.2%)</td>
<td>Checked two or more boxes: 8 (1.9%)</td>
<td></td>
</tr>
<tr>
<td>White: 1,946 (74.2%)</td>
<td>White: 313 (74.9%)</td>
<td></td>
</tr>
<tr>
<td>Race and Ethnicity Unknown or International: 201 (7.6%)</td>
<td>No answer: 30 (7.2%)</td>
<td></td>
</tr>
</tbody>
</table>

*Gettysburg College demographics have been gathered from the 2019–20 College Factbook, as well as from personal correspondence with administrators in the Financial Aid Office.
A global crash-course in teaching and learning online: A thematic review of empirical Emergency Remote Teaching (ERT) studies in higher education during Year 1 of COVID-19

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Abstract
The COVID-19 pandemic has impacted education in ways that academic institutions, scholars, administrators, educators, and students will strive to fully comprehend for years to come. The global spread of SARS-CoV2 in early 2020 prompted social distancing as the primary countermeasure against contracting and spreading the novel coronavirus, which in turn led academic communities worldwide to suddenly transition to emergency remote teaching (ERT) in order to maintain educational continuity. This review of the literature synthesizes findings from 38 empirical studies set in higher education about ERT in 2020 from all over the world. A thematic analysis of findings produced four major themes: 1) diverse ERT experiences; 2) digital divide and vast educational/socio economic inequalities; 3) commonly-experienced ERT problems, issues, and challenges; and 4) frequently-made adjustments in response to ERT. Findings are indicative of the immediate aftermath of transitions to ERT, and open areas of research for long-term impacts of ERT are discussed.

Keywords: emergency remote teaching, emergency remote education, COVID-19, remote learning, distance education, literature review

Introduction
The COVID-19 pandemic has impacted education in ways that academic institutions, scholars, administrators, educators, and students will strive to fully comprehend for years to come. The global spread of SARS-CoV2 in early 2020 prompted social distancing as the primary countermeasure against contracting and spreading the novel coronavirus, which in turn led academic communities worldwide to transition suddenly to emergency remote teaching (ERT) in order to maintain educational continuity (Hodges et al., 2020). The global scale of distance education that resulted is unique in educational history with no comparable precedent in living memory (Williamson et al., 2020). However, ERT is not tantamount to traditional online course offerings (Hodges et al., 2020) that are thoroughly developed, and often supported by dedicated staff (Means et al., 2014). Further, ERT is only meant to be temporary (Hodges et al., 2020) as a crisis response in addition to the practice being involuntary, undertaken by faculty, staff, and students often with little to no background in teaching and learning remotely (Jandrić et al., 2020). Moreover, the sudden transition to ERT has laid bare even more socio economic inequities in terms of educational continuity, course quality, and technology access; some institutions and students have fared much better than others as the pandemic continues (Beaunoyer et al., 2020). The resulting situation is one where the global academic community is greatly in need of research regarding the impact of ERT. Editorials (e.g., Bozkurt & Sharma, 2020; Dietrich, 2020; Fischer, 2020) and calls for papers with special issues on COVID-19 and education (e.g., JRTE, 2020; OLC, 2020) have emerged with the goal of documenting and addressing the many challenges and complications of ERT in real time.
Key Research Objective

There are key differences in conventional experiences of learning online under ideal conditions and those under ERT (Hodges et al., 2020; Williamson et al., 2020). Moreover, ERT is not a typical research setting/context, nor one that would be deliberately created for research in distance education. Thus, this review was guided by a single research question: What have we learned in 2020 about/from ERT in the context of higher education?

Method

Data Sources and Search Process

The search terms emergency remote teaching, emergency remote education, emergency remote learning, remote learning, and COVID-19 were used to search extant literature about the sudden transition to ERT worldwide. These terms were used in EBSCO, Academic Search Premier (a multidisciplinary research database consisting of over 2,000 peer-reviewed journals) as well as Google Scholar. Parameters of the search include language (that articles, abstracts, and/or keywords would appear in English) and published in 2020 (from January to early October 2020 when data was collected). The initial search produced a staggering 101 articles, primarily in academic journals published over a 6–7 month period from all parts of the world.

Processing the Literature

Organization and Classification

Using a matrix review approach (see Klopper et al., 2007), each paper was entered into a spreadsheet where metadata (e.g., authors, publication year, paper title, database source, publication venue, method type, method sub-type, analysis type, location of study, context of study, type of participants, etc.) and characteristics of each paper were recorded/assigned for organization and descriptive analysis. Once the matrix of literature was completed, inclusion/exclusion criteria were applied.

Inclusion and Exclusion Criteria

To produce a data set within the context of higher education, two criteria were used to include/exclude papers by filtering the following criteria: 1) papers had to be an empirical study where quantitative/qualitative data were collected (versus an essay documenting how events unfolded, editorials, conceptual pieces, or basic online teaching guidelines); and 2) be set within the context of include higher education to narrow the scope review. After applying the inclusion/exclusion criteria, 38 papers that had collected quantitative and/or qualitative data from faculty, administrators, students, etc., at/from institutions of higher learning remained for inclusion.

Concept Mapping

Then, findings sections of papers were examined for themes by assigning keywords or phrases (i.e., codes) as the foundation of a thematic analysis (Braun & Clarke, 2006). In the matrix review approach, this is also referred to as concept mapping (Klopper et al., 2007).
Results

Descriptive Statistics

The majority of papers in the resulting sample had data collected from the United States (23.1%) and the United Kingdom (10.3%), or had data collected from multiple nations (15.4%) such as Jandrić et al.’s (2020) compilation of individual teacher experiences from all over the world, or Hall et al.’s (2020) comparison of mobile learning strategies across six European nations. Nevertheless, studies on ERT in higher education that were included have come from all major geographic regions of the world, with papers’ countries of origin illustrated in Figure 1.

Empirical studies were heavily concentrated in qualitative and quantitative paradigms. While some studies were distinctly conducted as mixed-methods (e.g., Alqurshi, 2020; Amin & Sundari, 2020; Crick et al., 2020; Gao, 2020; Perets et al., 2020; Petillion & McNeil, 2020), quantitative studies in this sample consisted exclusively of data collection through electronic surveys. It must be noted for good measure, however, that some studies utilizing survey instruments for quantitative data collection often included open-ended questions (e.g., Gillis & Krull, 2020; MacIntyre et al., 2020; Sundarasen et al., 2020) to collect qualitative data. Such studies, nevertheless, were categorized as quantitative (versus mixed-methods) in this review. Study types are outlined by major research method paradigms in Figure 2.
Quantitative analyses ranged from purely descriptive statistics such as frequencies, means, standard deviations (e.g., Gillis & Krull, 2020; Kapasia et al., 2020; Wilcox & Vignal, 2020) to papers with more sophisticated parametric tests ranging from paired t-tests or factor analyses (e.g., Aboagye et al., 2020; Knudson, 2020). Additionally, there were nonparametric statistical tests (e.g., Alqurshi, 2020; Sundarasen et al., 2020) such as chi-square analyses given sampling methods under relatively restricted or non-ideal research conditions. While there was more diversity in methodology/analysis type among qualitative papers, studies predominantly consisted of case studies (68.4%) as shown in Figure 3. One study (i.e., Sethi et al., 2020) collected qualitative data through a survey instrument in a descriptive cross-sectional qualitative survey.

Studies also covered diverse subject matter contexts as shown in Figure 4. Studies related to education (i.e., teacher education [13.5%], education programs [16.2%]) were relatively large, making up just over 1/4 of all studies in this sample. Studies involving participants (i.e., teachers, students, administrators) from multiple subject matter areas (e.g., cross-college surveys, multiple institutions, international participant pools) tied with education programs as a subject at 16.2%.

**Thematic Analysis**

A thematic analysis was performed in regards to findings of the studies. Findings sections were examined for themes by assigning keywords (e.g., ERT difficulty) and/or phrases (e.g., Lack of ICT
infrastructure in rural communities making ERT difficult) in a spreadsheet, serving as codes for the foundation of a thematic analysis (Braun & Clarke, 2006). Similar/related keywords and/or statements were merged together to form groups, and common groups were aggregated to produce themes, ultimately representing important patterns in the data (Braun & Clarke, 2006). These themes are presented in Table 1, and are subsequently used to structure the findings section of this review.

Table 1: Major Themes from Empirical ERT Study Findings in Higher Education

<table>
<thead>
<tr>
<th>Theme</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diverse ERT Experiences</td>
<td>Abdulrahim &amp; Mabrouk, 2020; Abel, 2020; Aboagye et al., 2020; Amin &amp; Sundari, 2020; Bal et al., 2020; Bozkurt et al., 2020; Chatziralli et al., 2020; Choi et al., 2020; Jandrić et al., 2020; Johnson et al., 2020; Kidd &amp; Murray, 2020; Mohmmed et al., 2020; Osman, 2020; Perets et al., 2020; Peters et al., 2020; Petillion &amp; McNeil, 2020; Rapanta et al., 2020; Sangster et al., 2020; Sepulveda-Escobar &amp; Morrison, 2020; Van Heuvelen et al., 2020; Wang &amp; East, 2020</td>
</tr>
<tr>
<td>Digital Divide and Vast Educational/ Socio Economic Inequities</td>
<td>Abel, 2020; Aboagye et al., 2020; Alqurshi, 2020; Bozkurt et al., 2020; Crick et al., 2020; Czerniewicz et al., 2020; Gao, 2020; Gyampoh et al., 2020; Jandrić et al., 2020; Kapasia et al., 2020; Knudson, 2020; la Velle et al., 2020; Motala &amp; Menon, 2020; Peters et al., 2020; Rahiem, 2020; Sangster et al., 2020; Sepulveda-Escobar &amp; Morrison, 2020; Sundararasan et al., 2020</td>
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<td>Commonly-experienced ERT Problems, Issues, &amp; Challenges</td>
<td>Abel, 2020; Aboagye et al., 2020; Alqurshi, 2020; Bal et al., 2020; Bozkurt et al., 2020; Chatziralli et al., 2020; Gao, 2020; Gillis &amp; Krull, 2020; Green et al., 2020; Gyampoh et al., 2020; Johnson et al., 2020; Kapasia et al., 2020; MacIntyre et al., 2020; Osman, 2020; Peters et al., 2020; Petillion &amp; McNeil, 2020; Quezada et al., 2020; Rahiem, 2020; Rapanta et al.2020; Sangster et al., 2020; Sethi et al., 2020; Sepulveda-Escobar &amp; Morrison, 2020; Sundararasan et al., 2020; Van Heuvelen et al., 2020; Wilcox &amp; Vignal, 2020</td>
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<td>Frequent-made Adjustments in Response to ERT</td>
<td>Aboagye et al., 2020; Amin &amp; Sundari, 2020; Gillis &amp; Krull, 2020; Green et al., 2020; Johnson et al., 2020; la Velle et al., 2020; Mohmmed et al., 2020; Osman, 2020; Perets et al., 2020; Petillion &amp; McNeil, 2020; Quezada et al., 2020; Van Heuvelen et al., 2020; Wang &amp; East, 2020</td>
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Findings from the Review

Diverse ERT Experiences

Given the vastly different information and communications technology (ICT) infrastructure in different countries around the world, as well as institutional knowledge, it comes as no surprise that ERT experiences are diverse. This spectrum makes characterizing ERT monolithically problematic, and educationalists world-wide were very aware of just how challenging experiences could potentially be, even if their own were positive (Abdulrahim & Mabrouk, 2020; Crick et al., 2020). Moreover, the timing of ERT transitions similarly had effects on the nature of the experience (Petillion & McNeil, 2020). For example, students might have already been oriented to their courses if transitioning mid-semester when the pandemic shifted from Asia into western countries, yielding a more positive experience (Van Heuvelen et al., 2020). Similarly, countries in Asia with semester start dates in early March (versus early January) and which had experience with prior epidemics (e.g., SARS, MERS) were more successful in transitioning to ERT unlike many Western ones (Sangster et al., 2020). Nevertheless, a common experience was an initial state of shock.

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ERT Shock

It comes as no surprise that the switch to ERT was often met with a state of shock by institutions, educators, and students (Rapanta et al., 2020). The closure of schools and subsequent efforts to maintain educational continuity at the expense of physical classrooms and co-presence was akin to coping with loss for many (MacIntyre et al., 2020; Peters et al., 2020). The initial transitions have also been described as extreme disruptions and whiplash (Osman, 2020). This critical juncture in education was also, unfortunately, coupled with the need to confront human and racial prejudice in education against Chinese, Asian, and Asian heritage students at universities around the world as well as intrinsically discriminatory views of distance education or educational technology more broadly (Peters et al., 2020). While intrinsic teacher beliefs and the use (or lack thereof) of digital/computer technology in education has long been known in the field of educational technology (Ertmer, 1999), the COVID-19 pandemic has forced institutions of higher learning, faculty, and students worldwide to confront these views head on in a trial-by-fire, ultimately making teaching and learning in novel ways unavoidable (Abel, 2020; Alqurshi, 2020). As noted from a study in Ghana, this was not easy; years of prior face-to-face teaching experience did not prepare faculty for the demands of teaching at a distance (Gyampoh et al., 2020).

Positive Experiences

While experiences with ERT have been diverse and complex (Bal et al., 2020), there have also been positive ones. In Saudi Arabia, for example, Abdulrahim and Mabrouk (2020) found that digital learning had actually improved learning outcomes for students, and this was achieved in no small part by having a robust ICT infrastructure in place. Teachers were able to adapt quickly and successfully. They noted, however, that participants in their study predominantly came from the humanities, suggesting it was likely that successful ERT realization may not be as easy in other fields, even with a strong ICT foundation in place. For students studying fields related to information technology or computer science, there were few interruptions to common classroom practices or assignments (e.g., programming, coding), which enabled a relatively smooth transition (Crick et al., 2020). Students in the United Kingdom also were mature in their perceptions of ERT and were reported as being flexible and understanding of changes made to their classes and curriculum (Choi et al., 2020). Amin and Sundari (2020) reported that students in Indonesia, though still preferring face-to-face learning, viewed various digital tools and platforms positively for learning. In Chile, teachers reported that ERT allowed them to experiment with technology-supported teaching since there were no punitive risks in doing so since the primary goal was simply to maintain classes for students (Sepulveda-Escobar & Morrison, 2020). Similarly in Saudi Arabia, Alqurshi et al. (2020) reported that teachers were forced to try new/different assessment methods over conventional paper-based proctored tests. The unavoidable use of ICT and educational technology fostered a greater appreciation and awareness of its value for teachers in Crick et al.’s (2020) study in the United Kingdom. Nevertheless, the vast majority of experiences were negative in one form or another.

Negative Experiences

Institutions, educators, students, and even family members have experienced a collective crash course in distance education. The sudden transition and goal of maintaining educational continuity in many ways exacerbated existing problems in addition to creating new ones. Teachers and students were both unprepared for online learning as a whole. Students reported not knowing the requirements of assignments (Alqurshi, 2020) indicating how certain traditional elements of courses...
could be lost in translation from face-to-face teaching to ERT. Teachers’ strategies for conducting classes often relied on mimicking face-to-face instructional practices (Bozkurt et al., 2020; Chatziralli et al., 2020; Van Heuvelen et al., 2020). This often led to reduced or limited interaction with peers and instructors, which then led to negative perceptions of online learning, and ultimately lower levels of satisfaction (Alqurshi, 2020). Students also suddenly found themselves sitting for 6–8 hours a day not only at computers, but also on mobile phones as their primary device for accessing and participating in their courses (Sundarasen et al., 2020). This could be tiresome if not exhausting (Rahiem, 2020) for both students and teachers (Johnson et al., 2020). Makeshift learning spaces required significant engineering at students’ and teachers’ homes, which could be uncomfortable and/or full of distractions (Sepulveda-Escobar & Morrison, 2020). Sethi et al. (2020) also reported on how working adults, whether teachers or students, had to take on additional care-giving roles if other dependents were at home. Jandrić et al. (2020) also pointed out that institutions of higher learning have found themselves almost completely reliant on commercial platforms and for-profit services (e.g., Zoom, WebEx) to maintain educational continuity. This power imbalance ultimately places educational stakeholders in a rather precarious position should such companies’ altruism fade.

Differing Stakeholder Priorities

While it is commendable that universities and colleges have invested great amounts of resources into maintaining educational continuity for students through ERT, this priority was not necessarily shared by all stakeholders (Mohmmed et al., 2020). This consideration, however, does not seem prevalent across the literature in this review’s sample. Abel’s (2020) student interviews in the Philippines highlighted that some students felt as if educational continuity under the circumstances was perverse when they were suffering from stress and anxiety regarding their own personal health, as well as that of their families if caring for others during lockdowns. The relative importance of educational continuity was also questioned by students in Ghana given the numerous challenges that institutions, faculty, and students faced in suddenly teaching and learning online (Aboagye et al., 2020). Digital and socio economic divides, in no small part, also had a significant influence on the experiences and perceptions that students and teachers have had worldwide with ERT (Gao, 2020; Kapasia et al., 2020).

Digital Divide and Vast Educational/Socio Economic Inequities

As outlined in Table 1, COVID-19 and ERT has exacerbated existing socio economic inequalities, making up a significant aspect of findings from these empirical studies. The pandemic and ERT have simply functioned as a proverbial insult to injury in terms of the digital divide. Studies spanning the globe from the Europe (Crick et al., 2020 [United Kingdom]), North America (Johnson et al., 2020 [United States]; Petillion & McNeil, 2020 [Canada]), Asia (Abel, 2020 [Philippines]; Kapasia et al., 2020 [India]; Mohammed et al., 2020 [Oman]; Sethi et al., 2020 [Pakistan]; Sundarasen et al., 2020 [Malaysia]), Oceania (Gao, 2020 [Australia]; Green et al., 2020 [New Zealand];), Africa (Aboagye et al., 2020 [Ghana]; Motala & Menon, 2020 [South Africa]) to South America (Sepulveda-Escobar & Morrison, 2020 [Chile]) have all reported on the extreme complexity of how this has played out. Jandrić et al. (2020) have argued that the term ‘digital divide’ is arguably far too simple when “what disadvantages people is multidimensional, and dialectical with so many individual aspects of their personal, economic and cultural contexts” being deeply interconnected, interdependent, and inseparable (p. 151). While justice to these issues can hardly be given in such a short space within this review, the most common (and unsurprising) results from interviews
and surveys (e.g., Jandrić et al., 2020; Kapasia et al., 2020; la Velle et al., 2020; Motala & Menon, 2020) is that learning online is not and has not been equal for all. The pandemic has simply amplified these existing inequalities in ways that have yet to be fully understood. It has potentially, however, exposed these deep structural problems to a large portion of the population that would not have otherwise been aware of them (Crick et al., 2020; Czerniewicz et al., 2020; Jandrić et al., 2020). In the field of educational technology and distance education more specifically, this reality has long been one of discussion (e.g., Saleh & Sanders, 2014). Distance education, as a practice, normally grapples with higher attrition rates than face-to-face education (Means et al., 2014) and disproportionately negative performance by students associated with lower socioeconomic and/or minority statuses (Stoessel et al., 2015; Xu & Jaggars, 2014) which are also often associated with the digital divide. The combination of these known issues with the pandemic and ERT, and its long-term effects on students, stands as a very necessary and open area of research.

**Commonly-experienced ERT Problems and Challenges**

**First-time Teaching and Learning Online**

Distance education is not a fringe educational activity (Dunlap & Lowenthal, 2018) with a history of practice dating back to the late 1700s (Bower & Hardy, 2004). Students in the United States alone take at least one online class per year in the course of regular academic programs (Seaman et al., 2018). Around the world, hundreds of thousands of students participate in MOOCs yearly (Jordan 2014, 2015), and there are open universities (e.g., Anadolu Open University, Indira Gandhi National Open University, National Open University of China) and/or distance programs with annual enrollment in the millions (Moore & Kearsley, 2012), in addition to traditional brick-and-mortar universities offering their own catalogues of classes at a distance (Stewart, 2019). Thus while distance learning is not uncommon today by any means (Means et al., 2014), it has never occurred on a global scale simultaneously until COVID-19. Moreover, the rush to enable learning remotely via ERT saw vast amounts of institutions, instructors, and students experiencing some form of formal distance learning for the first time (Chatziralli et al., 2020). Johnson et al. (2020) noted that teachers in their study were not particularly fond of ERT, meanwhile the lack of know-how (Sepulveda-Escobar & Morrison, 2020) or lack of teaching presence in digital environments (Rahiem, 2020) often led to negative perceptions of learning (Wilcox & Vignal, 2020). First-time ERT teaching and learning was an additional source of stress in addition to the stress intrinsic to the pandemic (MacIntyre et al., 2020).

**Mental Health Issues**

Empirical studies also revealed accounts of mental health issues (Gao, 2020) in numerous capacities ranging from stress (MacIntyre et al., 2020), decreased motivation (Petillion & McNeil, 2020), confusion and disorientation (Bal et al., 2020), fear of the unknown and anxiety (Green et al., 2020), depression and anxiety (Kapasia et al., 2020), decreased enjoyment (Gillis & Krull, 2020), feelings of remoteness and isolation (Green et al., 2020), and maladaptive coping strategies (MacIntyre et al., 2020). For example, MacIntyre et al. (2020) examined the various instructor coping strategies and found that one of the most common, avoidance, was correlated with more stress. The additional planning and preparation that distance courses require was also a source of more stress (MacIntyre et al., 2020). Teachers and students also had to take on additional care-giving roles during lockdowns and quarantines, which resulted in more stress in trying to maintain work-life balances (Sethi et al., 2020). This often led to fatigue and burnout (Sangster et al., 2020). Teachers often reduced course-workloads due to the extra time required for students to complete activities and assignments in a
digital manner. Nevertheless, despite the modifications, activities and assignments often required more time than anticipated (Wilcox & Vignal, 2020). Osman (2020) noted how there was difficulty in addressing the needs of students with special needs, and Sundarasen et al. (2020) reported higher levels of stress and anxiety among female students, implying that the collective negative effects of ERT and the pandemic are likely highly nuanced and subtle. How certain groups and sub groups of teachers/students (e.g., international students vs. exchange students, humanities vs. science instructors) have experienced and managed mental health issues in relation to ERT is an area wide open for empirical study.

Technology Obstacles and Barriers

Instructors and students also reported numerous challenges and difficulties with technology in interviews, open-ended responses, and surveys. Internet access (poor bandwidth, limited availability) was described in communities all over the world (Aboagye et al., 2020; Alqurshi, 2020; Abel, 2020; Gillis & Krull, 2020; Kapasia et al., 2020). While this is not necessarily surprising, Internet and computer access could be more problematic than had initially been anticipated (Gillis & Krull, 2020). While some studies only reported few or minor technology-related obstacles or barriers (e.g., Abdulrahim & Mabrouk, 2020; Choi et al., 2020; Crick et al., 2020; Knudson, 2020), the relatively smooth transition to ERT and seemingly “easy” educational continuity only highlighted how unusual this outcome was when compared to other accounts emerging on social media, personal/professional networks, and emerging literature on the subject (Jandrić et al., 2020). The transition in modality from offline to online, however, required numerous changes to common practices in addition to having to learn how to perform common teaching and learning tasks anew.

Frequently-made Adjustments in Response to ERT

Modality Changes

Studies frequently noted how teachers were forced to confront how to teach differently at a distance. This often included changing the modality of assignments or activities (Amin & Sundari, 2020), as well as approaches to the course format itself. For example, Aboagye et al. (2020) found that lecturer issues in their final regression model could have been addressed by utilizing a blended-learning format versus courses being conducted fully online. Green et al. (2020) noted how teachers valued being able to team-teach in ERT rather than having to go it alone throughout the pandemic, which was especially valuable if a team member had expertise/experience in digital and/or distance learning. Quezada et al. (2020) saw course structures and practices being modified and adjusted in real-time based on student feedback, coming to the realization that assignments and activities should not be mimicked from the face-to-face experience, which is a long-standing principle (equivalency theory) in distance education (Simonson, 1999). Petillion and McNeil (2020) also witnessed how the use of synchronous lectures were able to recreate a sense of structure and normalcy, although Peters et al., 2020 found that the use of live-lectures had mixed-results with student engagement and synchronous lecture attendance. Student engagement was often related (positively and negatively) to adjustments made to course expectations and evaluation policies.

Evaluation Policies and Course Workloads

Various studies highlighted both the importance and necessity of adjusting evaluation policies and workloads given the sudden switch to ERT alongside the added pressures of the pandemic.
(Quezada et al., 2020; Van Heuvelen et al., 2020). This could take the form of implementing pass/fail grading policies (Perets et al., 2020), although the outcomes of such a change could have both positive and negative effects. For example, Perets et al. (2020) reported that the pass/fail grading resulted in less student engagement, less attendance at synchronous lectures, and even less viewing of asynchronous lectures. By contrast, Gillis and Krull (2020) reported more favorable reactions to the implementation of pass/fail grading policies though less motivation was prevalent nonetheless. Wilcox and Vignal (2020) described how student workloads were reduced to accommodate the extra work involved in learning remotely though teachers did not necessarily perceive the change being successful, and students still felt ERT had a negative impact on their learning.

**Discussion and Conclusion**

While distance education has been a consistent and growing component of education for more than 200 years (Bower & Hardy, 2004; Seaman et al., 2018), it has never been a global phenomenon in the way that ERT has been due to COVID-19 (Hodges et al., 2020). For most institutions, instructors, and students, their experiences with ERT are their first experiences with distance education. While these two practices are distinct from one another (Hodges et al., 2020; Williamson et al., 2020), it is likely that experiences with ERT will, rightly or wrongly, influence perceptions of teaching and learning online for generations to come.

This review of empirical studies in 2020 synthesizes global experiences of ERT, often highlighting difficulties, challenges, and large-scale socio economic disparity. However, the potential for paradigmatic change exists in education moving forward (Alqurshi, 2020; Crick et al., 2020; Jandrić et al., 2020). In terms of educational technology, ERT has forced educators en masse to embrace and/or experiment in novel teaching methods, using different tools and technology, in ways that no policy directive has ever been able to accomplish (Jandrić et al., 2020). Similarly, while distance education has often not been included in traditional teacher-training programs or professional development, the pandemic has shown just how vital a skill it is in emergencies, and one that has numerous positive outcomes in general when properly implemented (Abdulrahim & Mabrouk, 2020). Distance education may become more mainstream and seamlessly blended into education if included in future education programs and ongoing professional development.

Many of the suggestions from these studies (e.g., equivalent learning experiences, lowest-common technology, alignment of digital tools and curricular objectives, institutional support, social presence, teaching presence) are not new in distance education, and neither is the socio economic and digital divide (see Jaggars, 2014; Stoessel et al., 2015; Xu & Jaggars, 2013). In fact, the knowledge base on teaching and learning at a distance has existed for decades (Bower & Hardy, 2004; Means et al., 2014) yet it is new to the vast majority of educators worldwide. A few of these best practices (equivalency theory, multimodal presentation of information, accessibility) in distance education have taken on a new significance.

These studies also show the immediate, short-term impacts of ERT; what remains to be investigated and understood are the long-term and likely less obvious effects that ERT has had on education. The synthesis in this review has also pointed out numerous avenues for future research, especially on the longitudinal effects of ERT. Future studies should investigate ERT and educational attainment, in addition to retention/attrition rates. Attrition rates in distance education are both complex and high, and what the attrition/retention rates and trends are in ERT are unknown at this point in time, and vital to both understanding where we are in terms of the effects of the pandemic and ERT. In short, there is no shortage of avenues for future investigation. Furthermore, how we collectively move forward to
post-pandemic times is a question that remains to be answered. We have witnessed the transition from education to ERT, and now we must transition from ERT to various post-pandemic educational norms; empirical research will be instrumental in getting us there.

References


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Exploring Learners’ Attitude toward Facebook as a Medium of Learners’ Engagement during Covid-19 Quarantine

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Abstract
The rapid transition to online teaching because of the global disruption caused by the Covid-19 pandemic exclaimed all the educators on finding the most efficient ways to teach in the presence of all rampant limitations caused in both social and academic lives. Facebook, as one of the favorite social networks, having hundreds of millions of users, is an enticing way for the teachers and students to form an online community. With this regard, the purpose of the present study is to explore the attitude and viewpoints of language learners toward implementing Facebook as a peripheral medium, besides the formal e-learning platform used in the classroom, to engage learners in language learning and explore its effectiveness in the process of teaching. Moreover, this study aims to explore learners’ attitudes through the lens of the sociocultural theory. To this end, participants were chosen based on availability sampling, and the online versions of two surveys, Facebook Online Survey and Usefulness and Effectiveness Survey were shared with them through Facebook wall posts and Google Drive. The quantitative and qualitative analyses of their responses are examined and the results are analyzed based on the sociocultural perspective. This study implied that Facebook can be employed as a motivating technology to engage learners and an effective tool besides the other online medium used during the global lockdown.

Keywords: Facebook, learners’ attitude, sociocultural theory, web 2.0 technology, engagement, language learning

Introduction
The flourishing innovative technologies and learning management systems, as Anca and Cosmina (2015) declared, have been employed by educators for the sake of teaching and assessment for recent years. The omnipresence of the internet and its potentiality to keep the people in touch anywhere and anytime was proven as a utilizable solution during the quarantine days caused by the outbreak of the Covid-19 pandemic.

While a drastic change in all arenas was caused by this pandemic, it signifies new prospects for all to adapt and be resilient. From the very first days in which the officials of the ministry of health in Iran announced the number of few infected people, academia including universities, schools, and educational institutes inevitably revived the need to explore online teaching and learning opportunities. Hence, the complete lockdown ignited new challenges, while new horizons are illuminated. While health officials are trying to control the detriments caused by the pandemic, the educational experts are doing their best to provide on line education. However, in the current situation in language learning classes, the students were witnessed not responding well enough to online learning. For instance, in a cross-sectional study, Baloran (2020) reported the students’ unwillingness with the online-blended learning approach. Moreover, in a descriptive cross-sectional study at Liaquat College of Medicine and Dentistry, Abbasi et al. (2020) perceived that students did not prefer e-teaching over face-to-face teaching during the lockdown situation. They recommended taking necessary measures for improving e-teaching for better learning during the lockdown.
Similarly, in the context of the present study, it was seen that learners were not interested and motivated to follow the online learning procedure. As most of them asserted, in the virtual environment, there was not a friendly and attractive atmosphere in comparison to the face-to-face classes; therefore, it lacks the motivating factors they crave in face-to-face classes, the students had the chance to get together before and after the class hour and during the break, talk to each other and have fun.

To involve and motivate the learners in online learning through more interesting alternatives, the researchers of the present study decided to make use of Facebook to involve learners in the learning process to move forward language teaching to be effective and lead to learners’ learning and satisfaction.

Facebook, as one of the most favorite social networking sites, has been reported by Connolly et al. (2019) and Chen (2018) as one of the effective and favorable learning tools. Besides its feasibility to share favorite photos and videos and communicate through wall posts and stories, as Mazer et al. (2007) denoted, Facebook has applications useful for teaching and learning which can nurture the student-teacher relationship by creating positive learning experiences for both parties.

According to VanDoorn and Eklund (2013), Facebook as an open and synchronous internet platform is a form of computer-mediated communication (CMC) which has different possibilities to meet the specific learning needs for distance students. This medium, as Ryan and Xenos (2011) reported, opened a new arena for educators to use social media to enhance learning outcomes. In the same way, there are several studies exploring the learners’ attitude and satisfaction toward using Facebook as a medium of learning.

In an experimental study employing questionnaire and semi-structured interview, Eren (2012) found that students have a very positive attitude towards the use of Facebook activity as a supplement to the language classroom. However, it was reported that traditional classroom-based language learning had been a backbone for language education.

Furthermore, Akbari et al. (2012) investigated Iranian Ph.D. students’ attitudes enrolled in an online English course via Facebook. The results indicated students’ positive attitude toward Facebook and regarded it as an effective formal education tool.

In another study, Bsharah et al. (2014) explored Jordanian university students’ use of Facebook and their perceptions of their social intelligence employing a cross-sectional survey design on 282 students. They found that the use of Facebook might benefit students’ social competencies and intelligence.

Considering the use of other learning applications, Amry (2014) and Maniar and Modi (2014) sought to explore the impact of using WhatsApp mobile learning activities on the achievement and attitudes of online students and reported positive achievements and attitudes of students towards this application.

Cheta and Yinka (2016) examined the position of students on the use of social media for educational purposes by conducting a study at the University of Port Harcourt, Nigeria. They found that students are highly motivated by the need to find and bound with new peers and potential social groups. Furthermore, the study found that respondents’ preference for social media was in the following ranked order: Facebook, Twitter, WhatsApp, Skype, YouTube, Opera Mini, and WeChat. In terms of the attitude of students, respondents generally have a favorable attitude towards the use of social media. In the same line and a similar study in terms of the design and the context of the study, Williams and Adesope (2017) concluded learners’ positive attitudes towards the use of social media for educational purposes.
Goel and Singh (2016) explored the relationship between student’s beliefs and attitudes towards social media use in education on their academic performance. The results gleaned from a self-designed questionnaire scattered over a sample of management students from 3 private colleges and 2 private universities of Delhi NCR region. The study reported students’ positive beliefs and attitudes towards social media for exchanging academic activities and academic performance. The students used social media mainly for sharing their assignments, projects, and learning experiences.

Al-Qaysi et al. (2019) investigated the students’ attitudes towards using social media from the lenses of several attributes, including gender, age, governorate, year of study, social media application, experience, and interest. A total of 1307 students from eight different universities and colleges in Oman took part in the study through an online survey. The results showed that the study years and social media applications did not expose any significant effect on learners’ attitudes. In the mentioned context, WhatsApp was reported as the most predominant application used for educational purposes.

Considering the research objective on exploring the role of Facebook in boosting learners’ engagement, several studies have been conducted which indicated that using social media as an educational tool can lead to increased student engagement (Annetta et al., 2009; Chen et al., 2010; Dunne et al., 2012; Junco, 2012; Patera et al., 2008).

In the same line, Akbari et al. (2016) investigated the influences that using social networks for educational purposes have on learners’ engagement, motivation, and learning. Implementing an experimental design by making a comparison between a control group using face to face education and an experimental group using the social network Facebook, this study found that the Facebook group had significantly higher levels of engagement and motivation after the course than the face-to-face group.

In Turkey, Elverici and Karadeniz (2018) explored the effects of using social media on social presence in foreign language teaching. They made use of Facebook to teach English lessons to 8th grade students. Employing a mixed research design, they concluded that students who were taught with Facebook had higher social presence in their foreign language lessons.

With respect to the current situation, Nadeak (2020) analyzed the effectiveness of distance learning using social media such as Facebook, Instagram, and YouTube at Indonesian Christian University during the Covid-19 Pandemic. The results indicated that distance learning using social media is only effective for theoretical and theoretical practical courses, whereas in practice courses and field courses, using social media is felt to be less effective.

Based on the researchers’ viewpoints and observations, in the context of Iran, the administers of language centers seem reluctant in exploring the use of various social media tools for education. Therefore, a need is felt to identify and understand students’ attitudes towards the use of social networks for language learning during the current lockdown situation. Moreover, as it was mentioned, a bulk of research examined the role and effectiveness of Facebook in language learning and learners’ engagement; however, there is a dearth of studies which investigate the current issue in the context of Iran through the lens of sociocultural perspective.

With this regard, the current study aims to explore the learners’ attitudes toward using these tools, specifically the Facebook website, for language learning and the effectiveness of them in engaging the learners in the teaching process besides the other tools implemented by the researchers. Furthermore, learners’ attitudes are analyzed based on sociocultural perspectives. Based on the mentioned objectives, the following research questions are posed.
Research Questions

1. What are the learners’ attitudes toward implementing Facebook and its effectiveness as the medium of instruction?
2. How can the members’ attitudes be analyzed from a Sociocultural perspective?

Method

Participants

The purpose and the topic of the study were shared with learners in the What’s App chat group which was created to be in close contact with the learners. The participants include 87 language learners, between 18 to 41 years old, at a language center for the college students in Fasa in Iran, who were learning English for conversation using Big Blue Button software in five online classes supervised by the researchers. Sixty four of these learners including 42 male and 22 female learners participated in the study and filled out the questionnaires and responded to the interview questions. They were the students of intermediate classes with an approximately homogenous level of proficiency.

Research design

The present study enjoys a mixed quantitative-qualitative design to analyze learners’ attitudes and viewpoints considering Facebook as a supplementary resource. As mentioned, the researchers’ purpose was to make use of this tool to engage learners in the process of learning in the current quarantine situation in which there is no room to interact personally. Besides the language learning classes which were administered based on BigBlue platform, Facebook was used as a supplementary resource to engage learners and consolidate the points discussed in the classes.

To this end, learners were prompted to subscribe to the pages administered by some official institutes such as British Counsel to practice English and learn the points and hints in those pages and a specific page administered by the researchers to engage the learners in a stress-free environment to share their knowledge and discuss the points and topics previously mentioned in the virtual class. This page shares wall posts on grammatical points and vocabulary, provides topics for discussion and poses some mini-quizzes.

Different activities are provided by the administrators which cover different aspects of language learning form vocabulary training, checking grammatical structures of sentences to supplementary activities in order to consolidate the content provided in the e-learning classes which were provided under the title of the tutorial. Moreover, there was a section under the title of language reminders, comprised some tasks which ask the learners about the prepositions and basic sentence structures.

After a period of fifteen sessions of interaction with the learners through the BigBlue platform and subsidiary interactions through Facebook, an online version of the Facebook Online survey which was adopted from the Online Survey created and validated by Stevenson and Liu (2010) was shared with the users to seek their feedback on the process of their language learning concerning the content of the page. The survey seeks the respondents’ views about the usability, advantages, and disadvantages of these webpages. Moreover, to probe students’ reactions to Facebook and to find out about its benefits and limitations, the Effectiveness and Usefulness Survey, implemented by VanDoorn and Eklund (2013), was applied.
Since the questionnaires contained both the Likert scale items and open-ended questions, qualitative and quantitative data analysis were employed to explore the participants’ responses. SPSS statistical package is used to calculate the frequency and chi-square and theme analysis as a form of content analysis is employed to analyze the qualitative data. To consolidate the quantitative findings and to elicit some other information necessary for data interpretation based on the sociocultural framework, an online semi-structured interview was conducted randomly with fifteen volunteers.

Throughout the semi-structured in-depth interviews, the participants were allowed sufficient time and opportunity to think and respond to the questions in detail fully and freely. In this way, the researchers could go beyond their viewpoints and learn about their typical language learning practices and move forward to form the subsequent questions. Their responses were recorded and transcribed for further data analysis.

In addition, the extensive field notes taken during the interaction with learners through Facebook and during the class time. In the interview sessions, the data obtained from the questionnaires and field notes were used to stimulate learners’ recall of their ideas regarding their attitudes toward Facebook. This was used to help cross-check the in-depth interview and questionnaire data. In this way, to check the validity of the data and to prevent any misinterpretation, triangulation of the data was employed using multiple sources of data.

The data obtained from the interviews and field notes during the class time were coded and condensed into categories through several iterations, as suggested by Miles and Huberman (1994). Data generated in each phase through interviews, observations, or notes taken during the discussion sessions resulted in tentative findings, caused some minor changes to the subsequent interviews and data generation. Therefore, the obtained data were adjusted as the new data were generated and tested against the emerging themes.

In this study, the role of the researchers was that of a participant as the observer, which was characterized by a period of intense social interaction with the participants. During this period of interaction data were collected by the researchers in the form of field notes, questionnaire items, and a verbatim transcription of the interviews recorded from the participants.

**Results**

**Phase I: Analysis of Current Users’ Use of Facebook**

The purpose of the first questionnaire was to evaluate how the current user population used Facebook for language learning. This survey aimed to seek anonymous feedback from the users on their use of Facebook for language learning and revealed how and for what purposes users used Facebook. The questions focused on the areas, users visited most frequently, how often they interacted with other users in a nonnative language, and how this site affected their language learning.

Sixty-two users filled out the questionnaire, and their consent was taken to keep their answers confidential and use for the sake of a research paper. The summary of the questions and the descriptive analysis of their answers are illustrated in table 1. For each question the respondents are allowed to choose more than one answer; therefore, the total percentages of some questions are more than 100. Some of the questions which were not relevant to our analysis are omitted from the table.
Table 1: The summary of the questionnaire items and the frequency of the responses

<table>
<thead>
<tr>
<th>Question content</th>
<th>Options and its frequency</th>
<th>Options and its frequency</th>
<th>Options and its frequency</th>
<th>Options and its frequency</th>
<th>Options and its frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of time they were using Facebook</td>
<td>more than 6 months</td>
<td>3–6 months</td>
<td>1–3 months</td>
<td>less than 1 month</td>
<td>read about it in a newspaper/magazine</td>
</tr>
<tr>
<td></td>
<td>64%</td>
<td>18%</td>
<td>15%</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>How they first hear about lg learning groups</td>
<td>friend/classmate</td>
<td>Teacher</td>
<td>search engine</td>
<td>Blog</td>
<td></td>
</tr>
<tr>
<td></td>
<td>45%</td>
<td>5%</td>
<td>35%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>Reason to learn English</td>
<td>Business</td>
<td>For fun</td>
<td>Travel</td>
<td>For a class</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40%</td>
<td>22%</td>
<td>28%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>major goals for coming to Facebook</td>
<td>learning vocabulary</td>
<td>share my interest</td>
<td>finding native speakers</td>
<td>accessing multimedia content</td>
<td>developing a social group</td>
</tr>
<tr>
<td></td>
<td>32%</td>
<td>68%</td>
<td>45%</td>
<td>43%</td>
<td>51%</td>
</tr>
<tr>
<td>Most helpful areas of site</td>
<td>Vocabulary Training</td>
<td>Tutorials</td>
<td>L Reminder</td>
<td>People (chat)</td>
<td>Discussion Board</td>
</tr>
<tr>
<td></td>
<td>46%</td>
<td>54%</td>
<td>47%</td>
<td>56%</td>
<td>21%</td>
</tr>
<tr>
<td>Chatting with others of your TL</td>
<td>Always</td>
<td>Mostly</td>
<td>Rarely</td>
<td>with L1 speakers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55%</td>
<td>34%</td>
<td>7%</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>Impact of using Facebook on daily use of TL</td>
<td>Being more confident to speak in L2</td>
<td>Being more confident to read in L2</td>
<td>Frequent use of new vocab.</td>
<td>No impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35%</td>
<td>47%</td>
<td>63%</td>
<td>26%</td>
<td></td>
</tr>
</tbody>
</table>

It seems that most of the participants are familiar with the Facebook environment for more than 6 months and this implies that they know the different applications and the facilities they are provided with. Since, there is a facility on Facebook which makes the members know about their friends’ information, the pages each member liked or subscribed were suggested automatically to others. Therefore, the members became familiar with the pages on language learning through their friends’ profiles.

The participants learn English for different reasons such as business, class, travel, and fun. Their main purposes to use Facebook is to share their interests with their friends, develop their social group relationship, find native speakers for chatting purposes, download multimedia contents, and learn English vocabularies.

The learners favor the chatting section, which provides them the means to interact with other users. Tutorial, vocabulary training, and language reminder were the other activities the learners’ vote for. As it was shown in table 1, the learners preferred using the foreign language while chatting with others (55% of the respondents). 35% of the respondents believe that after joining these English
exploring learners’ attitude toward Facebook as a medium of learners’ engagement

Phase II: Effectiveness and Usefulness Survey

In order to explore the students’ perception of the effectiveness and usefulness of the Facebook language learning group, the online version of the Effectiveness and Usefulness Survey was shared and emailed to participants. The questions concerned user familiarity, communication, quality of the interactions, quality of feedback from the group administrators, and usefulness. Moreover, the educational use of these types of activities and communications are explored. The users were required to answer a 9-item questionnaire contained five Likert-scale questions and four short answer questions. The responses to the 5-point Likert-scale questions are summarized in the table 2.

Table 2: The summary of the quantitative part of the usefulness and effectiveness questionnaire

<table>
<thead>
<tr>
<th>Question content</th>
<th>Extremely</th>
<th>Very</th>
<th>Somewhat</th>
<th>Only a little</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarity with Facebook features</td>
<td>46%</td>
<td>34%</td>
<td>12%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Reliability of Facebook</td>
<td>22%</td>
<td>37%</td>
<td>19%</td>
<td>10%</td>
<td>12%</td>
</tr>
<tr>
<td>Helpfulness</td>
<td>52%</td>
<td>37%</td>
<td>6%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Amount of using Facebook</td>
<td>46%</td>
<td>24%</td>
<td>23%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Contacting the admin</td>
<td>72%</td>
<td>14%</td>
<td>4%</td>
<td>6%</td>
<td>4%</td>
</tr>
</tbody>
</table>

As it can be inferred, totally 80% of the respondents declared that they are highly familiar with different features and applications of Facebook. 46% of them used this website every day and 24% visit the website every few days; while, there were different viewpoints with regard to their perception about Facebook as a reliable website. 89% of respondents considered these groups as helpful and 72% of the participants were in close contact and interaction with the administrators every day which reveal a high amount of engagement.

About 26% of the respondents used chat boxes to have an interaction with other members. Based on the interview with some of the respondents they noted that they preferred chat boxes when they wanted to interact with the members in a dialectic way. The other alternative they favor were wall posts, photos, messages, notifications, and status updates. This kind of interaction was in the form of the members’ comments given on the status provided by the administrator.

Through open-ended questions, the users are required to explain the way the administrator was able to provide an adequate response to their questions. Analyzing the main themes of the respondents’ comments, it was seen that the comments were in the form of immediate feedback provided by the administrators through directly commenting on the users’ answers, not providing any prompt or notice to guide the users to give the correct answer by themselves.

With respect to this type of feedback, the respondents were satisfied; since they could find the answers very quickly; however, some of them believed that the direct and immediate answers may
not lead to learning. For example, one of the respondents declared that, “... The answers to the tasks provided are sort of one-shot game, if you cannot give the right choice the admin or the others provide the correct response.”

Another learner favors this type of feedback, declaring that “finding the answer immediately is timesaving thanks to the admin reply”; while, on the other hand, another learner declared that, “... the quick correction by the admin deters me from thinking about the response of searching to find the correct choice”.

Besides learners’ dissatisfaction with the explicit responses in the form of corrective feedback, the interaction between the admin and the users created an environment through which learners were in contact anywhere, anytime which they lack the formality available in formal face to face classroom interactions. Through the open-ended questions, learners posed some suggestions. The main points extracted from these suggestions implied the following points:

- The tasks and the contents should be provided based on a specific difficulty level, mainly in line with the contents provided in the classroom.
- The admin is suggested to collect the responses, provide prompts in the form of direct interactions, then wrap up the whole comments for the final answer.
- The authentic materials provided in the form of video clips and listening tasks were very alluring and conducive to learning. This type of task should be presented more than other forms of tasks.

With regard to the last point which required the participants to evaluate Facebook as an appropriate teaching tool, most of the respondents were in line with the proposed teaching procedure and voted positively. The first and foremost benefit of Facebook as a teaching tool that the learners recurrently referred to is the interaction among the learners and the administrator. The natural interaction is a distinctive feature of Facebook making it an appropriate teaching tool. These interactions are in the form of a text-based communication tool or the chat between the members.

**Discussion**

This semester has been exceptional concerning learning and teaching remotely using online tools. The educators had to make new arrangements almost overnight to move all communication and interaction with parents, students, and colleagues into virtual platforms. According to a recent report by Lessila and Kairikko (2020), teachers experienced the transition to online teaching in rather different ways, depending on how familiar the teacher was with online learning. They reported that only 32% of the teachers considered themselves as experienced online teachers already before the transition and the rest learned by doing as there was no other alternative all over the 186 countries affected by school closures due to the pandemic.

According to Li and Lalani (2020), the head and the community curator of Media, interviewed at World Economic Forum, in some contexts the unplanned and rapid move to online learning, with no training, insufficient bandwidth, and little preparation resulted in self-directed online pedagogy which needs evaluation and inspection. As an innovative self-directed teaching plan, applying Facebook as a supplementary tool to engage learners in the current study seems a successful experience, concerning the learners’ attitudes.

The results of the present study indicated that learners’ viewed Facebook as an effective learning tool and took a positive attitude toward it. The results shed light on the bulk of research done before the pandemic on using Web.2 technology in language learning –Connolly et al., 2019; Chen, 2018;
McCarthy, 2010; and Bosch, 2009, as some examples—Furthermore, concerning the current situation, the results are discordant with those indicated by Abbasi et al. (2020), favoring face to face interaction because of the lack of learners’ interest in online learning. Wang and Vásquez (2012) denoted that

... second language learning/acquisition research has been experiencing a paradigm shift, moving from a cognitive orientation to social orientation, from classroom contexts to naturalistic settings, from an acquisition metaphor to a participation metaphor, and from L2 learning to L2 use (Block, 2003; Firth & Wagner, 1997). Interestingly, this paradigm shift in SLA research seems to be in alignment with many of the fundamental attributes of Web 2.0 technology (such as ease of participation, communication, information sharing, and collaboration). (p. 413)

In line with the results of the present study, Al-Shehri (2011) mentioned that social networking sites have the potential to make learning more student-centered by providing room for students' interactions. As it was seen, implementing Facebook actualized the notion of “community” among language learners, as denoted by Mills (2011), by improving the relationship among individual learners. In line with what observed in the present study, Sun et al. (2008) and Naibaho (2019) asserted that students feel more comfortable to ask questions and express opinions through social media. Moreover, Nadeak and Naibaho (2020) stated that online learning eliminates awkward feelings so students can express their thoughts and ask questions freely. This is in line with the Vygotskian Sociocultural theory, which states that social interaction and cultural artifacts within one’s environment play a fundamental role in the process of L2 cognitive development. According to Lantolf (2000) and Lantolf and Thorne (2006), social interaction is considered as an integral process in language learning. The Vygotskian Sociocultural theory, as Cheon (2008) cited, claims that human cognition is formed through social activity and learning a second language is understood “as a semiotic process attributable to participation in social activities rather than internal mental processes solely by the individual” (p. 1).

As it was observed, through Facebook interactions, the social interaction is broadened to communication among the members’ different social background and socioeconomic status. The interactions were not confined to face to face interactions in the classroom; however, Facebook provided an opportunity for diverse learners to join and participate in the class discussion on different topics without any spatial and temporal limitations. The form of learners’ engagement sets the context for the learners to negotiate and construct meaning based on their identity and prior knowledge. This led to self-initiated learning, as Yu et al. (2010) noted, in which “individuals create a system of information and support by building and nurturing personal links” (p. 1494).

Moreover, in the present study, based on the researchers’ class observations, learning took place when there was an interaction between the learner and the teachers and in cooperation with peers. This interaction mostly took the form of novice-expert interaction or the instruction from a more knowledgeable peer. According to Akbari et al. (2016) students’ engagement and motivation can increase while they are involved through social networks which can lead to more fruitful and practical language learning experiences. In the same line, Rosenshine (1982) argued that learning occurs when there is a learning environment which is designed to encourages students’ active participation and interaction.

Furthermore, Facebook interactions provided a means for mediating learning as a social activity. This point was observed when a status or a new remark was posted on the wall of any group members, different types of interactions took place which enabled the learners to construct meaning. The interactions and form of engagement are in line with the notion of the zone of proximal development developed by Vygotsky (1978), since learners’ interaction either initiated by the
administrator as the expert and the group members as the novice or the peers, in general, formed means of moving the learners toward their potential capability. VanDoorn and Eklund (2013) referred to Facebook as a learning tool and a learning environment to offer a win-win which allows "institutions to offer dual-mode courses across on-and-off campus cohorts and develop learning communities that facilitate positive learning outcomes (p. 1).

In the engagement activities and consolidating tasks provided by the teachers as the more knowledgeable and significant others through Facebook wall posts, they scaffolded the learners' learning process by creating an atmosphere in which the teacher provide the means for the students' higher engagement in classroom tasks which can be conducive to better achievement in terms of skills and knowledge. The scaffolding, as Donato (1994) denoted, forms an instructional structure whereby the teacher models the desired learning strategy or task then gradually shifts responsibility to the students.

In this study, scaffolding through the collaborative form of learners' engagement, as Cheon (2008) mentioned, acknowledges the benefits of peer interaction for L2 development by supporting the idea that expertise may be distributed among individuals rather than residing in one individual. The instructions employed dialogically constituted an inter-psychological mechanism that promotes the learners' internalization of the knowledge which was co-constructed in a shared activity.

Therefore, it can be inferred that Facebook offers language learners the potential for a collaboration-oriented and community-based learning environment. This is in line with the results achieved by Antenos-Conforti (2009), Dippold (2009), Kessler (2009), Ducate and Lomicka (2005), Tu et al. (2008). Facebook can be deemed as an effective tool for learners’ engagement because its structure lies in the nature of the social interaction between two or more people with different levels of skills and knowledge. Teachers can use this tool to help learners to move into and through the next layer of knowledge or understanding, as Vygotsky (1978) mentioned. Moreover, according to Roblyer et al. (2010), Facebook can improve social connectedness with learners.

According to Akbari et al. (2016), because of the learners' engagements in different types of activities posed by social networks, “it may be expected that students become more connected to the world outside their classroom, which promotes more genuine interaction with various resources, coaches, peers and experts” (p. 3).

In line with what was observed in the current study, As Woo et al. (2007) stated, Facebook can promote constructivist learning through authentic activities related to the vast amount of information available on the Internet. Instructors can provide students with access to a substantial variety of tasks available in a combination of formats, such as text, graphics, audio, and video. Moreover, these multimedia resources can contribute to an increase in students' motivation.

The way Facebook was employed in the current study can be assumed as an example of “online collaborative space” also known as “computer-supported collaborative learning (CSCL)” (Resta & Laferriere, 2007) which provides learners the chance to work together in an interactive, flexible online environment and align to sociocultural perspective. As it was seen, Facebook set the context for communication using a variety of ways, including text, speech, and multimedia contents which is in line with the Vygotsky's theory of the importance of language use for learning as the main principle of sociocultural theory.

In this study, Facebook was a platform to feed learners with tasks based on their interests and needs, and provide opportunities for their interactions and collaboration in a reflective way and as Bonk and Cunningham (1998) mentioned, it facilitates authentic experiences and learning communities for learners in the so-called online spaces.
Conclusions, implications and limitations

The current study explored the Facebook users’ attitudes toward using this tool for language learning and tried to analyze the usefulness of this medium as an engagement technique besides the other educational means implemented during the Covid-19 quarantine. Based on the qualitative data gleaned from the learners’ self-reports throughout the semi-structured interviews, field notes and the researchers’ observations and the quantitative results of the questionnaires, it was concluded that using Facebook as a medium for language learning was very effective in increasing the confidence of the participants of the study engaging them in a motivating way, and consolidating the points discussed previously in the class sessions. The learners favored the chatting section, which provides them the means to interact with other users. Tutorial, vocabulary training, and language reminder were the other activities the learners used frequently to boost their knowledge of the language.

In conclusion, it was revealed that Facebook provided an interpersonal and interactive environment through which learners can interact naturally. It works as a way of fostering social interaction between the learners. In line with the sociocultural perspective, Facebook, as a powerful mediating learning tool, is regarded as an affordance of opportunities for students to collaborate and share knowledge. The interactions between the learners and the teacher were regarded as scaffolding by a significant other which occurred in an online collaborative learning space.

Based on the results, it is suggested that the educational actors including the teachers, tutors, administrators make use of social networking media such as Facebook, as an efficient and promising medium for the educational process and self-development. Moreover, Facebook can have a potential role in promoting L2 teaching and learning thanks to its popularity and prevalence in students’ lives. During the current situation of virtual education because of the pandemic lockdown, this medium can serve as an effective solution to engage the learners in a motivating and entertaining environment that help learners interact naturally and lessen their quarantine anxiety.

The main limitations of our research were that it was carried out on a small scale and used a limited population which may deter a strong generalization of the results of the study. Another obstacle in conducting this research was that in Iran Facebook is filtered and the learners had to use anti-filter applications to use this website which was a burden and decreased their net speed.

References


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Does Virtual Field Experience Deliver? An Examination into Virtual Field Experience during the Pandemic and Its Implications for Teacher Education Programs

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Abstract
This study attempted to examine whether academic performance of pre-service teachers (PST) in virtual field experiences was the same as that of their peers in the previous semester who had regular face-to-face field experiences. Data for this study included PST' scores in three course sections in the Spring 2020 semester at a mid-size public university located in the Midwest of the United States where all of their field experiences were conducted virtually and compared with that of their peers in the Fall 2019 semester when all of their field experiences were conducted face-to-face. Our findings indicated that PST’s academic performance in the virtual field experiences was the same as that of their peers in the previous semester who had regular face-to-face field experiences.

Keywords: virtual field experience, field experience, preservice teachers, teacher education, COVID-19

Introduction
A fundamental component of almost all teacher education programs in the US is the provision of field experiences for preservice teachers (PST) (Eisenhardt et al., 2012; Hanline, 2010; Lastrapes & Negishi, 2012). Field experiences are often defined as formal, required school and community activities within a teacher preparation program in which the PST completes for learning and professional development. Research has shown that field experiences broadened PST understanding of effective classroom instruction and established a platform for applying theory and translation of research into practice. Specifically, field experiences enhanced PST learning of skills needed to individualize instruction (Donna & Hick, 2017), expanded their knowledge gained from their teacher education programs to greater meaning (Philipp et al., 2007), developed PST more sophisticated understandings of the teaching and learning practice (Burns et al., 2016), and helped boost their confidence and familiarize themselves with the working context.

The common practice of PST field experiences in teacher education programs is intentionally exposing PST to schools under the guidance of program faculty and trained teacher mentors throughout the preparation program (Kennedy & Archambault, 2012). These field experiences are often closely integrated with coursework, assessment practices and program goals (Hemmings & Woodcock, 2011).

Like many other peer teacher education programs nationwide, this study’s teacher education program also embraced fieldwork experience for its PST. They were expected to visit face-to-face classrooms and observe how classroom teachers interact with students and interact with each other daily. Thanks to a close partnership between the University, which is a mid-size public university located in the Midwest of the United States and its public school network, sending PST to school for field experience and/or student teaching was never a problem. All public schools in the partnership network welcomed its students. The availability and friendly learning environment that those public
schools offered made those face-to-face fieldwork arrangements smooth and easy, and therefore pushed the idea of virtual field experience off the table. However, with the pandemic in 2020 forcing most universities and public schools to shut down, resulting in PST not having regular face-to-face field experience that their peers used to enjoy, faculty in the teacher education program who was in charge of field experience-related assignment had to convert their conventional face-to-face field experience into virtual field experience to allow learning to continue. The purpose of this study was to examine whether PST’s academic performance in those virtual field experiences was the same as their peers in the previous semester who had regular face-to-face field experiences.

**Description of Virtual Field Experience**

The practice of training of preservice teachers is to experience students in an observation setting. In their second level of field experience, preschool teachers complete eight to ten hours of student observations to complete their second level case study. These observations take place for two-hour periods at local schools. Preservice teachers are assigned to a school and classroom based on the developmental level that they plan to teach in. In the spring of 2020, preservice teachers were unexpectedly withdrawn from the classrooms they were assigned to due to COVID-19.

Preservice teachers were then assigned a virtual classroom experience via the Teaching Channel website. The videos from the Teaching Channel were not made exclusively for field observation. The teaching channel videos have been used previously with educational courses to show students interacting with teachers teaching content. Preservice teachers could use the Teaching Channel videos to complete their field visits virtually as in-person field visits were obsolete due to COVID-19 restrictions.

Students were given the same developmental level that they had been observing throughout the semester. The Teaching Channel provides a virtual classroom observation via the website’s video teaching demonstrations. The videos were of different developmental levels in core academics areas. The core academic areas were the same grade levels that the preservice teachers would observe if they were allowed in schools for face-to-face observations. Students logged into their learning platform, Canvas, watched the video of their assigned developmental level and used the same field observation paperwork and case study format as they previously did for face-to-face student observations. The virtual observations gave the students multiple opportunities to watch their assigned video. Students could rewatch to notice the developmental characteristics assigned in their case study due to the chance to watch their assigned video.

**Literature Review**

*Blended Learning*

Despite the fact, face-to-face interactions were the predominant mode of instruction in classrooms and for the training of preservice teachers (PST) in a classroom context, virtual learning and virtual field experiences have arguably received more attention from researchers. For instance, Geiger and Dawson (2020) studied a transition to virtual learning and provided implications for in-service and preservice teacher educators, particularly during a pandemic such as the COVID-19 pandemic. The study concluded that professional development related to blended learning could benefit traditional instruction and pandemics. A similar observation was made by Burns (2011), who discussed the phenomenon of distance education for teachers’ training and developed a detailed guide for different modes, models, and methods of distance learning that could be employed. These included audio-based models, televisual models, computer-based multimedia models, web-based models,
and mobile models. However, despite these models being innately different, Burns (2011) argued that converging and blending multiple distance learning modes and face-to-face sessions to reach different types of learning and achieve different instructional objectives, thus supporting Geiger and Dawson’s (2020) conclusion.

Similarly, Masats and Dooly (2011) argued that video case studies were often utilized in teacher training programs to develop just one area of competence and, therefore, sought to develop an integrative model that met diverse learning objectives and competencies while using videos effectively to guide student teachers towards developing professionally. The result was a holistic approach that combined various aspects of video learning and traditional instruction methods to increase the number of competencies targeted by teacher training programs. In essence, Masats and Dooly (2011) based their research on the arguments made by Burns (2011) and Geiger and Dawson (2020) about the advantages of blended learning that combines different virtual learning characteristics and traditional teaching methods to achieve maximum benefits.

**Effectiveness of Virtual Instruction**

While it has been established that combining traditional face-to-face and virtual instruction of PST may result in more significant benefits, it is also equally important to determine whether there are any differences between the use of traditional methods and virtual methods with regards to the effectiveness of the PST. Chisenhall (2016) investigated the sense of efficacy of PST regarding student engagement, classroom management, and instructional strategies and found no statistically significant differences between the sense of efficacy of PST who used traditional face-to-face observations and those who used video observations. These results were similar to Hodge et al. (2002) findings. They sought to provide a comparison between the effects of off-campus and on-campus practicum types on the attitudes and perceived competence of physical education teacher education students when teaching students with moderate to severe mental retardation or physical disabilities. Their study’s findings showed that there were no significant differences between the attitudes and perceived competence measures across the two practicum types.

**Benefits of Virtual/Video Learning**

Nevertheless, Baecher and Connor (2010) noted that using video analysis in classroom practice for PST of students with learning disabilities possessed both benefits and limitations compared to traditional methods. The benefits of using video analysis included the fact that it provides a powerful medium for bridging theory and practice, the development of pedagogical knowledge through the study of specific dimensions through video cases that are specially designed, encouragement of reflection skills by allowing the revisit and investigation of missed or complex concepts, and the generation of cognitive dissonance which limits complacency (Baecher & Connor, 2010). On the other hand, the limitations of using video analysis in classroom practice for PST of students with learning disabilities included an initial experience of anxiety arising from simultaneous teaching and use of technical equipment, the need for instructors to have adequate expertise in the use of video as a medium for observing classroom interactions, and the need for the education institution to possess sufficient resources and personnel to maintain a video library that is of acceptable quality (Baecher & Connor, 2010).

These observations by Baecher and Connor (2010) were supported by Baecher and Kung (2011). They stated that the three premises that supported by research for the use of video analysis by PST in training included the need for a high scaffolding for novices to shift them away from superficial and
evaluative viewing of classroom video, the importance of cognitive dissonance among teachers to make them see beyond their expectations and the requirement for replaying and reviewing as a way to improve reflective skills. The role of video in improving reflective skills in PST is also highlighted by Coffey (2014), who studied the use of video in developing skills in reflection teacher education students and concluded that PST found that the use of video, in conjunction with written feedback from their instructors enhanced their abilities to reflect on their teaching skills. Furthermore, Watters et al. (2018) conducted an experiment to determine to what extent PST's interpreted pedagogical practice from theoretical perspectives after watching videos of teachers implementing lessons in a mathematics class and determined that videos and multimedia had a generally positive impact when used to interactively to promote discussion and debate about practices for PST. This is because using video analysis lessons that highlight critical aspects of quality teaching by PST helped them develop the knowledge and skills to undertake the tasks in a professional environment. Cannings and Talley (2003) also supported Baecher and Connor's (2010) argument that video analysis in classroom practice for PST assisted in bridging the gap between theory and practice by arguing that PST lacked the experience to meaningfully observe the classroom’s complex and rapid interactions in real-time, hence the need for video case studies.

However, Cannings and Talley (2003) provided a caveat to the use of videos in the education of PST and noted that the use of the best video would not impact the teaching practice unless the PST can observe the videos and develop an understanding of how to get a reflection of their practice and that of others. This thought is reiterated by Tekkumru-Kisa and Stein (2017). They argued that teachers do not learn how to improve their instructional practice by watching the reflection of classroom videos but through the careful selection and embedding of the videos in professional development in a manner that assists the teachers to notice and reason about important aspects of instruction and learning that appear in the videos.

Nonetheless, McGarr (2020) also highlighted other advantages of virtual training of PST by stating that virtual simulations in teacher education addressed challenges such as the overwhelming nature of school placement experiences and the demands associated with class management. Through virtual simulations, PST can experience the challenging aspects of student behavior in a less pressurized environment, where they can make mistakes without fearing negative effects on academic progression (McGarr, 2020). McGarr (2020) also further argues that virtual simulations give PST the unique opportunity to gain different classroom experiences in a more controlled and structured manner. This is in line with Borko et al. (2011) thoughts. They explored the uses of video in practice-based professional development programs. They argued that video clips posed substantive questions and facilitated productive conversations and professional development that encouraged PST to examine central aspects of instruction and learning, thus enhancing their abilities to provide quality education to students. Like McGarr (2020), McPherson et al. (2011) conducted a study evaluating the use of a web-based simulation with PST and in-service teachers of special education students and found that teaching simulation resulted in positive improvement in teacher preparation, attitudes, and the students’ perception of inclusion. As a result, McPherson et al. (2011) concluded that teaching simulations are a means for current and future teaching educators to gain a safe environment to practice teaching, multiple repetitions accelerated time, rapid feedback, and exposures potential of games and simulations in learning.

Dalvi and Wendell (2017) sought to establish a means of measuring the benefits of video cases for PST regarding the responsiveness in engineering. The study described the evidence supporting the validity and reliability of the video case diagnosis tasks, a tool for measuring the teaching responsiveness of PST in engineering. Findings showed that the video case diagnosis tool was valid and reliable in assessing the responsiveness of PST with regards to three critical aspects.
The three aspects are noticing the student ideas towards engineering design projects, noticing the students’ engineering design practices, and providing productive responses to support the further development of the ideas and practices (Dalvi & Wendell, 2017).

**Application of Virtual Learning**

Various platforms have been established to leverage the benefits of virtual platforms for the training of PST, as has been established by literature. One such platform is the Teaching Channel website, which is described as a platform for creating an environment that allows teachers to watch, share, and learn new techniques that will enable them to assist students to grow (Reyes III, 2019). Reyes III (2019) provided a review of the website and argued that one of its strengths is how it addresses ways for the strategic engagement, assessment, and challenging of students in a classroom. The website also explores and applies non-cognitive and non-school-content material such as how learning is affected by happiness and mindset, which research has shown to be important elements in improving learning, school retention, and student engagement (Reyes III, 2019).

In conclusion, the use of videos and other virtual methods have demonstrated acceptable levels of efficacy and benefits in the training of PST, even though there exist some limitations to their use. Some of the main benefits of virtual or video learning for PST that have been highlighted in the literature include the creation of cognitive dissonance, improvement of reflection skills, effective bridging of theory and practice, and creation of conducive non-pressurized environments for learning. However, the achievement of these benefits is not guaranteed and depends on the effective use of the methods. The use of blended learning methods, which combine both virtual and traditional methods, have also been supported extensively by literature. This is because blended learning provides the added advantage of catering to different needs through different instruction methods. Nonetheless, the use of virtual methods in the education of PST seems to be the future, with virtual platforms such as the Teaching Channel website being established to leverage its benefits.

**Research Method**

The purpose of this study was to examine whether PST’s academic performance in those virtual field experiences was the same as that of their peers in the previous semester who had regular face-to-face field experiences. Data for this study included PST’s scores for the language development case study assignment in three course sections in the Spring 2020 semester when all of their field experiences were conducted virtually and compared with that of their peers in the Fall 2019 semester when all of their field experiences were conducted face-to-face. In total, there were 123 PST students in three course sections in the Spring 2020 semester with the virtual field experience and 110 PST students in three course sections in the Fall 2019 semester with the regular face-to-face field experience.

According to those course sections’ instructors, PST’s scores were statistically consistent in the previous semesters. The three sections of preservice teachers were required to have a TaskStream subscription. The students are assigned to a case study on growth and development and exceptionalities of their assigned student developmental level. Each student completed a case study in each of the developmental areas. The developmental areas are physical, emotional, social, language, and cognitive. The students were scored on a nine-point rubric for the growth and development case study and a six-point rubric for the exceptionalities case study. The same rubrics were used when the
students had to move to virtual student observations. The course had three sections. Each section is taught by two instructors, who co-teach the course. The course is 120 minutes, with 60 minutes devoted to the growth and development of “typical” students and 60 minutes focused on introducing exceptionalities or “atypical” students.

Data were input into IBM SPSS Statistics 25 to run an unpaired t-test. An unpaired t-test, also known as an independent t-test, is a statistical procedure whose purpose is to compare the averages/means of two independent or unrelated groups (PST’s scores in the Fall 2019 semester vs. PST’s scores in the Spring 2020 semester) to determine whether there is a significant difference between the two groups.

Findings

This study aims to investigate whether PST’s academic performance in the virtual field experiences during the pandemic COVID-19 was the same as that of their peers in the previous semester who had regular face-to-face field experiences by comparing the two groups’ scores in three course sections. Tables 1 and 2 summarize the results of t-test analysis.

Table 1: Descriptive t-test Analysis of the Two Groups

<table>
<thead>
<tr>
<th>Score</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fall 2019</td>
<td>110</td>
<td>.9570</td>
<td>.15263</td>
<td>.01455</td>
</tr>
<tr>
<td></td>
<td>Spring 2020</td>
<td>123</td>
<td>.9282</td>
<td>.18091</td>
<td>.01631</td>
</tr>
</tbody>
</table>

Table 2: Result of Independent t-test

<table>
<thead>
<tr>
<th>Score</th>
<th>Levene’s Test for Equality of Variances</th>
<th>T-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>Equal variances assumed</td>
<td>2.058</td>
<td>.153</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>1.317</td>
<td>230.239</td>
</tr>
</tbody>
</table>

As shown in Table 2, the two-tailed P value equals 0.193. By conventional criteria, this difference is considered to be not statistically significant. In other words, PST’s academic performance in the virtual field experiences due to the COVID-19 pandemic was the same as that of their peers in the previous semester who had regular face-to-face field experiences.
Discussions and Implications

The rapid transition to remote learning both in higher educational institutions and P-12 schools across the U.S, primarily in the form of online learning, helped prevent learning from being disrupted during the COVID-19 crisis. Nonetheless, this emergency conversion without any preparation or anticipation also caused uncertainty and mayhem for many instructors and students depending upon their preparedness and competencies to teach and/or learn in online environments. This is especially true to teacher education programs that included field experiences for PST. Before the pandemic, PST fieldwork experience in almost all teacher education programs was face-to-face. PST would visit onsite classrooms and observe how classroom teachers interact with students and students interact with each other daily. The pandemic forced most universities and P-12 schools to shut down, resulting in PST not having regular face-to-face field experience. Teacher education programs and their faculty either canceled those onsite field experiences or converted their conventional face-to-face field experience into virtual field experience to allow learning to continue.

As discussed by researchers and educators (Hodges et al., 2020; Vu et al., 2016), online learning or eLearning carries a stigma of being lower quality than face-to-face counterpart even though research shows otherwise. The quick and unprecedented transition to online learning in a general and virtual field experience for PST, in particular, could potentially seal many people’s perceptions of online learning as a weak alternative. Our study’s finding indicated that if properly arranged and done right even in emergencies without any anticipation, virtual field experience for PST could still be delivered. More specifically, PST’s academic performance in the virtual field experiences due to the COVID-19 pandemic was the same as that of their peers in the previous semester who had regular face-to-face field experiences. PST could engage with the virtual field observation videos because they could go back to the video to watch specific skills they were writing about in their field observation case study. This result echoed what previous researchers (Burns, 2011; Chisenhall, 2016; Geiger & Dawson, 2020) confirmed the efficacy of virtual field experiences for PST.

Conventional onsite field experiences in teacher education programs may still be dominant, but not all teacher education programs can afford to locate quality field experiences for their PST all the time. The technology exists or can be created, and it may ameliorate the situation like what happened during the pandemic. Instead of canceling or delaying the learning process, teacher educators could create a virtual field experience for their PST, and if done right, the quality is as high as the onsite counterpart. For future use, the virtual field observations can also be an option for online students who do not have access to an in-person classroom or work during school hours and cannot complete in-person field observations. Virtual field observations can also help those students who are also currently teaching but need to complete field hours in a different type or grade level.

References


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Lessons learned developing a massive open online course in implementation research in infectious diseases of poverty in low- and middle-income countries

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Abstract
This study uses a case study approach to examine the development of a massive open online course (MOOC) on intervention and implementation research in infectious diseases of poverty for learners in low- and middle-income countries (LMICs). Implementation research (IR) seeks to understand and address barriers to effective implementation of health interventions, strategies, and policies. In recent years, IR has attracted increased interest, and corresponding demand for training, however, current training opportunities are not easily accessible to learners in LMICs. In 2017, the MOOC was introduced to a diverse range of learners to enhance access to training materials and has been offered yearly since. Findings are based on the experiences of the MOOC working group which included developers and facilitators, and on interpretations of data such as forum discussion activity and Facebook posts. The use of material from local contexts and in local languages, and professional facilitation of discussion forums was identified by the working group to be key considerations in developing the MOOC. Other findings include the importance of using clear instructions and preparing discussion questions to stimulate learner engagement. These findings add to the limited knowledge of MOOCs developed for LMICs and are of value to others developing professional development MOOCs in LMIC health contexts.

Keywords: MOOC, online learning, learning design challenges, professional development, learners from low- and middle-income countries, implementation research

Introduction
Implementation research (IR) develops strategies to improve access and uptake of health interventions by the populations in need and plays a critical role in improving the delivery of disease control interventions. Recent years have seen an increase in interest in IR and a corresponding increase in demand for IR education, resulting in the growth of training programs and university courses (Carlfjord et al., 2017; Chambers et al., 2016; WHO, 2019). Many of these programmes and courses,
however, cannot be accessed by health professionals in low- and middle-income countries (LMICs). This is despite the finding that the need to address implementation bottlenecks is often greatest in LMICs, where the human resource for health research is weak or non-existent and health systems are underdeveloped (Sheikh et al., 2020).

To address the gap in IR education in LMICs, The Special Programme for Research and Training in Tropical Diseases (TDR) has developed training courses, including a Massive Open Online Course (MOOC) on IR on infectious diseases of poverty in LMICs (Launois et al., 2019). TDR focuses on intervention and IR to better understand and address barriers to effective implementation of health interventions, strategies, and policies. As MOOCs have been used for professional development purposes worldwide, including in LMICs (Czerniewicz et al., 2014; Deacon et al., 2017; Garrido et al., 2016; Hrdličková & Dooley, 2017; Murugesan et al., 2017) where they can assist with the training needs of the health sector (Liyanagunawardena & Aboshady, 2017), they therefore seemed an obvious choice to provide flexible and free IR education to health professionals in LMICs.

In 2017, the TDR IR MOOC was introduced to a diverse range of learners in LMICs and has since been offered yearly. The IR MOOC has been disseminated through a network of Regional Training Centres (RTCs) supported by TDR (WHO, 2021). This paper outlines the process used to develop the MOOC and the considerations and challenges that were found to be relevant for a MOOC on IR aimed at professional learners in LMICs.

**Methods**

This study employs a case study approach to examine the process of developing the IR MOOC (Crowe et al., 2011). The case study approach allows for an in-depth exploration of an issue in its real-life context - in this case, the lessons learned during the development of the TDR MOOC in IR by those involved in the process. This article describes the three phases of the development of the MOOC and the challenges identified and lessons learned in each phase: 1) the planning phase; 2) the development phase; and 3) the implementation phase. Findings are based on the considerations, experiences and perceptions of the MOOC working group (which includes several of the authors of this article) both in preparation for, and during the development and implementation of the MOOC. Findings are also based on the working group’s interpretation of MOOC data such as discussion forum activity and Facebook discussions. These findings were documented at the time of the planning, development and implementation of the MOOC as well as after completion of the MOOC, particularly in connection with the preparation of this article. These descriptions therefore provide valuable insights into the considerations that played a role in the development of the MOOC, the decision-making of the working group, and the lessons learned by the working group.

**Lessons learned**

**The planning phase**

**The rationale for the MOOC**

A MOOC is an online learning tool that delivers learning objectives through a series of short videos, formal presentations, recommended readings, discussion forums and automated assessments. With the absence of subscription fees, anyone with a reliable internet connection can enrol and access the course resources, interact, and share knowledge with the respective peers, making education more accessible to a massive audience. While some MOOCs charge fees for certificates or proof of enrolment, a MOOC is intended to be ‘open’ to anyone to enrol in and therefore free.
In 2019, it was estimated that 110 million learners participated in around 13500 MOOCs developed by over 900 universities (Shah, 2019). MOOCs were originally promoted as a means of enhancing social mobility and democratising education, making it available to anyone with a device and internet connection, yet the reality has not borne that prediction out (van de Oudeweetering & Agirdag, 2018). Instead, the majority of MOOC participants are well-educated, employed, male, middle class, and from high income countries (HICs) (Christensen et al., 2014; DeBoer et al., 2014; Escher et al., 2014; Liyanagunawardena et al., 2015; van de Oudeweetering & Agirdag, 2018).

Despite this, however, MOOCs have benefited learners in LMICs. Furthermore, completion rates are reported to be higher in professional development MOOCs in LMICs between approximately 30% and 68% (Garrido et al., 2016; Hone & El Said, 2016; Hrdličková & Dooley, 2017; Murugesan et al., 2017) than in MOOCs in general in HICs where retention rates sit at approximately 5–10% (Breslow et al., 2013; Hew & Cheung, 2014; Zhenghao et al., 2015).

TDR developed in 2016 and introduced in 2017 the IR MOOC to a wide range of learners to enhance access to IR training materials. By doing so, TDR aimed to improve access to its training courses from a centralised and localised RTC to a global and decentralised mode of delivery.

Identification of target audience

The first step was to define the target audience for the TDR MOOC on IR to accurately tailor the course content to meet the academic level and abilities of the participants.

Three main target audiences were considered for the MOOC:

1) Public health officers, such as policymakers, disease control programme managers.
2) Academic researchers from universities or medical research institutions; and
3) Students who received a scholarship through the Master of Public Health funded by seven universities supporting TDR postgraduate schemes, as well as students who participated in face-to-face short courses on IR at RTCs.

Defining the target audience was important to:

1) ensure the appropriate pitch of the academic level of the MOOC. The language used had to avoid any jargon and ensure consistency and comprehension by all audiences globally.
2) identify an appropriate length of the MOOC. For example, public health officers from LMICs could only access the MOOC periodically due to their pre-existing commitments and heavy workloads; and
3) decide on the language to be used. Many health professionals working in LMICs are non-English speakers.

The format of the MOOC

In preparation, the MOOC team participated in existing MOOCs, which allowed them to better understand the logistics, pedagogy and technical skills required to develop a MOOC.

TDR decided to spread the delivery of the content of the MOOC over five weeks with one module per week. Each module, in turn, comprised five chapters of ten minutes each. The length of these chapters was considered adequate for knowledge and skills transfer in a working environment where time is constrained.

The course was developed in English, however, to ensure equity, subtitles were made available for non-English speaking participants, initially in French and Spanish. The MOOC was developed in
English due to it being the research language, while French and Spanish were used to reach more people and for equity purposes. For example, those in French-speaking countries, such as those in Sub-Saharan Africa, may not speak fluent English. Likewise, Spanish was used to ensure equity in Latin America. For quality assurance purposes, the subtitles were back-translated by native speakers, who were familiar with the domain language of IR. Due to increasing demand, the MOOC has since been made available with full translations in French, Spanish, Chinese, Arabic and Russian. This covers the six official languages of the WHO.

The development phase

Recruiting a team

A dedicated working group with clear roles and responsibilities was recruited. The team included technical professionals to write, review and present the materials and a support team composed of videographers, video editors, graphic artists, text editors and a communication officer.

One of the challenges identified by the working group was how to contextualise the course to the target audience in LMICs. The MOOC contents needed to be developed by and for LMICS, with relevant real-life examples. As findings reveal that MOOCs in LMIC contexts have been both relatively less researched and adopted than in other parts of the globe (Rasheed et al. 2019), this also led the team to initiate research regarding the development of the MOOC, how participants received the MOOC, and any changed behaviours and professional outcomes as a result of participating in the MOOC.

An extensive review of the literature on IR using PubMed revealed there to be few experts with IR capacity building in LMICs. Despite this, however, TDR identified members (scientists working on IR who were either researchers or implementers) to be a part of the MOOC working group and attend an initial workshop. In this workshop, members decided on the modular structure and the curriculum of the MOOC and assigned each module of the MOOC to a developer responsible for adapting the contents to a MOOC. Among the 16 experts who were invited to the first workshop, ten were from LMICs (Botswana, China, Colombia, Ghana, India, Indonesia, Kazakhstan, Kenya, Philippines and Tunisia) and six were from high-income countries, including Germany, Portugal, Switzerland, UK and USA and had relevant experience in IR in LMIC contexts. During the first workshop, the course structure and format were agreed upon, which included online video training for the five modules. A second workshop was organised for all the identified developers to review and harmonise the contents of each module and select presenters able to present authoritatively on camera while delivering the lectures and presentations.

With respect to the support team, TDR identified the Ecole Polytechnique de Lausanne (EPFL) in Switzerland, due to their extensive and wide experience in developing different MOOC platforms particularly for LMICs. The support team was coordinated by an administrator with proven high-level project management skills who ensured the timely execution of the project.

Developing the curriculum

As with any training course, a MOOC requires curricula with clear learning objectives and delivery timelines (Pickering et al., 2017; Zhu et al., 2018). A specific topic must be allocated for each week of the course following a logical pathway to optimise the learning experience. The development of realistic workloads and timeframes for completing the MOOC requirements is necessary. Subtitles were required to reach learners with disabilities (mainly hearing disabilities) and translated subtitles...
were required for learners whose language of instruction is not English (see above in *The format of the MOOC*). The copyright agreement for using videos needed to be obtained.

The working group identified that it was crucial to use context-specific examples in the MOOC. Local and context-specific content has been found to be lacking in MOOCs in LMICs (Czerniewicz et al., 2014; King, Luan et al., 2018; King, Pegrum et al., 2018; Nkuyubwatsi, 2014), and this has been raised as a concern by learners (Launois et al., 2019). Contextualising content may benefit learners and may even increase retention rates (Castillo et al., 2015; Daniel et al., 2015; Nkuyubwatsi, 2014; Richter & McPherson, 2012). Indeed, MOOC completers cite interesting and appropriate content as one of the factors that contributed to their motivation to learn and engage with the course (Hone & El Said, 2016).

In addition to a series of short ten-minute long videos, clear instructions were provided on how to take quizzes and respond to the assignments that were relevant to each module. This was done to promote participants’ engagement, illustrate the IR concepts and enhance context-specific learnings. For example, the TDR MOOC on IR consists of five modules delivered over a five-week period, with an extra 1–2 weeks provided for the final assignment. The MOOC was structured with the following contents offered in each module:

- **Module 1**: The definition of IR and the assessment of the appropriateness of existing disease control programmes
- **Module 2**: The identification of challenges of various health settings
- **Modules 2 & 3**: The development of new interventions and strategies by working with communities and stakeholders
- **Module 3**: The specification of implementation research questions and design of rigorous research projects
- **Module 4**: The identification of IR outcomes and evaluating effectiveness
- **Module 5**: Plans for scale-up implementation in real-life settings

**Designing appropriate assessments**

In general, MOOCs engage thousands of learners, and despite the inherent difficulties involved, it is important to provide all of them with timely feedback. Whether using quizzes or peer assessments, the assessments must align the intended learning objectives. For the IR MOOC, multi-choice automated quizzes were designed with detailed feedback for each of the responses at the end of each module. To monitor learners’ progress, a short paragraph after each response was provided to explain why the learners’ responses were correct or incorrect.

The final assignment included the development of a proposal that reflected the learning objectives of all the modules. This assessment task involved a peer assessment component. When using peer review, it can benefit learners to structure the task by introducing a standard and explicit template for the process which provides clear instructions on how to assess the peer work and on which components to focus (Boud et al., 2014). In the TDR MOOC, the working group identified that the process of how to peer review the final assignment needed to be clearly explained as evidenced by a high number of participant queries, as well as a number of complaints from participants that the instructions were not clear.

**Ensuring a smooth video-recording process**

Several rehearsal sessions were scheduled before the final video-recording of each module. The recording studio contained several cameras and an interactive desk and tele-scripter to ensure that
the presenter felt at ease when speaking in front of the cameras. To give confidence to the presenters, before the official recording, they were trained to be recorded in a similar studio environment. To maintain learner engagement and to distinguish each new module from the previous, the presenters were advised to change their outfits for each video-recording session.

**Implementation Phase**

**Communication strategy**

A clear communication and dissemination strategy, which included using short and straightforward messaging, was decided on by the team prior to the launch of the MOOC. This strategy included producing simple flyers—in different languages—to promote the course during networking events, scientific conferences as well as partners’ websites. As an example, TDR produced two short trailers of three to five-minute length with an international expert and a TDR staff member. The trailers were disseminated through a Facebook page and are thought to have improved course participation considerably as indicated through the many interactive discussions that took place on Facebook. Each trailer described the reasons for developing the MOOC as a training tool, its duration and content, and the target audience. A podcast was also developed to promote the course free of charge and to encourage peers to connect through the course.

**Management of the discussion forum**

Discussion forums are an essential element of a MOOC for developing an online community and encouraging interaction amongst learners. However, the forum discussion needed to be carefully moderated by responding to the learners’ queries. Indeed, learners’ satisfaction with MOOCs generally is linked with the quality of interactions with facilitators (Khalil & Ebner, 2013; see also Goshtasbpour et al., 2020). Studies have shown that learners who disengage and do not complete a MOOC cite negative engagement from MOOC instructors (Hone & El Said, 2016). This negative engagement includes poor engagement from instructors in discussions; a lack of praise from instructors following assessments; poor communication with both instructors and peers; poor feedback from both instructors and peers; a lack of teamwork or group interaction. These behaviours lead to decreased motivation for learners and a higher likelihood of them not completing a MOOC (Hone & El Said, 2016).

A key issue identified in the discussion forums in the first MOOC sessions was a lack of active engagement. In this case, less than 5% of the participants were actively engaged in the TDR MOOC discussion forums. Based on the total number of visits on the discussion pages, it became clear that some learners were following the discussions but were not actively engaged by contributing to the discussions. Ensuring that discussion forums work as intended in MOOCs in general has been documented to be challenging (Breslow et al., 2013; Hew & Cheung, 2014; Li & Canelas, 2019; Watson et al., 2016). Issues include low participation rates, slow responses to posts and poor quality or superficial discussions.

Many MOOC participants are generally found to be passive participants or ‘lurkers’ (Milligan et al., 2013); Lurkers are participants who actively follow the course content by, for example watching videos, but who do not engage in the discussion forums (Milligan et al., 2013). Indeed, in the TDR MOOC, two thirds of the MOOC participants were found to be lurkers. To encourage forum discussions in subsequent MOOC sessions, TDR developed a range of questions and discussion points relevant to each module to stimulate discussion.
Another challenge faced by TDR in relation to the discussion forums was that discussions were often fragmented. In the forums, learners tended to start new discussions rather than respond to already initiated topics even when these related to their specific query. One solution to this issue was to ask the learners to respond to the posts rather than create new ones. The MOOC facilitators found that closing discussions that had a high number of posts by summarising the ideas allowed participants to quickly gain an overview of the main issues discussed. The use of prepared questions as examples to start discussion was also found to be a solution to this issue as, once these were implemented, it was found to increase discussion activity by encouraging participants to engage with the discussion.

To further address these issues, TDR developed a facilitator guide and decided to regionalise the management of the MOOC to institutions in which TDR has already developed partnerships in IR capacity building. These include the RTCs which are supported by TDR to disseminate IR relevant training courses.

The quality improvement process

To ensure continuous improvement in the course content and delivery, the MOOC team used two approaches: 1) Piloting and 2) Monitoring and evaluation. These are described below in detail.

Piloting the MOOC

As part of quality improvement, it is advised to pilot a MOOC with a smaller cohort of learners and obtain their feedback before launching. This iterative process will enhance uptake and adherence to the course. For these reasons, TDR first piloted its MOOC amongst 110 learners across the globe. Based on their feedback, TDR refined some of the quizzes, relevant assignment tasks and timeframes required to complete the assignments. For further details, see Launois et al. (2019).

Monitoring and Evaluation Framework

The Kirkpatrick Model is used as a basis to evaluate training programmes and includes evaluations at four levels: 1) Reaction – the way learners react to the experience of the course; 2) Learning – the new knowledge, skills and attitudes they gained during the course; 3) Behaviour – how the latest knowledge, skills and attitudes are applied and 4) Results – improved job and organisational performance.

Therefore, to evaluate the learners’ reactions to the MOOC and the knowledge and skills they gained, a survey was sent to all learners who completed the course. One of the main improvements to the MOOC based on the responses from this survey was to translate the course into other languages. Indeed, although the platform provided information on the number of registrants, the number of completers and the number of certified (TDR gave a certificate of completion), to analyse step 1 and 2 of the Kirkpatrick Model, TDR sent a survey at the end of the course to all registrants (those who received a certificate and those who did not). The aim of the survey was to explore participants’:

1) Reactions – positive and negative – to each module and its contents (videos, presentations, forum discussion, quizzes, and assessment). For example, as feedback, it was clear that the use of English was a challenge for learners from some language backgrounds, for example Spanish, French, Vietnamese and Indonesian. To respond to this issue, TDR is currently developing the MOOC in the six official UN languages.
2) Motivations to engage in the MOOC and the benefits gained by participants in terms of improving their knowledge of the topic of IR. This step is essential as it helps TDR to refine and identify topics that are challenging for participants to understand and to ensure that the MOOC covers the competencies needed for developing an IR project.

The next phases of evaluation examined how participants of the IR MOOC have used the skills they gained from the course in their daily professional lives – i.e. how the MOOC has affected their professional behaviour (Launois et al., 2021), and improved their job and organisational performance (Launois et al., under review). This evaluation is based on data that includes online anonymous survey responses and semi-structured interviews.

Conclusion

The TDR MOOC was developed to provide flexible and free IR education for health professionals in LMICs where there is currently a lack of education and training opportunities in IR. Using case study methodology allowed the authors to explore and present the holistic experiences and learnings of the MOOC team during the three phases of the MOOC. During the planning, development and implementation phases of the MOOC, the working group learned a wide range of lessons specific to a professional development MOOC for learners in LMICs and which can form the basis of recommendations for others developing similar MOOCs. These learnings were diverse and included how best to design and develop an appropriate curriculum (including assessments), how to communicate and advertise such a MOOC to the wider community, how to identify and prepare suitable presenters for video recordings, and how to monitor and evaluate such a training course.

One of the main challenges encountered by the working group during the implementation of the MOOC was to ensure that participants understood the requirements of the peer review assessment task, and that discussion forums were engaging for participants. Facilitating discussion forums in MOOCs is known to be challenging due to, for example, low participation rates, slow responses to posts and poor quality discussions, yet carefully facilitated discussion forums can lead to increased learner satisfaction, engagement and retention rates. These issues are of particular concern for a MOOC aimed at health professionals where time limitations and motivation to complete are key considerations. Solutions to these issues included using clear instructions, summarising popular discussion forum topics, using prepared questions, developing a MOOC-specific facilitator guide, and regionalising the management of the MOOC to partner institutions. In particular, preparing questions in advance to improve the discussion as well as training the MOOC facilitators in this area was beneficial in increasing forum discussion activity.

Another key challenge identified by the working group was to ensure that the MOOC content was context-specific and appropriate for the participants targeted for the MOOC and used relevant and real-life examples from LMICs. This in itself was a challenge due to the wide reach of the IR MOOC which targeted participants from LMICs worldwide. A solution was to identify and recruit experts with relevant context-specific knowledge to assist in the development of the MOOC. Providing context-specific learning may motivate and engage learners – particularly in LMICs – and potentially lead to higher retention rates overall, and this was therefore an important consideration for the working group. Subsequent feedback from MOOC participants suggests that they want context-specific content and are somewhat dissatisfied with the content when it is lacking altogether.

Linked to the importance of providing learners with context-specific and appropriate content was the issue of language of instruction, both in relation to the academic level and the choice of language. For example, the use of English as the sole language of instruction was found to be a challenge for
some participants who were non-English speakers. This was therefore an important consideration for the development of subsequent MOOC iterations which will be offered in the six official WHO languages.

The lessons described in this paper will be of value to others developing professional development MOOCs in health and particularly in diverse LMIC contexts. Such guidance is valuable given the paucity of professional development MOOCs aimed at learners in LMIC contexts. A limitation of this study is that the case study approach used relies on the MOOC team’s unique experiences in planning, developing and implementing the IR MOOC. These experiences and lessons may therefore not be generalisable to other MOOCs for different audiences and in different contexts.

References


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Lessons learned developing a massive open online course


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