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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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This third Open Praxis issue in 2018 includes seven research papers and a book review. These contributions by sixteen authors from various countries (Canada, Turkey, Bulgaria, Nigeria, Pakistan, Australia/United Kingdom, Timor-Leste and the United States of America) explain their research and experiences in open, distance and flexible education.

In the first paper (Exploring the Emerging Field of Online Tertiary Education for Refugees in Protracted Situations), Suzanne Reinhardt from Simon Fraser University (Canada) contributes to the current concern with the situation of refugees by presenting a literature review and the analysis of three online education programs addressed to refugees. This critical review highlights different assets, weaknesses and challenges, and points out some areas for further study.

In the second paper (Cheating and Plagiarism in E-Assessment: Students’ Perspectives), a team of four authors –Serpil Kocdar and Abdulkadir Karadeniz from Anadolu University in Turkey, and Roumiana Peytcheva-Forsyth and Vessela Stoeva from Sofia University in Bulgaria– explore students’ views about another current concern in higher education: plagiarism and trust in e-assessment. Framed in the European Horizon 2020 TeSLA research project, they present a survey-based study that shows the different students’ perceptions about cheating considering the mode of learning. The results provide a valuable insight as preliminary information to anyone involved in distance education.

The next two papers, from Pakistan, explore academic performance in distance education in relation to different individual dimensions.

First, Nauman A. Abdullah and Munawar S. Mirza from the Virtual University of Pakistan (Entry Qualifications of Students as Predictors of Academic Performance in Various Degree Programs in Distance Education setting in Pakistan), relate academic performance and previous qualifications and scores. Their quantitative study analyses the correlation in different Master programs and concludes that previous high achievers perform better, in accordance with similar studies. The results are of interest for distance education institutions in order to address average and low achievers’ needs in pursue of better academic performance.

Second, Nabia Luqman Siddiquei and Ruhi Khalid (The relationship between Personality Traits, Learning Styles and Academic Performance of E-Learners), also focus on academic performance and its relation, in this case, to other students’ dimensions; they include gender as a variable. Their survey-based quantitative study presents the results of the analysis and also some ideas for instructors, so they can create more efficient learning environments.

The following paper (Employers’ Perception and Expectations of Professional Competency of Distance Learning Graduates: A Tracer Study of Nursing Graduates of the National Open University of Nigeria (NOUN)), Dorothy Ofoha and Onyeka Iwuchukwu from NOUN (Nigeria) focuses on the output after a distance education experience. Information from both alumni and employers was collected and the study provides detailed descriptive statistic analysis. The tracer study concludes that NOUN graduate nurses are competent and gives credit to the distance education received at NOUN, which is a relevant result for this and similar institutions.

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Monty King, Bernadete Luan and Esperança Lopes [Experiences of Timorese language teachers in a blended Massive Open Online Course (MOOC) for Continuing Professional Development (CPD)] report on a blended learning experience, where a group of teachers have followed a MOOC and combined this online environment with on site regular meetings. Through a participatory action research, this qualitative study highlights some benefits of the experience (such as access, collective learning and motivation) and some challenges (such as Internet connection, platform and online course design and the cost of the MOOC certificate). The case study critically explores different elements in detail, and, as it happened with the first paper in this issue, alerts about the potential neo-colonialism that MOOCs and other Northern created experiences can represent when consumed in Southern regions.

The last research paper, by Lindsay Renee Murphy and David Rose (Are Private Universities Exempt from Student Concerns About Textbook Costs? A Survey of Students at American University), contributes to recent literature about textbook costs in higher education, particularly in the USA, and the role of OER in this scenario. The survey-based study explores the use of textbooks, cost, access, etc. and, through and open-ended question, asks about the consequences of the textbooks cost. Despite being a private university, the authors conclude that the results are similar to those found in public institutions, and suggest the situation as a driver for introducing OER.

Finally, the issue includes a review by Eric Belt of the book Best Practices for Teaching with Emerging Technologies, authored by Michelle Pacansky-Brock and published in 2017 by Routledge.

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

Besides inviting all readers to find some insight in this Open Praxis issue, we want to inform about another publication; it is the last issue in the journal Distances et Médiation des Savoirs [Distance and Mediation of Knowledge], where the editor, Martine Vidal (2018), compiles a selection of papers from seven journals focused in open and distance education, each of them introduced by the corresponding editor. Open Praxis decided to reprint the paper by Sandra Peter and Markus Deimann (2013, 2018); the motivation and introduction to this paper can be found in Gil-Jaurena (2018). We thank again DMS for the invitation to participate in the special issue entitled “Seven sister journals, seven international contributions to distance learning”, available here: https://journals.openedition.org/dms/2395

References


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Exploring the Emerging Field of Online Tertiary Education for Refugees in Protracted Situations

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Abstract

“UNESCO believes that education is a human right for all throughout life and that access must be matched by quality.” While this statement is a worthy ideal, it does not meet the needs of all populations, especially our most vulnerable. The refugee crisis has opened up new channels for education to find its place among the supports given to refugees, and that place may be distance education. Some budding research has taken place within the field of sociology, but educational technologists are just beginning to look into the needs of this population with only one study of note published. Several online programs have been implemented and studied within sociology, including Australian Catholic University’s Thai-Burma Program, Borderless Higher Education for Refugees in Kenya and Jesuit Worldwide Learning, which currently has multiple sites worldwide. Looking forward, distance education is aligned to take its place as well. This study is a review of the literature and looks at possible paths for future research into online programs for refugees in protracted situations within the field of educational technology.

Key Words: Online learning, e-learning, refugee education, distance education, refugee tertiary education

Refugee Crisis and Education

The background of online learning in refugee camps begins with the refugee crisis. Unfortunately, the phrase “refugee crisis” has been used to such an extent that it no longer holds as much meaning or urgency as it necessarily demands. And while words do a poor job of expressing the pain and struggle of displaced people, there is indeed a refugee crisis the scale of which has not been seen previously (United Nations, n.d.). The United Nations High Commission for Refugees claims there are currently 65 million displaced people (including refugees) in as many as 130 nations (UNHCR, n.d.). The largest camp, to this date, is being built in Bangladesh. It will hold 400,000 people that are displaced as a consequence of ethnic cleansing in Myanmar (Beech, 2017). Seen from the outside, it is an overwhelming situation. Experiencing it as a lived situation, for most of us, is unimaginable.

While continuing the use of the word “crisis” risks removing the meaning from the term entirely, there is no other word that effectively describes the state of education for refugees. Once the attention of the international community strays and funds begin to dry up, education comes second to providing for the basic needs of the displaced. One possible option to ease this crisis would be online learning. In a complex, fund-starved situation, pursuing this path creates options for educating refugees.

A review of the research shows that the need is there, but the research within educational technology is sparse. Sociologists have done a noble amount of research in the area of education for refugees and have begun some research in the area of online learning; however, there has only been one study by Crea & Sparnon (2017) within the field of educational technology. This search for relevant articles included Google scholar search terms “refugee education”, “refugee education online”, “refugee distance education” and revealed no other relevant research. Related articles within...
sociology were examined for citations within the field of educational technology with no success. Educational technology could add its own strengths to online learning for this population, and articles published within in this area could benefit educational programs for refugees.

The following literature review begins broadly, addressing the ethical need for social justice within educational technology, notes the state of education in refugee camps and narrows to the benefits of both tertiary education, in general, and online learning more specifically. It then describes the major programs that have implemented this type of intervention and ends with a discussion and possible areas for future study.

**Social Justice in Educational Technology**

There has been a fairly recent call to attend to the need for social justice in educational technology research (Selwyn, 2010). Previously, the trajectory focusing on social issues has often been the purview of other disciplines within the social sciences such as sociology and political science. However, Selwyn encourages “critical thinking” about educational technology. He states, “the academic study of educational technology has grown to be dominated by an (often abstracted) interest in the processes of how people can learn with digital technology” (p. 66). He goes on to say it is imperative that, “researchers and writers [should be] showing a keener interest in the social, political, economic, cultural and historical contexts within which educational technology use (and non-use) is located” (p. 66). While Selwyn’s claim was published over eight years prior to the writing of this text, the need has grown exponentially, and the corpus of social justice within educational technology is anemic at best.

A more recent piece of research that addresses the need for social justice work within education is by Gutiérrez and Jurow (2016). Using the framework of social design experimentation, the authors pursue research that has the express purpose of promoting the needs of underserved populations. The key to this approach is to address educational principles and opportunities to serve wider social and community issues as well as addressing the obstacles to equity and justice. Straight to the point, they argue, “what sets social design experimentation apart as an approach is that it seeks a design process that strives to be a part of the process of fundamental social transformation” (p. 566). The fundamental ideas are that underserved populations have their own unique paths through education based on the challenges of being a marginalized group, and that using social design experimentation can open up ways to work through these difficulties.

Another principle discussed by Gutiérrez and Jurow (2016) is that individuals – especially those who are the focus of social design experimentation – are part of a larger historical context. Understanding how their unequal place in society has shaped their lives, and how that knowledge can be used beneficially, uses inequity to solve the problem of itself (Gutiérrez & Jurow, 2016).

**Higher Education in the Camps**

At the same time that there is a need for more attention to be paid to social justice within educational technology, there is a parallel educational crisis within the field of sociology that deserves special attention. While refugee studies has a significant history, because of the increase of protracted refugee situations is a newer phenomenon (Zeus, 2011) and online learning is also a more recent educational advancement, the confluence of e-learning in refugee encampments has seen limited research. There have been few published journal articles within sociology of online learning in refugee situations (Crea, 2016; Crea & McFarland, 2015; MacLaren, 2012). Other sources of information from a sociological perspective include master’s theses (Hakami, 2016) and commissioned reports.
While there has been only one published study (Crea & Sparnon, 2017) within educational technology, there have also been few within sociology. However, educational technology has the opportunity to build on the literature that has been published up to this point, and this would be an ideal opening to include the strengths of educational technology in the research.

Article 26 of the United Nation’s Universal Declaration of Human Rights states that education is a basic human right. This also holds equally true for refugees. Hakami (2016) very clearly states the consequence of these rights to refugees:

“This study recognizes the essential importance of equality of opportunity when it comes to education, and sees improving access to higher education for refugees as an obligation for ensuring human rights and preventing a great loss of human potential” (p. 7).

The UN has also recently declared tertiary education an equal part of this fundamental right (UNHCR, 2012). Refugees have lost much of what makes life stable and purposeful. Attention to this emergency should be immediate and sustained until there is a satisfactory resolution. Dahya (2016) explains why this is important: “education is a human right with important implications for health, livelihood, and peace building in contexts of conflict and crisis” (p. 5). Education in refugee situations is a piece of multifaceted solution to a crisis with little realistic hope of a quick resolution.

Because the underlying purpose of refugee camps is of a temporary nature, and the end goal is often repatriation, education, and tertiary education in particular, has not been a priority in encampments (Hakami, 2016; MacLaren, 2012). Sadly though, many of the 22.5 million refugees worldwide will spend years in refugee camps (UNHCR, n.d.), hence the unfortunate need for the phrase “protracted refugee encampments.” Protracted situations are defined by the UNHCR (MacLaren, p. 105) as “25,000 persons or more who have been in exile for five or more years in developing countries.” Ongoing war and conflict, and generally unstable and unsafe political situations, make the likelihood of refugees returning to their home countries in a timely manner doubtful (MacLaren, 2012). Because most of the protracted refugee camps are in the global south (Dahya, 2016), that leaves this already vulnerable population in even more need of aid and support from the more privileged states.

Historically, education in refugee camps has been focused on the needs of children and primary and secondary education (Hakami, 2016; MacLaren, 2012). However, because refugees can now spend years and even decades in camps, providing higher education is becoming an urgent necessity. Since there is an obvious need for primary education for all refugees, the protracted status of many displaced people can transform a right to higher education into a lifesaving tool for the future. The concentration on primary education is a reflection of how refugee situations are originally intended to be temporary (Hakami, 2016). This perspective, unfortunately, does not reflect what is happening on the ground in refugee camps. Host countries resist integrating refugees into their populations due to fear of loss of jobs and resources for their citizens (Zeus, 2011), and this contributes to the elongated timeframe for refugees initially looking for a temporary haven. Hakami (2016) explains:

“refugees end up in these situations because of a prolonged situation of violence, persecution and/or insecurity in their country of origin, and the unwillingness/inability of the host country to offer citizenship rights and facilitate integration into the host country” (p. 12).

If the illusion of temporariness is not addressed, then higher education will, understandably, not be a priority in the reality and future of refugee camps.
Benefits of Tertiary Education

Available evidence does not provide reason to be optimistic about a happy ending for refugees in protracted situations. While the many displaced have had to flee their homes because of fear for their lives and imminent physical harm, there is some hope that it is possible to provide them a foundation to build a future for themselves through education. Yet, there is opportunity to build a life through more than the traditional means of a well-paying job. Zeus (2011) says that education has an “important role in psychosocial, but also physical and cognitive protection” and “can play a role in helping communities understand and cope with their fate and can be a critical part of providing meaning in life” (p. 257). Hakami (2016) emphasizes that education can build psychological support which fosters higher functioning which then provides more foundational psychological support. Those are significant reasons to provide at least a bare minimum of higher education; more would be better.

The positive influences of education on the mental health of refugees is difficult to overstate. In situations where necessities such as food, clean water and basic physical safety are inconsistent at best (Crea & McFarland, 2015), the burden of the reality of living in— and often growing up in— protracted encampments requires a deep reservoir of internal strength. Education can help supplement that reservoir. El Jack (2010) quotes a student describing their educational experience in a refugee camp, “I began to see education as necessary for my survival in the world. Neither dust nor hunger nor disease would stop us” (p. 23). Building confidence as well as the development of critical thinking skills are two consequences of the pursuit of higher education (MacLaren, 2012).

Often the voices of the refugees themselves are unrepresented in research on these complex displacement situations. However, Hakami (2016) focuses on these voices and shows that refugees’ futures are not simply informed by kismet, but rather they have the desire for agency and volition of their own. When given the chance, refugees speak of the opportunities that education can provide through work. But beyond that obvious benefit, Hakami notes that they also speak about how education can help them to fit more easily into a host culture, as well as allow them to give back to their home country if they return.

While refugee situations continue to stagnate, Hakami (2016) argues that education can be a means of resolving protracted situations. Hakami points out that better educated refugees can contribute to society whether that is upon their return home, in the host culture or in an entirely different placement. Education provides more opportunities to contribute to the workforce, thus reducing their need for financial and social support in their ultimate country of return or relocation. Educated immigrants contribute more to society in general, and have a positive impact on sectors such as the government, the physical health of the society and the economy (Hakami, 2016). Perhaps most importantly, the refugees believe that the skills that they develop through education will allow them more options in their future (Crea & McFarland, 2015).

Education provides multiple advantages for the refugees while they remain in the camps (Crea & McFarland, 2015). The refugees that have been through tertiary education are seen as role models for their fellow refugees (Crea & McFarland, 2015). In addition to being seen as contributing a positive influence to the camp, the educated see themselves as giving back (Hakami, 2016). They are not simply a disempowered group without a country that they can call home; they are part of a community that they are contributing to in a positive way. The educated can also find possible employment in the camps (Hakami, 2016) and education provides structure and support in a very unstructured and unstable environment.
Online Learning in the Camps

As previously noted, refugee situations were never intended to be long-term (Abdi, 2016; Dahya, 2016; MacLaren, 2012; Wright & Plasterer, 2010). If refugees are expected to be integrated elsewhere in short order, there is no need to create educational programs, and thus there is no focus on higher education (MacLaren, 2012). As a result, there is little to no funding, and if there is no funding then there are few programs and, as a consequence, there is no basis for a rich body of research. The ouroboros of unrealistic situational understanding and lack of supplementary resources simply perpetuates itself. Recently, however, there have been some online and blended tertiary programs that contribute to the research in this area. The following will discuss the programs and look carefully at the research that was written about each.

ACU Thai-Burma Program

The earliest program of higher education in a protracted refugee situation that used online learning was a blended program in a Thai-Myanmar (Burmese) border camp that began in 2002 (MacLaren, 2012). According to MacLaren, refugees had fled Myanmar because of intense political unrest that had been part of the, “longest-running civil war in the world” (p. 103). After considerable effort by the Refugee Tertiary Education Committee, in cooperation with Australian Catholic University, a previously successful online program was adapted to the situation in the Thai refugee camp, and enrolled its first 21 students. Of those students, 17 graduated with the program’s diploma in Business Administration. The revised program later granted a certificate in Theology to 5 students in 2009. The program currently offers a diploma in Liberal Studies in conjunction with several U.S. and Canadian universities.

The area of online learning for refugees in protracted situations is so new that the bulk of current research takes the form of program assessment, examining the strengths to build on, and attempting to steer clear of program weaknesses. MacLaren’s (2012) intention in this study was to look into the overall structure of the program, including how it originated, how graduates utilized the “common good” (part of the ACU’s Catholic principles), focusing on the future, and how the program’s successes can be used elsewhere in similar programs (p. 103).

The methodology of a later program review completed in 2009 by ACU, that focused on graduates of the program, deserves considerable respect for the attention it paid to the needs of the people being studied (MacLaren, 2012). This included an intentionally casual approach to gathering research (termed the “hanging out” method) used with vulnerable populations in qualitative research (MacLaren, 2012). This procedure was utilized because of the habit of researchers in the camps to use the students for their own research purposes, then leave little evidence that there was real concern for them as people.

One challenge with the most recent research on this program, which MacLaren (2012) describes, is the inability to find students for follow-up data collection because of the transient nature of refugee camps. In this case, 13 of the 18 students who completed the program contributed to the research. With a larger participant pool, the needs of the students could be more adequately understood and addressed.

Overall, the budding program had several successes. Because the language of instruction was English, all students improved both their academic English as well as their critical thinking skills. On a more personal level, participants felt increased confidence and awareness and understanding of the political environment from which they came. Some refugees were accepted into university programs, but most stayed on the border contributing labor and adding to the “common good” within the camp.
Unfortunately, while a few refugees may find relief elsewhere, the need for the camps, and the camps themselves remain intact.

Though this study may have some limitations, such as a lack of a significant participant pool in the later stages of program review, it appears that these may not be the major concern of ACU. A pilot program was implemented for a group of people that have lost the attention of the international community—which tends to fund and implement these endeavors. If there is progress toward implementing much needed effective educational foundations, then perhaps research rigor should come second.

**Borderless Higher Education for Refugees**

The second of three programs that included an online component was implemented in Kenya in 2014 (Abdi, 2016). This undertaking was a collaborative effort on behalf of several Canadian (York University and University of British Columbia) and Kenyan (Kenyatta University and Moi University) universities collectively calling the project Borderless Higher Education for Refugees (BHER). Life and education in the camps suffers from lack of resources, including teachers; so the program intended to address this need. If there were more teachers, then more students could be reached. In addition to providing more teachers in the camps, student teachers would receive academic credits that could transfer to universities for their future education elsewhere. Another goal was to introduce and encourage the use of “twenty-first century” teaching skills to improve the quality of education in the camps (p. 27). More important, teacher training with the refugees themselves moves the historically colonialized educational system to education that implements principles and values based on the pre-colonized culture.

This study, like the previous MacLaren (2012) work, was to look at the strengths and difficulties of this particular program, as well as the usefulness of what participants learned with regard to repatriation. With these goals in mind, the greatest strength of this study was the ability of the researcher to recognize and address the needs of the students. Abdi (2016) writes very poignantly about the purpose for this study and the effect it has had personally:

> The data used in this article draws on research conducted for my doctoral dissertation, which explores the role of education in post-conflict societies, such as that of Somalia, in bringing about sustainable peace and justice. As an educator and researcher who grew up in a relatively peaceful Somalia, I am haunted by questions about how education can be used as a vehicle to reimagine peace and unity in my homeland. (p. 22)

Abdi (2016) concluded by emphasizing the importance of adequate numbers of teachers, not only in refugee camps, but also in countries of origin to support an educated populace and the growth in a country affected by displacement. Abdi goes on to explicitly state that well-trained teachers are an essential part of supporting refugees. Another point includes designing a curriculum that focuses on the particular needs of refugees who will return to their home country and how they can best be served. Abdi also noted that technology, in this context, did not have as much success as anticipated. Technology use in similar programs should be used judiciously with the context and environment taken into careful consideration.

**Jesuit Commons: Higher Education at the Margins**

Additional programs were set up in Kenyan camps (called Dadaab and Kakuma) and another in Nairobi by the Jesuit Refugee Service (JRS) with several iterations (Wright & Plasterer, 2010). The first
was carried out in partnership with the University of South Africa. A second program began in 2010 through JRS with several Jesuit universities, and a final program in 2011, with Regis University. The problems with this program centered on the weaknesses of the infrastructure in the camps, mainly that the Internet was so slow that it was essentially unusable. Later changes made significant improvement to the Internet speed.

The major weakness of this study, as noted by Wright and Plasterer (2010), is the lack of including student voices. Instead of students, participants included people associated with non-profit organizations who worked within the educational structure of the camps. While Wright and Plasterer did not interview refugees, the researchers conducted orientation sessions for students immigrating to Canada, which included research reports written by the students. Some of the research was referenced in the current study. The researchers intentionally choose not to interview refugees because it protected the participants from feeling taken advantage of, which was a developing pattern with researchers in the camps. While participants were protected from feeling misused by researchers, Wright and Plasterer also noted the possible biased nature of the feedback from organizers rather than students. More of a focus on students, in spite of adding a layer of protective complexity, would be an obvious beneficial addition to the literature.

Perhaps the most thorough studies on online programs were performed by Thomas Crea on the Jesuit Commons: Higher Education at the Margins (JC:HEM) program (recently renamed Jesuit Worldwide Learning). Although it is somewhat unclear, the first in a series of studies appears to be a follow-up to the program that Wright and Plasterer (2010) examined in the Kenyan camp called Kakuma. Additional locations in the Malawi and Jordan (initially in Syria) were added to the 2010 – 2014 program. The focus of this study was to look at the effectiveness of the pilot project objectives as well as the perspectives of the students in the program (Crea & McFarland, 2015). The goals were to provide adequate Internet service and provide online tertiary and community service programs – with the expectation that students would graduate by the end of the pilot. Results indicated that the objectives were implemented and thus successful.

Crea and MacFarland (2015) took their research a step further by paying close attention to the importance of student voices within their research and engaged in a focus group at each site. The feedback was encouraging. One student noted the positive effect that being a student had on his identity as a refugee, “I’m also a human being; working hard and trying hard to achieve what I want to achieve; the first thing is change my attitude and be seen and treated as a human being” (p. 241).

While the program had several positive results, there were also challenges, and Crea and MacFarland (2015) extrapolated ideas from the research to form the next steps in building a strong program. These steps include: designing curriculum for the specific population of students especially in regard to how students would be able to further utilize their education; having related organizations come together to focus on creating opportunities beyond the program itself; and encouraging the greater academic community to participate in this and similar programs.

The last sentence in Crea and MacFarland’s (2015) article before the conclusion quietly notes an important area for possible future research: that instructors for the JC:HEM program should be provided with teacher training. One sentence is hardly enough to thoroughly understand the important initial step of preparing teachers for teaching online in refugee camps. More research should be done to understand the standards and methods of this training.

Crea’s 2016 follow-up study looked more closely at the research on the important perspectives of students’ experiences with tertiary education in the camps. It appears that the same group of participants was used in the 2016 Crea study as in the previous 2015 study. In the more recent work, Crea focused his research questions on the students’ quality of life related to their education and perceived benefits and challenges of the program.
Included in the study were both quantitative and qualitative data (Crea, 2016). Qualitatively, participants were administered the WHOQOL-BREF quality of life survey (Crea, 2016). The survey identifies four life areas including: physical health, psychological health, social relationships, and environment. The data indicated that the participants valued education because of the skills gained and, “feelings of empowerment, related to their expanded worldview” (Crea, 2016, p. 16). One of the greatest perceived benefits for the students was the support they could provide for their communities because as educated people they were held to a higher standard of respect within the community. Students appreciated the opportunity to have access to education, which they might not have had access to otherwise, as well as having a chance to learn English.

One area that needed specific attention for improvement was the obvious cultural bias toward the global north in the class materials, which were published in North America (Crea, 2016). Communication with instructors also tended to be inconsistent, and students had difficulties aligning the expectations of the instructor with the realities of living in refugee camps. Most important, students struggled because basic necessities of food and clean water were often lacking.

As is expected with any program review, there were weaknesses, and Crea (2016) made program recommendations based on several of those areas. One suggestion was to consider that the environment of each camp was so different that, to effectively address the needs of the students, the program would need to adjust to each camp as a unique individual learning environment. The Dzaleka participants in Malawi were burdened by a 50% decrease in food rations, yet the Kakuma camp had difficulties using transportation to navigate the immense landscape of the camp. The challenges presented for the students in each camp were different. Crea's other two recommendations included clearer program objectives and a continuing cycle of assessment and program improvement.

Crea's 2016 grant funded study by JWL acted as a program assessment. This makes identifying areas for future research somewhat difficult; however, Crea leaves us with a few intriguing notes in this respect. For example, it is suggested that a broader range of participants would be valuable, including participants from the larger refugee population rather than only participants who were selected as students by previous educational level as well as adjusting the participant pool for selection bias.

A third study was undertaken by Crea and Sparnon (2017) within the same previously noted program, which was also a program review. To pursue a thorough investigation of the JC:HEM program, this study examined the perspectives of faculty and program facilitators. Participants were interviewed and surveyed. The response from faculty indicated that communication and commitment to the students were areas of strength in the program, among others. Some of the challenges, as noted by the faculty, were lack of cohesion and weak communication within the program as well as a need for site-specific teaching materials. The ambiguity of negative and positive comments about communication might be a worthy path for future research.

According to Crea and Sparnon (2017), there were several strengths to the program from the perspective of the on-site facilitators including: a strengthened community in the camps, a positive overall effect on the students, additional skills and more cross-cultural understanding. Students also developed a more optimistic view of life. One of the on-site participants exemplified this hopefulness, “Education has also shown to help build the refugees’ courage and hope for the future, as well as helped to reduce the trauma refugees have encountered prior to coming to the camps” (p. 13). Despite this, site facilitators identified a number of weaknesses: communication issues with the faculty, gender disparity among the students, weak internet reliability, a lack of textbook availability, few student opportunities after program completion, a lack of available spots for students, degrees that were not recognized in the host region and language issues.
While the concentration of the work here was on program assessment, Crea and Sparnon (2017) also point the way to future research. Crea and Sparnon suggest an expanded set of participants doing similar work outside of the specific group under study and continuing studies of a similar type to capture additional changes to the program. They also noted the importance of a larger response from the participant group to try to gain an understanding of all perspectives and to also address the conflicting communication responses that were previously noted.

Discussion

The theme that stood out overwhelmingly in the research was the need to apply site-specific context to the programs (Crea, 2016; Crea & Sparnon, 2017). Because Crea (2016) worked with three different refugee camps, he was able to identify differences and similarities in how each environment affected the outcomes of the program. What this research uncovered was that each site had its own unique challenges. Students in one camp might not be getting enough food, students in another site might be struggling to find work in their host countries, or some might experience the delay of textbooks. Each obstacle required a different solution. This was revealed, not just through Crea’s work, but through comparing other relevant literature. Each refugee camp has different resources, each population has a different language, culture and gender dynamics and each camp was created because of its own specific reason for population displacement. There were some commonalities among programs, but most had specific challenges and strengths. Implementing each online program as an exact replica of other similar programs at different refugee camps would be a disservice to the students.

While the main idea that came through in the research was for programs to consider interventions directly related to the context and environment, there were additional ideas that deserve notice. One was the incongruency of teaching materials to the lives of the students (Abdi, 2016; Crea & MacFarland, 2015; Crea, 2016; Crea & Sparnon, 2017; MacLaren, 2012). Textbooks and teaching materials need to be more relevant to the environment rather than directed toward students in the global north. The path for students also needs to be more clearly thought-out and integrated into the programs (Crea, 2016; Crea & Sparnon, 2017; Wright & Plasterer, 2010). It was also repeatedly noted that education did have a positive impact on the community in the camps (Crea, 2016; Crea & Sparnon, 2015; MacLaren, 2012; Wright & Plasterer, 2010). Overall, attention to context in regard to teaching materials, program implementation and long-term goals for students, would benefit students both in their immediate situation and in the future as well.

Possible Areas for Future Study

There are several areas within this body of work that, if addressed, would provide a more well-rounded knowledge base and offer stronger educational programs for refugees. The obvious first area would be studies that are published and have undergone the process of peer review by researchers within the field of distance education and/or educational technology. Sociology has gifted us with some strong yet preliminary research in which to base future inquiry.

Most of the recommendations provided by the authors of these studies have been made from the perspective of sociologists. The next question is: where can educational technology contribute? There is an exciting opportunity to develop a solid structure of practices of online higher education for refugees based on evidence that is informed by previous research.

As mentioned earlier, a possible direction of interest is to examine how instructors are trained to teach this unique group of students. Crea and Sparnon (2017) have written about the perspectives that both students and instructors have about online learning for refugees in protracted situations.
and lead the way toward future research. However, empirical work is needed that examines how teachers are trained for all the elements that come together in this situation, such as online andragogy, curriculum in context, inclusivity as well as cultural competence and working with second language students all need more concerted attention. Looking at online classes for refugees, in regard to teacher training, would be an appropriate next step.

References


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Cheating and Plagiarism in E-Assessment: Students’ Perspectives

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Abstract
The aim of this study was to identify students’ perceptions on cheating and plagiarism and trust in e-assessment according to their assessment experience and mode of learning as well as exploring their concerns in e-assessment. Participants were 952 students from two public universities in Turkey and Bulgaria. The study was designed as a cross-sectional survey. A questionnaire consisting of closed and open-ended questions was applied to collect data. Descriptive statistics, t-test, ANOVA and thematic analyses were performed. According to the results, no significant difference was found on students’ perceptions towards cheating and plagiarism and their feelings of trust in e-assessment regarding students’ prior e-assessment experience. However, there was a significant difference on students’ perceptions towards cheating and plagiarism and their feelings of trust in e-assessment regarding the mode of learning they are involved in. In addition, students’ concerns about e-assessment were explored in details in the paper.

Keywords: e-assessment, cheating, plagiarism, students’ perspectives, higher education

Introduction
The assessment of learning is a key element of an instructional design process, as it enables improvement of teaching and learning by providing feedback on the whole process (Haladyna, 2002). Learning assessment can be defined as process where learners’ achievement and progress are measured (Gikandi, Morrow & Davis, 2011; De Villiers, Scott-Kennel & Larke, 2016). Developments in information and communication technologies have had a profound influence on the methods used in assessment and have provided new opportunities for conducting electronically-based assessment, otherwise known as e-assessment, on student learning via computers, laptops and mobile devices (Hillier, 2014; Stödberg, 2012; De Villiers, Scott-Kennel & Larke, 2016). E-assessment practices have many advantages, such as providing more accessible, flexible, efficient and convenient assessment experiences for learners, teachers and institutions (Attia, 2014; Sorensen, 2013; Pedersen, White & Smith, 2012; De Villiers, Scott-Kennel & Larke, 2016). Research has shown that most students have positive attitudes towards e-assessment and are willing to take part in e-assessment practices (Attia, 2014; Dermo, 2009; Sorensen, 2013).

However, despite its many advantages, e-assessment has some disadvantages as well. For example, there are arguments in the literature that suggest the use of technology for assessment makes cheating and plagiarism easy (Bartley, 2005; Rowe, 2004; Gathuri, Luvanda, Matende & Kamundi, 2014). Students and teachers frequently express their concerns about the cheating and plagiarism that can result from e-assessment and this concern is limiting the widespread use...
of e-assessment (Mellar, Peytcheva-Forsyth, Kocdar, Karadeniz & Yovkova, 2018; Hillier, 2014). To overcome this problem, a number of authentication and authorship checking systems have evolved over time to ensure secure authentication (Peytcheva-Forsyth, 2017). The TeSLA system (An Adaptive Trust-Based E-Assessment System for Learning), which is currently being developed as part of a project funded by the European Commission, is one of these authentication and authorship checking systems. This study was conducted within the context of the TeSLA Project. Hillier (2014) claims that students’ concerns, which are typically noted before the implementation of any e-exam solution, are conspicuously absent from the literature. Therefore, this study aimed to investigate students’ preliminary perspectives regarding cheating and plagiarism in e-assessment before testing the TeSLA system.

Sorensen (2013) and Jordan (2011), in their studies, highlight the importance of understanding students’ perceptions of e-assessment. In parallel to this, Dermo (2009) found that while there is an abundance of research on teachers’ attitudes toward e-assessments, there is very little on students’ views towards them. Certain challenges exist in relation to student verification, authorship and authentication checking in e-assessment (Harmon, Lambrinos & Buffolino, 2010). Cheating and plagiarism is regarded as a greater concern compared to traditional paper-based assessment (Pedersen, White & Smith, 2012; Rowe, 2004; Xu & Mahenthiran, 2016). Some of the types of cheating and plagiarism that have been examined in the literature with regards to e-assessment include impersonation, taking materials into exams, looking at others’ answers and ghostwriting (Apampa, Wills & Argles, 2011; Bartley, 2005; Mellar et al., 2018). Clearly, these forms of cheating and plagiarism have a negative impact on the validity and reliability of the e-assessment process as well as students’ trust in e-assessment (Dermo, 2009). In this context, the purpose of this study is to identify students’ perceptions on cheating and plagiarism and trust in e-assessment according to their assessment experience and mode of learning as well as exploring their concerns in e-assessment, the results of which shall serve to guide the design, development and implementation of the TeSLA system in particular and other authentication and authorship checking systems in general.

**E-Assessment**

Various interchangeable terms have been used to describe the utilisation of ICTs for the assessment of student learning; these include, computer-based assessment, computer-assisted assessment, e-assessment and online assessment (Attia, 2014; JISC, 2007). Among these, the term e-assessment is the most broadly applied, covering a range of activities in which digital technologies are used in assessment” (JISC, 2007, p.6). Therefore, the term e-assessment has been used in this study. The Joint Information Systems Committee (JISC) in the United Kingdom defines e-assessment as “the end-to-end electronic assessment processes, where ICT is used for the presentation of assessment activity and the recording of responses” (JISC, 2007, p.6). As De Villiers, Scott-Kennel & Larke (2016) indicate, e-assessment is based on traditional assessment techniques but facilitated via online processes and digital tools.

**Modes of Learning**

Modes of delivery in learning can be face-to-face, blended or fully online/distance (Bates, 2015). Face-to-face learning is a form of learning where the instruction and course activities take place in a classroom; online learning is a form of educational delivery in which learning takes place primarily via
the Internet; and blended learning is a pedagogical model combining face-to-face classroom teaching and the innovative use of ICT, blending online and face-to-face delivery (Gaebel, Kupriyanova, Morais & Colucci, 2014). Distance education is a generic term for different organizational forms of education in which students and teachers are separated in time and place; it includes online learning, blended learning and traditional modes of distance education in which printed or online materials are used (Owusu-Boampong & Holmberg, 2015).

The TeSLA Project

The TeSLA project (An adaptive trust-based e-assessment system for learning), which is being developed as part of the Horizon 2020 Project, aims to create a system integrated in virtual learning environments to support authentication and authorship checking in e-assessment. The consortium is composed of 18 partners, including 8 universities, 3 quality agencies, 4 research centers, and 3 companies. The TeSLA system involves authentication (face recognition, voice recognition and keystroke dynamics) and authorship (forensic analysis for writing style and plagiarism detection) checking instruments which can be used in all e-assessment models to prevent cheating and plagiarism (Mellar et al., 2018; Noguera, Guerrero-Roldán & Rodríguez, 2016). This study is not an evaluation of the instruments, however, an investigation of students’ perspectives on cheating and plagiarism in e-assessment before using the TeSLA system.

Students’ Perspectives on Cheating and Plagiarism in E-Assessment

Cheating in the context of e-assessments can be broadly defined as “all deceptive or unauthorized actions” (Bartley, 2005, p.25), while plagiarism is described as the “reproduction and presentation of others’ work, without acknowledgement, or the attempt to receive credit for the idea or words of others” (Bartley, 2005, p.27). Existing research focusing on student perspectives on the use of e-assessment has shown that most of the students have positive attitudes towards e-assessment and are willing to take part in e-assessment practices (Attia, 2014; Dermo, 2009; Ferrão, 2010; Sorensen, 2013). However, research has also shown that some students have dissatisfaction with their e-assessment experience due to certain factors such as level of study, achievement or prior experience with e-assessment (Dermo, 2009; Sorensen, 2013). Dermo (2009) and Attia (2014) found that students at the postgraduate level are satisfied with their e-assessment experience, while Ferrão (2010) found that failing students tended to be more conservative about the use of e-assessment methods than passing students. According to Hillier (2014), students with prior experience in taking e-exams and with a higher level of technical proficiency tended to favor computerized exams. However, these studies mainly focus on e-assessment in general while only a very limited amount of the research has addressed students’ concerns and perspectives on cheating and plagiarism in e-assessments. In one of the few studies that have been conducted on this matter, Lee-Post and Hapke (2017) administered a survey to online undergraduate students and found that more than 45% of the students regarded cheating to be easy in an online classroom; nearly all of them reported that they had never attempted impersonation. However, 30% said that if they were given the opportunity, they would cheat. Consequently, several factors may impact students’ perspectives, such as their success levels, prior experience with e-assessment, level of education or the mode of learning. Therefore, more research is needed on the perspectives of students on cheating and plagiarism to better inform e-assessment planning.
Research Questions

The purpose of this study is to identify students’ perceptions on cheating and plagiarism and trust in e-assessment according to their assessment experience and mode of learning as well as exploring their concerns in e-assessment. The study aims to answer the following research questions:

1. Is there a significant difference in students’ perceptions towards cheating and plagiarism in e-assessment regarding students’ e-assessment experience?
2. Is there a significant difference in students’ feeling of trust in e-assessment regarding students’ e-assessment experience?
3. Is there a significant difference in students’ perceptions towards cheating and plagiarism in e-assessment regarding the mode of learning they are involved in?
4. Is there a significant difference in students’ feeling of trust in e-assessment regarding the mode of learning they are involved in?
5. Do the students have any concerns that there might be an increase in cheating and plagiarism if the face-to-face forms of assessment were to switch to online assessments at their university?

Method

As the aim of this study is to determine students’ perspectives on cheating and plagiarism in e-assessment, it was designed as a cross-sectional survey. Cross-sectional research design is used in quantitative research to describe the attitudes, opinions, behaviors, or characteristics of the population at one point in time by applying a survey to a sample or to the entire population of people (Creswell, 2012).

Participants

The study participants included 952 students from two public universities in Turkey and Bulgaria. Both universities are partners in TeSLA project and took part in the pilot testing of TeSLA instruments. 35.2% of the participants were male whereas 49.6% of them were female. 7.4% did not prefer to say and 7.9% of them did not respond to this item. 22% of the participants were from associate degree programs, 61% were from undergraduate degree and 16.8% were from graduate degree programs.

Data Collection and Analysis

The data for the first four research questions was collected via a questionnaire consisting of five closed five-point Likert scale questions. For the fifth research question, a closed question with three options (Yes/No/I don’t know) was asked along with an open-ended question which intended to explore students’ concerns about an increase in cheating and plagiarism if the face-to-face forms of assessment were to switch to online assessment. These questions in the questionnaire were part of a larger survey consisting of 13 questions to investigate various aspects of e-assessment and the demographics of students was also collected. The questionnaires were administered online in Google Forms and Survey Monkey. The reason for using Google Forms and Survey Monkey was their availability and familiarity for the two universities in the study. Prior to the analysis of the data obtained from the study, the skewness and kurtosis coefficients were examined in order to determine the appropriateness of the parametric tests. Results of the analysis showed that the skewness coefficient was .341 and the kurtosis coefficient was found as .080. According to these values, the data was normally distributed, and descriptive statistics, t-tests and ANOVA were performed on the basis of the research questions. SPSS 21 was used for quantitative data analysis. The responses to
the open question in the questionnaire were analysed thematically. The categories for the analysis were developed from the literature and according to the responses given for the question “Do you have any concerns that there might be an increase in cheating and plagiarism if the face-to-face forms of assessment were to switch to online assessments at the university?” Then, the data was explained and interpreted.

Findings

In this section, the findings related to the research questions are presented.

**Is there a significant difference in students' perceptions towards cheating and plagiarism in e-assessment regarding students' e-assessment experience?**

The first step in seeking the answer to this research question was to determine whether or not the students had experience in online assessment, with the question “Have you ever taken a course for which all the assessment has been conducted online? (e.g., MOOC, language certificate, driver’s license)” T-tests were performed to determine whether there is a significant difference between the means of two samples - those with experience and those without experience of e-assessment (I1.1-It is plagiarism if I help or work together with a classmate in an individual activity and the work we submit is similar or identical and I1.2-It is cheating if I copy-paste information from a website in a work developed by me without citing the original source). Furthermore, the impact of the e-assessment experiences of students on their cheating and plagiarism perceptions was examined (Table 1).

In examining Table 1, it can be seen that there is no significant difference in means between the groups of the students who have experience in e-assessment and those who haven’t (responses to I1.1 and I1.2) regarding their perceptions towards cheating and plagiarism.

**Is there a significant difference in students' feeling of trust in e-assessment regarding students' e-assessment experience?**

For this question, it was first important to identify whether or not the students had experience in online assessment, with the question “Have you ever taken a course for which all the assessment has been conducted online?” Again, T-tests were performed to determine whether there is a significant difference between the means of two samples - those with experience and those without experience of e-assessment (I1.3-It is cheating if I select options in an online test by clicking or ticking answers done correctly by someone else and I1.4-It is plagiarism if I submit similar or identical work done by a classmate and I1.5-It is cheating if I submit similar or identical work done by someone else). Furthermore, the impact of the e-assessment experiences of students on their cheating and plagiarism perceptions was examined (Table 1).

In examining Table 1, it can be seen that there is no significant difference in means between the groups of the students who have experience in e-assessment and those who haven’t (responses to I1.3 and I1.4) regarding their perceptions towards cheating and plagiarism.

**Table 1: The Impact of E-Assessment Experiences of Students on Their Cheating and Plagiarism Perceptions**

<table>
<thead>
<tr>
<th>Experience in a course in which all assessment has been conducted online</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>sd</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1.1-It is plagiarism if I help or work together with a classmate in an individual activity and the work we submit is similar or identical</td>
<td>Yes</td>
<td>275</td>
<td>2,97</td>
<td>1,356</td>
<td>938</td>
<td>0.552</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>665</td>
<td>2,92</td>
<td>1,301</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I1.2-It is cheating if I copy-paste information from a website in a work developed by me without citing the original source</td>
<td>Yes</td>
<td>275</td>
<td>3,61</td>
<td>1,347</td>
<td>938</td>
<td>-0.311</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>665</td>
<td>3,64</td>
<td>1,283</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Although the total sample size was 952, due to missing values the sample was recorded as 940 for this analysis.
conducted online? (e.g., MOOC, language certificate, driver’s licence)”. T-tests were performed to determine whether there is a significant difference between the means of two samples - those with experience and those without experience of e-assessment (I1.1-It is plagiarism if I help or work together with a classmate in an individual activity and the work we submit is similar or identical and I1.2-It is cheating if I copy-paste information from a website in a work developed by me without citing the original source). Furthermore, the impact of the students’ e-assessment experiences on their trust in e-assessment was examined (Table 2).

In examining Table 2, it can be seen that there is no significant difference between the means of the groups of students who have experience in e-assessment and the students' who haven’t regarding their feeling of trust in e-assessment.

Is there a significant difference in students' perceptions towards cheating and plagiarism in e-assessment regarding the mode of learning they are involved in?

In the scope of the study, the questionnaire was applied on three different groups of students, who were distinguished according to the mode of learning in the programmes they were attending, namely, the face-to-face mode (F2F), the distance education mode (DE), and the blended mode. They were asked to fill in two items in a five-point Likert scale; “I3.1” (It is plagiarism if I help or work together with a classmate in an individual activity and the work we submit is similar or identical) and “I3.2” (It is cheating if I copy-paste information from a website in a work developed by me without citing the original source). ANOVA was used to analyze the responses of the students based on their groups. On the results of this analysis, Tamhane’s T2 post-hoc test statistics was applied to determine the sources of significant difference found among the groups.

As can be seen in Table 3, for Item I3.1 the differences between the group means are statistically significant \[F(2-937)= 7,098; p<0.05\]. Similarly, the data gathered from item I3.2 was also found to significantly differ between the groups \[F(2-937)= 61,393; p<0.05\]. Post-hoc test statistics were used to compare and determine the sources of this significant difference found among the groups. The findings are presented in Table 4.

When Table 4 is examined, the agreement level of the distance education group regarding item “I3.1” (It is plagiarism if I help or work together with a classmate in an individual activity and the work we submit is similar or identical) is significantly lower (2.80 ± 1.38) than that of the face-to-face learning group (3.15 ± 1.2). The agreement level of the distance education group regarding item “I3.2” (It is cheating if I copy-paste information from a website in a work developed by me without citing the original source) is significantly lower (3.25 ± 1.37) than that of the face-to-face group and the blended learning group (4.16 ± 0.98).

| Table 2: The Impact of Students’ Online Course Experiences On Their Trust in E-Assessments |
|-----------------------------------------------|--------|---------|---------|---|-----|-----|
| Experience in a course in which all assessment has been conducted online | N | Mean | Std. Deviation | sd | t   | P   |
| I2.1- I would trust an assessment system in which all assessment occurs online | Yes | 275 | 3.47 | 1,147 | 939 | 1,810 | .621 |
| | No | 666 | 3.32 | 1,135 | |

Although the total sample size was 952, due to missing values the sample was recorded as 941 for this analysis.
Table 3: Analysis of Variance Results on Comparison of the Cheating and Plagiarism Perception Scores of the Three Groups

<table>
<thead>
<tr>
<th>I3.1-It is plagiarism if I help or work together with a classmate in an individual activity and the work we submit is similar or identical</th>
<th>DE</th>
<th>532</th>
<th>2,80</th>
<th>1,378</th>
<th>Between Groups</th>
<th>24,295</th>
<th>2</th>
<th>12,147</th>
<th>7,098</th>
<th>.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2F</td>
<td>335</td>
<td>3,15</td>
<td>1,196</td>
<td>Within Groups</td>
<td>1603,616</td>
<td>937</td>
<td>1,711</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blended</td>
<td>73</td>
<td>2,92</td>
<td>1,278</td>
<td>Total</td>
<td>1627,911</td>
<td>939</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>940*</td>
<td>2,93</td>
<td>1,317</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I3.2-It is cheating if I copy-paste information from a website in a work developed by me without citing the original source</th>
<th>DE</th>
<th>532</th>
<th>3,25</th>
<th>1,373</th>
<th>Between Groups</th>
<th>184,198</th>
<th>2</th>
<th>92,099</th>
<th>61,393</th>
<th>.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2F</td>
<td>335</td>
<td>4,16</td>
<td>.980</td>
<td>Within Groups</td>
<td>1405,644</td>
<td>937</td>
<td>1,500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blended</td>
<td>73</td>
<td>4,05</td>
<td>1,079</td>
<td>Total</td>
<td>1589,841</td>
<td>939</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>940*</td>
<td>3,64</td>
<td>1,301</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Although the total sample size was 952, due to missing values the sample was recorded as 940 for this analysis.

Table 4: The Results of Tamhane’s T2 Post-Hoc Tests Applied to Determine the Source of the Cheating and Plagiarism Perception Scores

<table>
<thead>
<tr>
<th>I3.1</th>
<th>DE</th>
<th>F2F</th>
<th>−.344’</th>
<th>.089</th>
<th>.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blended</td>
<td>−.115</td>
<td>.161</td>
<td>.856</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2F</td>
<td>DE</td>
<td>.344’</td>
<td>.089</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Blended</td>
<td>.228</td>
<td>.163</td>
<td>.417</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blended</td>
<td>DE</td>
<td>.115</td>
<td>.161</td>
<td>.856</td>
<td></td>
</tr>
<tr>
<td>F2F</td>
<td>−.228</td>
<td>.163</td>
<td>.417</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I3.2</th>
<th>DE</th>
<th>F2F</th>
<th>−.910’</th>
<th>.080</th>
<th>.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blended</td>
<td>−.807’</td>
<td>.140</td>
<td>.000</td>
<td></td>
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</tr>
<tr>
<td>F2F</td>
<td>DE</td>
<td>.910’</td>
<td>.080</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Blended</td>
<td>.103</td>
<td>.137</td>
<td>.836</td>
<td></td>
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</tr>
<tr>
<td>Blended</td>
<td>DE</td>
<td>.807’</td>
<td>.140</td>
<td>.000</td>
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<tr>
<td>F2F</td>
<td>−.103</td>
<td>.137</td>
<td>.836</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Is there a significant difference in students’ feeling of trust in e-assessment regarding the mode of learning they are involved in?

In order to test the fourth research question, students were asked to respond to item “I4.1” (I would trust an assessment system in which all assessment occurs online). ANOVA was used to analyze the responses of the students based on their groups. On the results of this analysis, post-hoc test statistics were applied to determine the sources of significant difference found among the groups.

As seen in Table 5, for item 4.1 the differences between the group means were statistically significant. [F(2-938)= 8.379; p<0.05]. Tamhane’s T2 post-hoc test statistics were used to compare and determine the sources of this significant difference found among the groups. The findings are presented in Table 6.

When Table 6 is examined, the responses provided to item “I4.1” (I would trust an assessment system in which all assessment occurs online), the trust shown by the face-to-face learning group to e-assessment is significantly higher (3.57 ± 0.96) compared to that of the distance education group (3.25 ± 1.24).

**Table 5: Analysis of Variance Results On the Comparison of the Scores Obtained by the Three Groups on Trust in E-Assessment**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I4.1 - I would trust an assessment system in which all assessment occurs online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>532</td>
<td>3.25</td>
<td>1.239</td>
<td>21,447</td>
<td>2</td>
<td>10,724</td>
<td>8.379</td>
<td>.000</td>
</tr>
<tr>
<td>F2F</td>
<td>335</td>
<td>3.57</td>
<td>.964</td>
<td>1200,527</td>
<td>938</td>
<td>1,280</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blended</td>
<td>74</td>
<td>3.28</td>
<td>1.014</td>
<td>Total</td>
<td>1221,974</td>
<td>940</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>941*</td>
<td>3.36</td>
<td>1.140</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Although the total sample size was 952, due to missing values sample was was recorded as 941 for this analysis.

**Table 6: The Results of Post-Hoc Tests Applied to Determine the Source of Trust in E-Assessment Scores**

<table>
<thead>
<tr>
<th>(I) Group</th>
<th>(J) Group</th>
<th>Mean Diff. (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>F2F</td>
<td>−.319*</td>
<td>.075</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Blended</td>
<td>−.036</td>
<td>.130</td>
<td>.990</td>
</tr>
<tr>
<td>F2F</td>
<td>Online</td>
<td>.319*</td>
<td>.075</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Blended</td>
<td>.283</td>
<td>.129</td>
<td>.088</td>
</tr>
<tr>
<td>Blended</td>
<td>Online</td>
<td>.036</td>
<td>.130</td>
<td>.990</td>
</tr>
<tr>
<td></td>
<td>F2F</td>
<td>−.283</td>
<td>.129</td>
<td>.088</td>
</tr>
</tbody>
</table>

Do the students have any concerns that there might be an increase in cheating and plagiarism if the face-to-face forms of assessment were to switch to online assessments at their university?

The students were given three options in answering this question: “Yes”, “No” or “I don’t know”. 918 students answered this question, which is shown in Table 7.

According to Table 7, the number of students who think there might be an increase in cheating and plagiarism if the face-to-face forms of assessment were to switch to online assessments are less than those who do not anticipate an increase. Another noticeable result is that half of the distance education students (50%) did not have any idea about it. This can be due to a lack of e-assessment experience in their previous courses.

The next step was to ask the students to provide arguments for their answers in an open ended question and 647 students answered this question. Some key categories/notions derived from the data analysis of students' responses to this question which form three fundamentally different views about the impact on e-assessment on cheating and plagiarism increase: optimistic view (n=311), pessimistic view (n=236) and neutral view (n=371). These categories base their principles on the predominant students’ view in regards to their perceptions of cheating and plagiarism in e-assessment. The optimistic view is based upon the students’ understanding that moving from face-to-face education/assessment to distance education/e-assessment, raises no concerns, whatsoever, in regards to increase of misuse of cheating and plagiarism. These are the students who chose the respond “No” to the related question. The pessimistic view is characterized by the understanding that the implementation of e-assessment will create an even more favorable environment for cheating and plagiarism. These are the students whose answer is “Yes” to the related question. The neutral view reflects the students’ views who do not have a clear idea about the consequences of switching to e-assessment in terms of cheating and plagiarism. They are the students who responded “I don’t know” to the related question.

Data demonstrates that 37,61% of the students in face-to-face and 45,90% of them in blended forms of education, share the opinion that cheating and plagiarism will not increase, if e-assessment is introduced and implemented, i.e. they share the optimistic view. However, 50% of the students in distance education mode have a neutral view; they are not clear about the consequences of switching from face-to-face assessment to e-assessment. In the open-ended answers, the arguments of the students in face-to-face, blended and distance education groups were similar to each other. They are presented below.

Optimistic view

33,88% of the students expressed optimistic view as shown in Table 7. The students, who study in blended courses, express the view that the availability of specialized technologies for authentication...
and plagiarism, is an optimistic sign. Students provide examples, such as, using video surveillance (camera) and plagiarism detection software (optimistic-technological approach). Justification of a reason for optimism would be the combination of the face-to-face and the e-assessment, according to two of the students (optimistic-pedagogical approach):

If in parallel with e-assessment some of the face-to-face assessment is used, as the later could serve as a means of identifying cheating with online assessment.

There are software programs that detect copied text from the Internet and students (if they are aware of this fact) will not be plagiarizing. For other forms of cheating, additional control by the evaluators is required.

The students’ arguments in favor of this view between the representatives of face-to-face, blended and distance courses were similar. Some students from face-to-face and distance education courses share their trust in “electronic systems” and plagiarism detection software:

The technological solutions used in online assessment will determine any incident of cheating or plagiarism in a faster and more secure way. This will improve the reliability of online assessment.

An important factor here, as well, is the expressed belief in the human factor – the teacher. According to one of the students, “Professors are competent enough to differentiate and depict the cheating.” According to majority of the students in this group, the introduction and implementation of e-assessment will not contribute in any way to the increase of the attempts to cheat within the processes of assessment. In support of the optimistic view, some students also highlight arguments such as “flexibility of e-assessment and evaluation” and “the control of the time during an online exam” generally presented by the online environment:

Online assessment saves time for students, who for some reason cannot take the exam at the university’s premises. There is a possibility of plagiarism, of course, but I think it is significantly diminished, because of the time constraint set explicitly up for an exam to end – [strict exam time duration].

At the same token, the study makes note of the expression of another significant insight, in particular, that students would not risk their final mark/s, if they were fully aware of the existence of an electronic system being able to identify plagiarism (i.e., the preventive role that anti-plagiarism and authentication technologies can play):

I do not think that the rate of cheating will increase as the students will avoid this behavior knowing that the programs will reveal if the individual had cheated or not.

Another view shared by face-to-face and distance education students is that most of the students’ aim is “learning”, so they will not attempt to cheat:

No cheating would occur as I believe that every student tries to learn.

The expressed optimistic view towards e-assessment of some of the students is based on their experience of face-to-face assessment, where “there are always means to copy or cheat”.

**Pessimistic view**

25.71% of the students expressed pessimistic view as shown in Table 7. These are the students who expressed their arguments in regards to an increase of the possibilities for cheating and plagiarism.
in e-assessment, justify their opinion mainly upon the opportunities that technology provides for copying information and communication, when the exam is conducted without any supervision and/or form of control.

Students, undertaking blended courses, express their pessimistic view solely on their experience during the time of taking tests within the e-assessment environment. The common feedback in this regard is that students are “conducting conversations among themselves during an online test” and that “the availability to transcribe/copy is greater, because of weaker control during the time of an online/e-assessment”. The study also identifies another notion, i.e., “the trend of copying and misuse of identity [misrepresentation by somebody else or false identity], which will increase” which is also reported by the distance education and face-to-face students. The advantages of face-to-face assessment are also grounded as arguments against e-assessment, namely that “live or face-to-face personal contact makes it easier to determine whether someone is cheating. Sometimes the body language and the timbre of one’s voice, displays the scam.” In addition to it, some of the students from both distance education and blended education underline strongly their doubts about the objectivity of e-assessment.

Despite the fact that students undertaking face-to-face courses, have no or little experience in e-assessment, many of them are well informed about it and seriously argue in defense of their pessimism in regards to the implementation of e-assessment in their courses. As a major cause of an increase of cheating and plagiarism, the students state the following arguments – the possibility of: “multiple people being able simultaneously to complete the online test and to write responses, distributing them to other colleagues”, “representing somebody else – false identity”, “the possibility of having a competent person within the discipline to sit next by or close to the computer, so therefore assisting the students in the process of taking the exam “, the use of “mobile devices, free internet access”, and having an access to an “external sources of information hence being able to plagiarize”. This cohort, as well as the group of students in the blended form of education, justify their pessimism as an argument against the merits and benefits of the face-to-face assessment, for instance, the presence of an invigilator during an examination and the presence of personal verbal contact with the teacher.

In general, the main concern of the students in this group is that the lack of control in online assessment will stimulate students who are “massively cheating and plagiarizing” anyway to do it more and more often as the lack of control will facilitate and make it easier for them:

Yes, I would be worried, because there will be many people, who will abuse and take advantage of the e-assessment.

I think the lack of face to face communication will be encouraging for cheating and plagiarism if the necessary precautions are not taken during online assessment. The online assessment environment may fail to check the resources the participant is using at that moment.

We have multiple-choice exams so it will be easy to cheat if there is no system to prevent cheating.

It should be noted as well, that in students’ opinions, there is also a great danger of theft of assessment data and the possibility of it being manipulated:

Because the technology is constantly evolving and I’m a bit concerned about the fact that the system can be hacked and data taken from it, so therefore misused or being used in a scam.

**The Neutral View**

40,41% of the students expressed neutral view as shown in Table 7. The students from face-to-face and distance education that share the neutral view say that they cannot anticipate the consequences
as the increase of cheating will depend on some factors such as the honesty and personality of the users or reliability of the prevention systems. Some students reported that they did not have any idea because they had no such experience:

- It is hard to make an anticipation before experiencing it.
- It depends on the reliability of the system. There might be misleading acts since the technology is highly developed now.
- It depends on the attitudes of the parties that does the assessment and that is being assessed.
- We do not have assignments for assessment, so I do not have any idea.

**Discussion**

This study aimed to identify students’ perspectives on cheating and plagiarism in e-assessment. According to the results, no significant difference was found in means between the groups of the students who have had experience in e-assessment before and those who haven’t regarding their perceptions towards cheating and plagiarism and their feelings of trust in e-assessment. However, there was a significant difference according to the mode of learning the students are involved in on their perceptions towards cheating and plagiarism and their trust in e-assessment. Students enrolled in distance education had lower perceptions than students from other groups about cheating and plagiarism and lower trust in e-assessment. These less favorable perceptions of the distance education students towards cheating and plagiarism can be attributed to the differences in the assessment format of their exams, which largely involve multiple-choice questions. As a result, these students have little or no experience in assessment activities that require preparation of an assignment and therefore, probably did not have a clear idea about what constituted cheating and plagiarism in activities like written assignments. These findings suggest that there is a need to provide more support and information to students regarding what constitutes cheating and plagiarism, regardless of the dominant assessment activity type in their courses, in order to establish and maintain a strong culture of academic integrity in the learning society, as learning is lifelong, not limited to higher education and classrooms alone.

Another finding from the study was that distance education students had lower trust in e-assessment than the students who attend face-to-face courses. According to the studies in the literature, students are willing to take part in e-assessment (Attia, 2014; Dermo, 2009; Ferrao, 2010; Sorensen, 2013). However, Lee-Post and Hapke (2017) found that more than 45% of their online graduate students regarded cheating as being easy in an online classroom, and 30% of the students in their study reported that if they were given the opportunity, they would cheat. Similarly, some of the students who responded to the open-ended question in the present study were sensitive to the subject of cheating and plagiarism and clearly expressed their positions and arguments on the issue. Although there was a greater percentage of optimistic views than pessimistic views, one fourth of the students are pessimistic about the implementation of e-assessment, regardless of their experience with it. These findings are consistent with those from the study conducted by Dermo (2009), who found that the positive feelings of students were only slightly stronger than the negative feelings about the validity, practicality, security and reliability aspects of e-assessment. According to Dermo (2009), this result demonstrates that the students had concerns, and these concerns cannot be ignored.

However, despite their pessimism, students were aware about the factors influencing the cheating and moreover, that these factors were not entirely confined to the form of assessment. The students also emphasized the teachers’ ability to identify cheating and plagiarism and their control of the assessment process, in terms of both variants of the assessment types - the human factor in face-to-face assessments and the technological factor (electronic system and specialized software and hardware...
for plagiarism detection and authentication of students) governing the process of e-assessment. Without question, authentication and authorship systems enhance the trust in e-assessment and decrease pessimistic perceptions about cheating and plagiarism in e-assessment. These findings support the development and implementation of authentication and authorship systems like the TeSLA. According to some researchers, technology makes cheating and plagiarism easy (Bartley, 2005; Rowe, 2004; Gathuri et al., 2014), however, it may also help prevent cheating and plagiarism (Mellar et al., 2018). Therefore, it is important that the preconceptions and concerns of students be addressed by planners and system designers (Hillier, 2014).

On the other hand, the optimistic view of reducing the cheating and plagiarism within the process of implementing e-learning and e-assessment was predominantly based on the following dynamics, as explicitly demonstrated by the study: a) the belief in technology and the availability of specialized software to detect cheating and plagiarism; b) the preventive function of these technologies (student knowledge, awareness of their existence and their unwillingness to discredit themselves and their studies); and c) the combination of electronic and face-to-face forms of assessment.

Conclusion and Suggestions for Future Studies

In conclusion, while most of the students are willing to accept e-assessment practices, some have concerns about cheating and plagiarism and a low degree of trust in e-assessment, which should not be ignored. The reasons for their concerns should be investigated in more detail and addressed by the teachers, administrators and practitioners, all of whom are the responsible authorities for guiding the design and implementation of authorship and authentication systems. This study focused on the perspectives of students before the implementation of e-assessment. In future studies, perspectives on cheating and plagiarism and trust in e-assessment can be investigated after an e-assessment practice. In addition, the association of students’ perspectives with other factors, such as level of study, field or achievement, can be explored.

This study has some limitations. The intention of this study was to gather preliminary data regarding the perspectives of students on cheating and plagiarism in e-assessment. Therefore, the data was collected via a questionnaire. In future studies, qualitative data with one-to-one interviews or focus groups among students can be conducted or self-reports of students can be used in addition to the quantitative data to have an in-depth analysis about the concept.

The participants in this study were from two different countries, however, the intention of the study was not a cross-national study; so experience of students with e-assessment and their perceptions of cheating and plagiarism was not explored by nationality. In future studies, cross-national or cross-cultural comparisons can be done to explore national or cultural aspects of cheating and plagiarism in e-assessment from students’ point of view.

Acknowledgment

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References


Entry qualifications of students as predictors of academic performance in various degree programs in distance education setting in Pakistan

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Abstract

Academic performance of students has always been the area of concern for educational institutions as it is a key indicator of institutional quality. In order to have a better quality output the higher education institutions set some admission criteria such as scores on specified international standardized tests, previous academic qualifications, and admission tests of students or a combination of such scores. Virtual University of Pakistan (VU) is a technology-based distance learning institution that facilitates students who are unable to attend traditional institutions of higher education for a variety of reasons. It was of interest to the researchers to study the entry qualifications of students i.e. the admission criteria, as predictor of their academic performance in various degree programs at VU. For that purpose, the data of 5825 graduates in different two years masters programs in 2015-16 were taken as sample. The entry qualifications of students, and cumulative scores of their previous academic qualifications were taken as predictors of their performance i.e. cumulative grade point average (CGPA,) in relevant degree program. Descriptive (range, percentage) and inferential (pearson r, multiple regression) statistics were applied after grouping the students into low, average and high achievers on cumulative scores as well as entry qualification scores. The results showed significant differences in the predictions and their implications are useful for policy makers and relevant departments of the university as well as for other distance learning educational institutions.

Keywords: Entry qualifications, academic performance, distance education, cumulative scores, Pakistan

Introduction

Quality of the graduates of an educational institution including universities is considered the most important indicator of its quality. On the basis of systems approach, input and output model, it is believed that better quality input students will perform better in terms of learning and achievement. Therefore, universities lay stress on taking those students who could perform better in relevant degree programs. For that purpose universities set certain criteria of admissions. Most common are the aptitude tests, standardized tests, and entry qualification scores, aggregate of previous academic performance scores, interviews or a combination of any or some of these. Purpose of all these criteria is to get a good input in the form students who could perform better. Teacher educators and researchers across the globe have been keen to identify the factors that predict the achievement of the students in different degree programs (e.g. see, Durotolu, 1994; Hijazi & Naqvi, 2006; Jayanthi, Balakrishnan, Ching, Abdul-Latif, & Nasirudeen, 2014; and Kasworm & Pike, 1994).

Many researchers have found significant positive correlation between the school academic performance/entry qualification and tertiary level scores of students. For example, Ogbonnaya, Okpuruka, Iheanacho, and Ndu (2014) studied the correlation between the entry qualification and academic performance of university students and found a positive significant relationship between the two scores. Kapinga and Amani (2016) studied the correlation of entry qualifications and students’ academic performance in undergraduate study programs in Tanzania and found a significant positive
correlation between the two. Chathuranga (2016) studied the previous academic qualification scores of students and their university Cumulative Grade Point Average (CGPA) in Sri Lankan context. This study did not find any correlation between the scores of primary level and university CGPA but it did find a significant positive correlation between O-level and A-level examination scores with university CGPA. Cyrenne and Chan (2010) studied the high school grades of students and their university performance in one university in Canada and found significant correlation between the two variables. Zwick (2013) in a report on high school grades and SAT tests in predicting students’ achievement at tertiary level, illustrated three large scale studies carried out in the US. It was noticed that high school grade point average scores of students were predicting (R²) 13% to 21% while SAT scores of students were predicting only 12-13% of their achievement at tertiary level. Combining the two types of tests i.e. high school grades and SAT scores showed prediction value of 21%-22%.

There are studies that have found low correlation values between entry qualification and university academic performance and hence low predictions from entry qualification scores. For example, Obioma and Salau (2007) have found that the entry qualifications of students measured by their grades from West African Examination Council (WAEC), National Examination Council (NECO) and Joint Admissions and Matriculation Board (JAMB) examinations had low correlation with their first and final year’s performance in the universities. House and Johnson (2002) studied the relationship of GRE scores with the students’ achievement from different disciplines (degree programs) in university and found significant correlation but value of correlation coefficient to be ranging from weak to medium strength for different degrees. The students who were high on GRE scores were also high on university scores.

Agbo (2003) conducted a study on different science subjects at university level and identified low correlation between entry qualifications and students’ performance. Okonkwo (2000) discussed that there is often an inconsistency in entry point and achievement score of students in tertiary institutions. He pointed out that this made it difficult to predict final performance using entry qualification grades.

Taking a sample from on-campus and distance teaching education students Wambugu and Emeke (2016) reported differences in the correlations and predictions between the entry qualification scores and student achievement scores in three different science subjects at undergraduate level. It was noted that on-campus students were performing better than distance education students in one subject only. This high performance in one subject was due to high entry qualification score of on-campus students than distance learning students. In the other two subjects there was no significant difference in the performance of on-campus and distance learning students. That study also observed slightly positive and significant but low correlation between the entry qualifications and academic achievements of both student types. This showed that previous/entry academic scores are predictors of tertiary level performance for both on-campus and distance learning students.

Ali, Haider, Munir, Khan, and Ahmed (2013) studied the factors contributing towards academic performance of students at a Pakistani university. They did not find any correlation between the previous academic scores and degree qualification scores. However, they found the role of demographic variables as significant contributors toward academic performance.

A number of studies on the relationship between entry qualification and academic performance indicate that students with high entry qualification scores often perform better than those with low entry qualification scores (Adedeji, 2001; Aderson, Benjamin & Fuss, 1994; Alias & Zain, 2006; Zezekwa & Mudavanhu, 2011).

The above-cited literature showed some inconsistency in the correlation of entry academic qualifications and academic achievement scores of students. In this paper the researchers intended
to see the predictions for academic performance of students from the admission criteria i.e. entry qualification scores, in Pakistani context.

In Pakistan, online and distance learning educational institutions are still at infancy stage and there is a vacuum of research in this mode of education. Virtual University of Pakistan (VU) is the first online technology based distance learning university in Pakistan. At VU the admission criteria for all undergraduate programs is minimum 45% marks or Cumulative Grade Point Average (CGPA) of 2.0/4.0 in the last degree. For M. Phil it is at least 2.5/4.0 CGPA in the last degree (Admission Eligibility Criteria, 2016-17). VU offers degree programs of various duration, ranging from one year (two semesters) to four years (eight semesters). Only a few certificates, however, are of 18 weeks (1 semester) duration. The assessment of the students at VU is based on the mid-term, final term, assignments, quizzes, graded discussion boards, and in some faculties, internship reports and viva voce examination. In this, information technology based education mode in Pakistan, the correlations and predictions between previous cumulative qualification scores, entry qualification scores and present academic performance of students becomes more valuable to study in order to see the trends and patterns (Alias & Zain, 2006; Mlambo, 2011).

Objectives of the Research

Based on the review of the literature, the following objectives of the present research were designed:

1. To explore the possible correlations between entry academic qualification score, cumulative score and academic performance of students in various degree programs at VU.
2. To find out the predictions made from entry academic qualification scores about academic performance of students in various degree programs at VU.

In order to achieve the above stated research objectives, these research questions were formulated:

1. Do students with different levels of cumulative scores of previous academic qualifications perform differently at VU?
2. Do students with different levels of entry qualification scores perform differently in various degree programs at VU?
3. To what extent does entry qualification and cumulative score predict the academic performance of students in various degree programs at VU?

Methodology

Using cross-sectional design, predictive correlation research method was used in this research. The academic qualification marks i.e., matriculation (10 years education), intermediate (12 years education), and CGPA/ marks of bachelors (14 and 16 years education) were cumulated and then their relationship with the CGPA of their degrees completed at VU was analyzed using pearson r product moment formula. The relationships of entry qualification scores and cumulative score of previous qualifications with VUCGPA were calculated. Multiple regression analysis was also used to see predictions from cumulative scores and entry qualification scores taken as independent variable.

The population of this study was the students who completed their 2 years master degree programs from VU in the years 2015 and 2016. The sample did not include those students who failed in these degree programs; only the data of pass students were taken. The secondary data of their complete academic record including: Matriculation, Intermediate, and Bachelors (two years, 4 years) and their CGPAs achieved in various degree programs at VU were obtained from the
VU through formal request. Degree programs were also segregated into major disciplines and correlations between VUCGPA in those disciplines and cumulative and entry qualification scores were also calculated. The data were further categorized into low achievers, average achievers and high achievers separately for 1) cumulative score and 2) entry qualification score. The correlations were seen separately for low, average and high achievers based on cumulative scores and entry qualification scores.

**Ethical Considerations**

Ethical considerations in data collection were followed. Formal requests to the examination, administration and networking department were made duly channelized and following the university protocols. Anonymity of the data was also assured and ensured by the researchers.

**Significance of the Research**

The results of this research are significant in predicting the student performance based on their entry qualifications. Other studies may be conducted based on the recommendations of this research to expand the empirical evidence on students’ achievement in distance learning education. This research can be important for the university administration for revisiting admission policy. It may also suggest providing individualized support to students with different academic performance backgrounds.

**Delimitation of the Research**

The researchers delimited the current research to measure the predictions of academic achievement score based on entry qualification scores and cumulative scores only. There was no cause and effect relation established in this research. It was further delimited to the students who passed different masters’ degree programs in the years 2015 and 2016.

**Results**

The descriptive and inferential statistical analysis is explained as under. For clarity and better understanding the results of masters’ program are presented in a sequence of cumulative scores’ correlation with VUCGPA, predictions from cumulative scores, subject wise correlation between VUCGPA and cumulative scores, entry qualification score and their correlation with VUCGPA, predictions from entry qualification scores, and subject wise correlation between VUCGPA and entry qualification scores separately.

When Pearson r was applied to see the correlation between VU CGPA and cumulative score of all previous academic degrees of the students, it was found that significant positive correlation existed in the two scores. Correlations between VU CGPA and previous academic qualification scores were also calculated separately. All values of correlation coefficient presented in table 1 were significant at p< 0.01.

<table>
<thead>
<tr>
<th></th>
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<td>.300**</td>
<td>.271**</td>
<td>.222**</td>
<td>.340**</td>
</tr>
</tbody>
</table>

**p<0.01**

Multiple regression analysis was used to determine the predictions of matric, inter, and bachelors scores taken as independent variable for VU CGPA taken as dependent variable. The predictions made were 11.8% significant and significant contributions to this prediction were from all the previous qualification scores. However, this prediction of 11.8% does not establish that VU CGPA can be predicted only through previous academic scores. There could be some other factors along with the previous academic qualification scores that contribute in the CGPA of VU students. The standardized beta coefficients and t-values can be seen in table 2.

<table>
<thead>
<tr>
<th>Table 2: Multiple regression by taking matric, inter, bachelors as independent variables and masters CGPA as dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adjusted R Square</strong></td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Beta</td>
</tr>
<tr>
<td>constant</td>
</tr>
<tr>
<td>Matric</td>
</tr>
<tr>
<td>Inter</td>
</tr>
<tr>
<td>Bachelors</td>
</tr>
</tbody>
</table>

To further probe into the data the students were categorized into low achievers, average achievers, and high achievers based on their cumulative scores. The cumulative scores were calculated by adding the scores of students for their matric, intermediate and graduation external examination. The baseline or standard marks for matric were 850, for intermediate were 1100, and for bachelors were 800. By adding these three scores the sum gets 2750. Out of this total 2750 score of the last three academic qualifications the highest marks obtained score was 2421 and the lowest was 821. These cumulative scores of students were divided into 3 sets of almost equal range to categorize the students into high, average and low achievers. This categorization was made after dividing the number of students (5825) by three; it gives 1941.67. Approximately, 1942 students were included in each of the three categories (low, average, and high). The small variation present in the number of students in different categories each category is due to including the students with same scores in one category.

<table>
<thead>
<tr>
<th>Table 3: Categorization of students on the basis of cumulative achievement scores</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
</tr>
<tr>
<td>Low Achievers</td>
</tr>
<tr>
<td>Average Achievers</td>
</tr>
<tr>
<td>High Achievers</td>
</tr>
<tr>
<td>All</td>
</tr>
</tbody>
</table>

In table 4 the correlations of VU CGPA was calculated with the previous academic qualification scores in terms of low achievers, average achievers, and high achievers categories as made in table 3. It was observed that high achievers based on cumulative scores were showing significantly
higher correlation with the VU CGPA followed by average achievers and the lowest correlation was found for low achievers. These results lead to infer that those who were high achievers in the cumulative scores were also performing high at the VU. The values were significant at $p < 0.01$ as seen in Table 4.

**Table 4: Correlation of VU CGPA with previous academic performance scores - cumulative and by categories—low, average, high achievers**

<table>
<thead>
<tr>
<th>Category by Cumulative scores</th>
<th>Matric</th>
<th>Inter</th>
<th>Bachelors</th>
<th>VUCGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low achievers</td>
<td>.065**</td>
<td>.019</td>
<td>.028</td>
<td>.077**</td>
</tr>
<tr>
<td>Average achievers</td>
<td>0.124**</td>
<td>-.042</td>
<td>.020</td>
<td>.121**</td>
</tr>
<tr>
<td>High achievers</td>
<td>.182**</td>
<td>.193**</td>
<td>.110**</td>
<td>.256**</td>
</tr>
</tbody>
</table>

**$p < 0.01$**

The table 5 depicts the subject wise correlations between VUCGPA and cumulative scores. The masters' degree programs were segregated into different disciplines. The four major disciplines in the masters' degree programs were: business administration; commerce; computer science (CS) and Information technology (IT); and social and behavioural science. The correlations between VUCGPA of business administration discipline and previous academic cumulative scores were highest among the disciplines followed by social and behavioural science discipline and CS & IT. The correlation between VUCGPA of commerce discipline and cumulative score was the least among these disciplines. The correlation coefficient values presented in the table 5 were significant at $p < 0.01$.

**Table 5: Discipline wise correlation between VUCGPA and cumulative scores of previous academic qualifications**

<table>
<thead>
<tr>
<th>Subject wise VUCGPA</th>
<th>N</th>
<th>Cumulative score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration</td>
<td>2895</td>
<td>.359**</td>
</tr>
<tr>
<td>Commerce</td>
<td>520</td>
<td>.305**</td>
</tr>
<tr>
<td>CS &amp; IT</td>
<td>2172</td>
<td>.309**</td>
</tr>
<tr>
<td>Social &amp; Behavioural Sciences</td>
<td>238</td>
<td>.352**</td>
</tr>
</tbody>
</table>

**$p < 0.01$**

The table 6 categorizes the students into low, average, and high achievers on the basis of their entry qualification scores. The criteria of categorizing the students into three groups were the cut point marks of 1st division (high achievers), 2nd division (average achievers) and 3rd division (low achievers).

Table 7 demonstrates the correlation values of low, average, and high achievers based on the entry qualification scores were showing higher correlation of average achievers with VU CGPA than the high achievers. However, the difference in the correlation values was very small. The correlation of bachelor degree low achiever scores was negative with the VU CGPA. It meant that entry qualification low achievers scores do not have any relationship with how these students

The reasons could be, either the number of students in the low achievers category was less, or it could be the equal learning opportunity and fair assessment at VU that it boosted their performances in VU. The predictions made from entry qualification were only amounting to 4.9%.

Table 6: Low, average, and high achievers on the basis of their entry qualification scores

<table>
<thead>
<tr>
<th>Categories</th>
<th>Range</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low achievers (3rd Division)</td>
<td>Up to 359</td>
<td>280</td>
</tr>
<tr>
<td>Average achievers (2nd division)</td>
<td>360-479</td>
<td>4093</td>
</tr>
<tr>
<td>High Achievers (1st Division)</td>
<td>480 and above</td>
<td>1566</td>
</tr>
<tr>
<td>All</td>
<td>288-796</td>
<td>5825</td>
</tr>
</tbody>
</table>

Table 7: Correlation of (low, average, high achievers on the basis of entry qualification scores [bachelors]), and predict of entry qualification score with VU CGPA

<table>
<thead>
<tr>
<th>Bachelors</th>
<th>VU CGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low achievers</td>
<td>−.070</td>
</tr>
<tr>
<td>Average achievers</td>
<td>.136**</td>
</tr>
<tr>
<td>High achievers</td>
<td>.109**</td>
</tr>
<tr>
<td>R²</td>
<td>.049</td>
</tr>
</tbody>
</table>

**p< 0.01

Table 8 reflects the correlations between VUCGPA of different disciplines and entry qualification scores of students. The highest correlation coefficient value was for commerce discipline followed by social & behavioural science and business administration disciplines. The lowest value of correlation was for CS & IT discipline. The values given in table 8 were significant at p < 0.01.

Table 8: Disciplines wise correlation between VUCGPA and entry qualifications scores

<table>
<thead>
<tr>
<th>Subject wise VUCGPA</th>
<th>N</th>
<th>Entry qualification score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business administration</td>
<td>2895</td>
<td>.235**</td>
</tr>
<tr>
<td>Commerce</td>
<td>520</td>
<td>.290**</td>
</tr>
<tr>
<td>CS &amp; IT</td>
<td>2172</td>
<td>.219**</td>
</tr>
<tr>
<td>Social &amp; Behavioural Sciences</td>
<td>238</td>
<td>.245**</td>
</tr>
</tbody>
</table>

**p< 0.01

Discussion

This research strived to achieve two objectives. The researchers applied various descriptive and inferential statistical analyses on the data to address those questions.

Research objective 1. To explore the possible correlation between entry academic qualification score, cumulative score and academic performance of students in various degree programs at VU.
In order to achieve this objective, researchers designed these two research questions. (1) Do students with different levels of cumulative scores of previous academic qualifications perform differently at VU? (2) Do students with different levels of entry qualification scores perform differently in various degree programs at VU?

To address the first research question, the researchers grouped the previous academic qualifications of students of masters' program students. After cumulating their previous academic scores the researchers categorized students in low, average and high achievers category. The correlations of cumulative scores and VUCGPA were determined in terms of coefficient of correlation of Pearson r product moment. For masters' students the overall correlation of cumulative scores with VUCGPA was 0.340, which was considered as significant positive. The correlations of low, average and high achievers on the basis of cumulative scores displayed high achievers to be correlating higher with the VUCGPA than the average achievers, and average achievers showed higher values than low achievers. This was consistent with the literature; we see many studies in conventional educational institutions that report to have such correlations (Aidoo-Buameh & Ayagre, 2013; Alias & Zain, 2006; Braunstein, 2002; Dalziel, & Peat, 1998). To dig further in the data, the masters' degree programs were segregated into different disciplines. The discipline wise correlations of four major disciplines were also calculated between cumulative scores and VUCGPA. VUCGPA of Students in business administration discipline was showing the highest correlation with the cumulative scores. Then correlation of social science discipline was higher than that of CS & It discipline VUCGPA and cumulative scores. The lowest of all correlation was between commerce discipline VUCGPA and cumulative scores. This was another limitation of this research, as it did not evaluate the variation in the correlation values among different disciplines. However, this is not uncommon in such research (e.g. see, Wambugu & Emeke, 2016). The researchers recommend a research to find variations in the correlation values of cumulative scores and their VUCGPA in different discipline students. This was how first research question was answered.

Second research question was to see these relations with entry qualifications. For that purpose the researchers categorized the data into low, average, and high achievers on the basis of their last degree scores. The criteria were discussed in the results section of this paper. For masters' students, the scores of the students categorized as low achievers were showing negative relationship with VUCGPA. This could be attributed to a variety of reasons. For one, the students who were categorized as low achievers got third division in entry qualifications. VU usually do not offer admissions to students with third division degree but when they do they require the students to enroll in a zero semester. Once the students get passed with at least 2.0 CGPA in the zero semester then only they can proceed with the degree. Therefore, this zero semester already enables the students to get familiar with the VU system and mode of education. This could be why they perform better in the VU. Another reason could be the fair assessment system of VU that eliminated all biases of the teachers that might prevail in conventional educational systems. In VU the teachers are unable to identify the students and they can only mark the items randomly without knowing who the student actually is. Because the papers are computer generated and every student gets a different question out of the item bank. Along with this, the papers of students are also marked in terms of items only. A teacher only gets to check the items with no identification of student name or student number, not even a complete paper of any student. The papers are marked in terms of items only and then the examination centre compiles the results of the students. This makes the examination system of VU fair hence eliminating any or all biases. Third reason could be the less number of students in the low achievers category. This is for a fact that when Pearson r has lesser values as input it shows insignificant results.
This is in line with the results from the studies of Jansen (2004), McCarey, Barr and Rattray (2007), McKenzie and Schweitzer (2001). As mentioned previously, the master degree programs were segregated into four major disciplines and correlations between VUCGPA of such disciplines and entry qualification scores were also calculated. The correlations were highest between commerce discipline VUCGPA and entry qualification score. After commerce discipline the second highest value of correlation was of social & behavioural science disciplines followed by the correlation value of business administration disciplines and the lowest among these disciplines was the correlation between VUCGPA of CS & IT discipline students and their entry qualification scores. The reasons for this variation of correlations among different disciplines were not addressed in this research. Not only this variation in the correlation but also the variation in the correlation values of disciplines on the basis of cumulative scores and entry qualification scores was also asymmetrical. Researchers suggest a separate study to find such irregularities in the patterns of correlation in the disciplines. In this way, the researchers had addressed the two research questions. Hence, the first objective of this study was achieved.

**Research objective 2.** To find out the predictions made from entry academic qualification scores about academic performance of students in various degree programs at VU.

To achieve this objective the researchers pursued with this research questions. To what extent does entry qualification score of different levels predict the academic performance of students in various degree programs at VU? To answer this question, multiple regression analysis was run on the data. For masters' students the predictions from the cumulative scores were amounting only to 11.8% with significant contributions from matriculation, intermediate and bachelors' scores. The study of Dalziel and Peat (1998) in University of Sydney found that first semester high CGPA of the students was predicted by their high grades in secondary school. The prediction for VUCGPA made from the entry qualification scores was only 4.9% reflecting other unstudied factors to be considerable in predicting VUCGPA. This is how objective number to was achieved for this study.

**Conclusions and Recommendations**

Based on the analysis done above, it is concluded that in distance education setting in Pakistan, the students in masters are performing in the same pattern as mostly found in the literature about conventional education students. This is concluded based on the result that students with high marks on cumulative scores performed better than those with low and average marks in the cumulative scores. Some coarse patterns were seen in the relationship of entry qualification scores with the recent CGPAs in master degree programs. When the students were categorized into low, average and high achievers on the basis of their performances in the entry qualifications the correlations were weak and could not establish any considerable relationship with their performances in different masters' program at VU. Predictions from cumulative scores were also not very encouraging as it amounted to only 11.8% for masters programs. Across different disciplines in masters' degree program there were variations in the correlations. Researchers conclude that this uneven correlation patterns were because the mode of education of previous degrees was not similar, it could be regular or it could be distance education. Therefore, the researchers recommend to identify the previous mode of education of students and then to compare their correlations and predictions in different disciplines. That correlation comparison should be based on two patterns i.e. a) students who had previous education in regular setup—their correlations with their different degree programs at VU and b) students who had previous qualifications through distance education—their correlation with their performance in different degree programs at VU. Identifying the correlations and predictions on such patterns may help the university in any reconsideration of the admission policy.
Limitations of the Research

This research had certain limitations. The researchers could only access the previous academic marks of the students and not the mode of education and institution type from which the students had completed those degree programs. The researchers considered this a limitation because the present academic achievement of students is measured in a distance-learning mode of education. For better prediction of their performances the researchers assume that previous modes of education of students should have been mentioned in the research. In low achievers on entry qualification scores, the correlation with VUCGPA was negative and insignificant. Another study is suggested here by the researchers to dig further into the data to explore reasons of this variation and to find how these average achievers and low achievers in the above-mentioned programs have actually performed in VU.

References


The relationship between Personality Traits, Learning Styles and Academic Performance of E-Learners

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Abstract

The rapid growth of e-learning has greatly influenced the educational system across the globe. Personality traits and learning styles are both likely to play considerable roles in influencing academic achievement of e-learners. Based on this foundation, a study was designed that attempts to establish the missing links between personality traits, learning styles, and academic performance of students enrolled in various e-learning courses. University students (N=144) completed the Big Five Inventory (BFI), Index of Learning Style (ILS) and reported their grade point average (GPA). One of the Big Five traits i.e. extraversion was positively related with all four learning styles whereas neuroticism was negatively related with all four learning styles. It has also been revealed that GPA was positively correlated with three personality traits and was negatively correlated with neuroticism. Similarly GPA was positively correlated with three learning styles. Finally, there were no significant differences in learning styles and personality traits of e-learners in terms of gender. Implications of these results are expected to help academics, managers, and policy makers for implementation of future e-learning strategies in Pakistan.

Keywords: Personality traits, Learning styles, Academic performance, E-learning

Introduction

Over the last few years, information and communication technology (ICT) has become undoubtedly the most important part of our social milieu and considered as an era of Internet revolution. With the emergence of this latest technology, electronic learning i.e. e-learning has evolved. E-learning involves the utilization of the electronic technologies to access educational avenues outside the traditional classroom (Moore & Kearsley, 2005). E-learning is a new method of interaction between learner and teacher that is mostly carried out either in a form of image, text and/or sound (Fahy & Ally, 2005). The recent trends of e-learning, its success and effectiveness of this mode of educational method are being explored by many researchers. These researchers discussed diverse variables in which learner’s success factor, learners’ satisfaction, self-efficacy, psychological well being, achievement motivation, cognitive styles, as well as learning styles are included (Fahy & Ally, 2005; Offir, Beezalel & Barth, 2007; Bates & Khasawneh, 2007).

E-learning environment has brought about a distinctive psychological arena like all other learning environments. In the related literature, it has been widely accepted that personality traits as well as learning style plays a considerable role for learners and both variables have been explored quite often (Conard, 2006). As far as e-learning perspective is concerned, both personality traits and learning styles have recognized as reliable sources in order to investigate and examine the e-learners’ academic behavior (Hamburger & Ben-Artzi, 2003).

Keeping this fact in mind, it is a dire need to concentrate on learning environments that meet definite learners’ characteristics. In this context, educational researchers should require to develop ways of addressing diverse learning styles and varied personality traits of students especially in e-learning environments, so that, e-learners will find ways to become successful in their respective domains.
Though numerous studies have investigated the relationship of personality traits with many related concepts but there is a scarcity of research studies emphasizing the relationship between learning styles, personality traits and academic achievement (Caspi, Roberts & Shiner 2005).

This study, therefore, intends to provide a preliminary research to encourage the importance of individual differences in personality traits and learning styles of e-learners in order to achieve their academic performance. As it has been suggested by Litzinger, Lee, Wise and Felder (2007), to provide individualized instruction is not the ultimate goal of teaching and learning; rather to identify factors of balanced instruction. The findings of this research will help us not only to examine, investigate and address learners’ individual differences but benefit us to develop student-centered classrooms in order to maximize their learning at the end.

**Conceptual Framework**

In this research study personality traits have been described under the umbrella of “Five-Personality-Factor Model”. Though, Big Five have been defined from different dimensions (Goldberg, 1993). Yet it can be defined precisely as “fairly fixed characteristic of an individual”. It is an ability of an individual to interact with new information and novel circumstances (Jung, 1971). Personality traits are relatively inherent features of the person and usually considered as static (Verma & Sheikh, 1996). The Big Five characterized by openness to experience, conscientiousness, extraversion, agreeableness and neuroticism (McCrae & Costa, 1989; Goldberg, 1993; Saucier, 1994; Judge, Bono, Ilies, & Gerhardt, 2002) (See figure 1).

According to John & Srivastava (1999), Openness to experience trait is characterized as intellectually curious, imaginative, hold unconventional beliefs. People with high score on this trait are likely to be more adventurous, creative and have the ability to think outside the box. People with low score on this trait are likely to be more conventional and may struggle with abstract thinking. Conscientiousness is a personality trait that can be characterized as thoughtfulness, tendency to control impulse, behave in socially acceptable ways and facilitate goal directed behavior (John & Srivastava, 1999).
Extraversion is a trait that can be described as friendly, sociable, assertive, talkative, emotionally expressive and cheerful. Individuals high on this trait have a tendency to gain energy in social settings and are usually outgoing. Agreeableness dimension of personality consists of characteristics such as trustworthy, helpful, altruism, kind, considerate, generous and don’t hesitate to sacrifice their interest (John & Srivastava, 1999). Neuroticism dimension of personality refers to those who have tendency to experience anger, sadness, emotional instability and variety of negative emotions are frequently observed in people who scored high on neuroticism (John & Srivastava, 1999).

In e-learning environment, extroversion and introversion plays a dominant role in enhancing academic performance of e-learners. E-learning environment can be considered beneficial for those students who have introverted preferences as there is no presence of teachers and the fellow students. It can be helpful for these students as such students rely upon nonverbal communication as compared to verbal communication (Atashrouz, Pakdaman & Asgari, 2008).

Therefore, personality trait theory is considered as an imperative source of understanding of individual academic differences in the current study particularly within the context of e-learning. This study would also helps to explore which prominent traits of e-learners would predict better academic performance. This research study would also provide the abundant knowledge for the instructors to develop and restructure their courses in a way that suit online requirements and address differing learning styles (Siddiquei & Khalid, 2017).

Learning Style

The notion that each student has his/her own ways of learning is termed as “Learning Style” which is another theoretical framework for current research study. It can be defined as cognitive, affective, and psychological characteristics which function as constant indicators of how student learn and respond to a learning environment (Felder & Spurlin, 2005). The role of individual differences in learning has been explored in numerous studies in recent years and it has been accepted widely that learning style has become an imperative for development of educational processes. It has also been recognized in various researches during past few decades that learner’s intellectual ability is not the only factor of academic performance but it also depends on the learner’s preferred learning styles (Kolb, 1984). As suggested by Felder (1993), that wide variety of instructional methods needs to be adapted by teachers and instructors in order to accommodate learners’ individual differences, rather than a single strategy which is not enough for all students.

This research study employs learning style under the notion of Felder and Silverman’s (1988) learning styles model. It is based on Kolb’s Learning Style Inventory (Kolb & Kolb, 2005). In Index of Learning Style, Felder and Silverman (1988) provided four dimensions of learning styles including sensing-intuitive, visual-verbal, active-reflective and sequential-global (see figure 2).

The main purpose to use the Felder and Silverman’s (1988) learning style model in the current study is that it would help instructors and teachers to categorize students based on their preferred styles. In addition, limited research studies measured the relationships among the Big Five, learning styles, and academic performance (Bates & Khasawneh, 2007).

E-Learning

In the era of technological revolution and rapidly prevailing society ills such as terrorism, e-learning has become most popular and rapidly growing educational method of choice not only for students
but for the institutions as well. It has become one of the mainstream instructional delivery system (Barkhi & Brozovsky, 2003). It has been evident in numerous studies that there are an increasing number of students who prefer e-learning (Blickle, 1998). Research studies have also highlighted the characteristics why learners prefer this setting more than conventional learning environment (Berge & Mrozowski, 2001). Still, there is not over abundance of researches related to characteristics of e-learners i.e. factors related to e-learners academic performance and their achievement in e-learning settings (Blickle, 1998).

Hence, it has been repeatedly reported that both i.e. personality traits and learning style have significant influence on student’s learning (Wolk & Nikolai, 1997) and enhance the academic performance of learners as well. Therefore, e-learners performance particularly in e-learning settings would be predicted by focusing on the two (see figure 3).

**Significance of the Study**

It has been documented in previous researches that personality traits and learning styles both are somewhat coupled with academic performance. Yet little is known about the joint relationship of personality trait, learning style and academic performance. In this study, researcher aimed to bridge
The relationship between Personality Traits, Learning Styles and Academic Performance of E-Learners

By investigating personality traits and learning styles within e-learning setting, outcome of study should help educators, instructors, designers and developers in improving educational delivery as well as assists to serve the individual needs of e-learners. The significance of such researches particularly within e-learning settings is colossal. While Oblinger, Barone and Hawkins (2001) suggested that college students are enormously increasing while university campuses are insufficient with reference to space in order to accommodate the rising numbers of student population. It is considered as prime advantage of e-learning settings that increasing number of students can be accommodated with no structural modifications. It will also help to enhance students’ enrollment by overcoming the barriers of physical proximity. It will also facilitate educational psychologists, developers and instructional practitioners to locate new ways of administering curriculum and develop course design effectively.

With particular reference to e-learning, it is a dire need to explore such areas of personality trait and learning style for enhancing e-learners performance. It is crucial to understand the significance of such researches for the promotion of different types of learning environments. With the growing number of population of e-learners, it is also significant to establish a connection between learners’ personality traits and their learning styles to a particular environment, which might have remarkable influence on student academic performance. This will also be beneficial for institutions as it will not only boost student satisfaction and increased enrollment as well. This study will provide supplement in existing literature and a significant addition in the knowledge with regard to examine the relationship between personality traits, learning style and academic performance of e-learners in particular.

Research Objectives

This study served following purposes:

1. To explore the relationship among big five personality traits, learning styles and academic performance.
2. To examine different learning styles in terms of gender.
3. To examine big five personality traits in terms of gender.

Literature Review

This study was guided by the big five model for understanding personality traits whereas learning style was studied under the notion of Felder and Silverman’s (1988) learning styles model. Previous studies based on the relationships among Big Five personality traits, learning styles, and academic performance have been discussed in this section. It has been identified that cognitive and non-cognitive individual differences in the development of knowledge play a decisive role (Furham & Chamorro-Premuzic, & McDougall 2003). In several studies non-cognitive differences e.g. big fiver personality traits as compared to cognitive differences are explored as better predictors of academic success (e.g., Furham & Chamorro-Premuzic, & McDougall, 2003; O’Connor & Paunonen, 2007). It has also been found in several other research studies that academic performance was directly correlated with personality traits and learning styles (Barchard, 2003; Duff, Boyle, Dunleavy, & Ferguson, 2004; Noftle & Robins, 2007). However, there is some disparity in identifying the particular personality traits...
and learning styles, which is considered as better predictor of academic performance of students (Trapmann, Hell, Hirn, & Schuler, 2007).

Similarly, numerous researchers (e.g., Rothstein, Paunonen, Rush, & King, 1994; Trapmann et al., 2007) investigated the influence of personality traits on affective and cognitive academic performance in which GPA, state test score, individual score and students’ satisfaction have also been included. In these researches, it was revealed that big five personality traits plays an imperative role in enhancing academic performance (O’Connor & Paunonen, 2007; Trapmann et al., 2007).

It has also been identified in prior literature that Big Five personality traits plays more significant role in order to predict academic performance. Barchard (2003), Duff et al. (2004), Noflte and Robins (2007) and O’Connor and Paunonen (2007) have identified that conscientiousness among all the Big Five personality traits, was considered as most significant trait as well as consistent contributor in predicting academic performance.

Consistently, several other studies was also established that conscientiousness and GPA was positively associated with each other (Barchard, 2003; Chamorro-Premuzic & Furham, 2003; Duff et al., 2004; Oswald et al., 2004; Noflte & Robins, 2007; Laidra, Pullmann, & Allik, 2007). Moreover, Kappe & van de Flier (2010) have identified that other than Conscientiousness, another Big Five personality trait such as openness to experience has also been found as a major contributor in academic performance. Similarly, Rothstein et al. (1994) revealed that openness is also positively correlated with classroom performance and GPA as well.

In spite of the consistent findings, mix results have also been explored in several different studies related to extroversion, emotional Stability and agreeableness, the other three personality traits. In this regard, a negative relationship was identified between personality traits, such as extroversion, emotional stability and agreeableness, and academic performance by Furham and Chamorro-Premuzic (2003). Furthermore, academic achievement for example, GPA was negatively correlated with emotional instability and extraversion (Furham & Chamorro-Premuzic, 2003; Duff et al., 2004), Rothstein et al. (1994) explored that agreeableness have a negative relationship with examination grades.

Inconsistent with these studies, it has been reported that there is no gender differences between openness to experience and conscientiousness (Costa, Terracciano & McCrae, 2001). However, gender differences in agreeableness were consistently revealed in other studies (Weisberg, 2011; Costa, Terracciano & McCrae, 2001). Hence, this study sought to explore the relationships between Big Five and academic performance in view of the above mentioned inconsistent results of the Big Five personality traits and academic performance.

Numerous studies like Kolb (1984), Felder and Silverman (1988) and Vermunt (1998) have explored learning styles in diverse ways and classified learning styles in various ways in their studies. For instance, Kolb (1984) categorized learners into four groups. These are: assimilators, accommodators, divergers, and convergers (Kolb & Kolb, 2005). However, prior researches on various learning style models constantly explored student learning styles and revealed that there are different ways in which students learn and behave in courses that could match or mismatch with their particular learning styles (Liu & Graf, 2009). As shown by Felder and Silverman (1988) students enrolled in engineering courses tend to be more sensors and as a result earned lower grade in their respective courses as compare to tutors.

Similarly, it has been found that as compared to reflective learners, active learners experienced many difficulties in adapting to mismatch courses (Liu & Graf, 2009). They have also reported that sequential learners enrolled in online classes frequently visited learning objects as compared to global learners. As investigated by Kim & Moore (2005) that the learners’ preferred learning styles and their achievement was positively correlated to each other in English courses. Those learners
used auditory learning styles more frequently. In addition, in another study, Alaoutinen and Smolander (2010) explored that the class will perform better if the learning styles and the teaching methods are parallel to each other. Furthermore, the literature provides evidence that learning styles and academic performance also differs in terms of gender. Again, Bates and Khasawneh (2007) supported that there is also gender differences in term of particular learning styles as it has been identified that females as compared to male students are more intuitive and global. Still, it has also been observed that there is a variation in gender differences.

In the present research, this gap of existing literature will be filled by directly exploring the relationships between five personality traits, learning styles, and academic performance and by investigating personality trait and learning style in terms of gender. Following hypothesis will be tested:

1. There is a significant positive relationship between Openness personality trait and Active-Reflective learning styles of e-learners as well as their academic achievement.
2. There is a significant positive relationship between Conscientiousness personality trait and Sensing-Intuitive learning styles of e-learners as well as their academic achievement.
3. There is a significant positive relationship between Agreeableness personality trait and Sequential-Global learning style of e-learners as well as their academic achievement.
4. There is a significant negative relationship between Neuroticism personality trait and all four learning styles (i.e. Active-Reflective, Sensing-Intuitive, Visual-Verbal and Sequential-Global) of e-learners as well as with academic achievement.
5. There is a significant positive relationship between Extraversion personality trait and Visual – Verbal learning style of e-learners as well as their academic achievement.
6. There is a significant difference between personality traits of e-learners with respect to gender.
7. There is a significant difference between learning styles of e-learners with respect to gender.

Research Methodology

Participants

The data was collected from students of Virtual University of Pakistan enrolled in different degree programs. The research sample was consisted of total 144 students (60 males; 84 females). The age of respondents was 16 to 35 years. The sample was characterized further based on the demographic variables such as age, gender, study course, semester and GPA of last semester. Convenience sampling technique, a well-known non-probability sampling technique, was used in selecting the participants for the study.

Measures

The Big Five Inventory (BFI), the Index of Learning Style (ILS), and demographic information sheet was completed by the respondents of the study.

The Big Five Inventory (BFI)

The study adopted a 44- item self-report inventory, developed by John, Donahue, and Kentle (1991) that comprised of adjectives that evaluate the Five Factor Model domains. This instrument has been used extensively and considered as vigorous measure of personality with sound psychometric properties. This instrument consisted of five scales, which include: Extraversion (8 items), Agreeableness (9 items), Conscientiousness (9 items), Neuroticism (8 items), and
Openness (10 items). In this questionnaire, the 5-point Likert scale within a range from 5 for strongly agree to 1 for strongly disagree. Coefficient alphas and test-retest reliabilities across scale scores have been considered as satisfactory (Worrell & Cross, 2004).

The Big Five Inventory (BFI) was chosen for this particular study because it is not only brief and concise but also has established strong internal consistency, retest reliability, convergence with longer version of Big Five measures, and self-peer agreement (John & Srivastava, 1999; Soto & John, 2009). Secondly, the Big Five Inventory (BFI) could be finished within 15 minutes, which is beneficial for a study so that it was also expected that each participant could complete it in a limited amount of time.

**Index of Learning Style (ILS)**

The Index of Learning Style (ILS) was used to measure learning styles of e-learners; it was developed by Felder and Soloman (2004). The 44-items questionnaire consisted of four scales; each scale further comprised of 11 items, which includes active-reflective, sensing-intuitive, visual-verbal, and sequential-global. In this questionnaire every item contains a sentence that needs to be answered from selecting one of two options. In this way, preferred learning style of learners could be detected.

**Demographic profile**

The demographic sheet was developed by the researcher in order to collect background information from the research participants. It includes gender, age, semester, GPA in last semester. With reference to multiple studies (e.g. Bartling, 1988; Busato, Prins, Elshout, & Hamaker, 1998), it has been decided to express academic performance through GPA, which stands for the average grade earned by a student, figured by dividing the grade points earned by the number of credits attempted (ACAP, n.d.).

**Procedure**

The participants of the study were approached. A booklet consisting of demographic sheet, Index of Learning Style (ILS), Big Five Inventory (BFI) was distributed among one hundred and fifty enrolled in different degree programs. It was estimated that the questionnaire took approximately 15–20 minutes to complete. Finally 140 questionnaires were collected from student. The response rate indicates 93% on the basics of total questionnaires. Another 4 questionnaires were excluded due to the missing data and incomplete questionnaires. The participants were informed about the study before administering the questionnaire. After then instructions were given to them. The participants were also instructed to carefully read the instructions given at each part of the questionnaire. They were also instructed to complete the task carefully and do not omit any statement or leave it unfilled.

**Results**

Table 1 illustrates the Pearson product-moment correlation coefficient to assess the relationship between personality traits, learning styles and academic achievement of e-learners.

As table 1 show, there are a number of significant relationships indicated by correlation analysis. Particularly, consistent with our hypotheses, (a) Openness personality trait was positively correlated with Active-Reflective learning styles of e-learners (b) Conscientiousness personality trait was positively correlated with Sensing-Intuitive learning styles of e-learners (c) agreeableness was positively related to Active, Sensing, Visual and Sequential learning styles where as negatively correlated with all the other learning styles (d) extraversion was positively...
Table 1: Correlations among Personality Traits, Learning Style, and GPA (n = 144)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>11</th>
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<tr>
<td>Extraversion</td>
<td>-</td>
<td>0.082</td>
<td>0.042</td>
<td>.265**</td>
<td>.199*</td>
<td>.228**</td>
<td>.236**</td>
<td>0.027</td>
<td>0.036</td>
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<td>0.126</td>
<td>0.025</td>
<td>0.025</td>
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<tr>
<td>Agreeableness</td>
<td>-</td>
<td>.443**</td>
<td>0.161</td>
<td>.457**</td>
<td>0.113</td>
<td>-0.118</td>
<td>.261**</td>
<td>-2.68**</td>
<td>.335**</td>
<td>-3.35**</td>
<td>0.102</td>
<td>-0.102</td>
<td>0.009</td>
<td></td>
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<tr>
<td>Conscientiousness</td>
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<td>0.095</td>
<td>.303**</td>
<td>0.038</td>
<td>-0.046</td>
<td>.239**</td>
<td>.247**</td>
<td>0.103</td>
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<td>Neuroticism</td>
<td>-</td>
<td>0.011</td>
<td>-0.059</td>
<td>0.061</td>
<td>-0.068</td>
<td>0.071</td>
<td>-0.138</td>
<td>0.138</td>
<td>-1.99*</td>
<td>.199*</td>
<td>-0.118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness</td>
<td>-</td>
<td>234**</td>
<td>-2.43**</td>
<td>0.056</td>
<td>-0.066</td>
<td>.376**</td>
<td>-3.76**</td>
<td>0.065</td>
<td>-0.065</td>
<td>0.015</td>
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<td></td>
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<tr>
<td>Active</td>
<td>-</td>
<td>-0.996**</td>
<td>0.057</td>
<td>-0.064</td>
<td>0.039</td>
<td>-0.039</td>
<td>-0.085</td>
<td>0.085</td>
<td>0.003</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Reflective</td>
<td>-</td>
<td>-0.045</td>
<td>0.058</td>
<td>-0.038</td>
<td>0.038</td>
<td>0.08</td>
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<tr>
<td>Sensing</td>
<td>-</td>
<td>-0.997**</td>
<td>-0.025</td>
<td>0.025</td>
<td>-0.231**</td>
<td>.231**</td>
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<tr>
<td>Intuitive</td>
<td>-</td>
<td>0.026</td>
<td>-0.026</td>
<td>.230**</td>
<td>-.230**</td>
<td>0.007</td>
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<tr>
<td>Visual</td>
<td>-</td>
<td>-1.000**</td>
<td>.185*</td>
<td>-.185*</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Verbal</td>
<td>-</td>
<td>-0.185*</td>
<td>.185*</td>
<td>0</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequential</td>
<td>-</td>
<td>-1.000**</td>
<td>-0.058</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Global</td>
<td>-</td>
<td>0.058</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>GPA</td>
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</table>

Note:*p < .05; *p < .01
### Table 2: Independent Sample t-test for measuring Gender differences in Personality Traits

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
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<tbody>
<tr>
<td>Extraversion</td>
<td>M</td>
<td>60</td>
<td>24.65</td>
<td>4.95343</td>
<td>-0.166</td>
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<tr>
<td></td>
<td>F</td>
<td>84</td>
<td>24.7857</td>
<td>4.73915</td>
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<tr>
<td>Agreeableness</td>
<td>M</td>
<td>60</td>
<td>29.15</td>
<td>5.95413</td>
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<tr>
<td></td>
<td>F</td>
<td>84</td>
<td>30.5714</td>
<td>8.30196</td>
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</tr>
<tr>
<td>Conscientiousness</td>
<td>M</td>
<td>60</td>
<td>27.95</td>
<td>4.99296</td>
<td>-1.721</td>
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<td></td>
<td>F</td>
<td>84</td>
<td>29.6429</td>
<td>6.341</td>
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<tr>
<td>Neuroticism</td>
<td>M</td>
<td>60</td>
<td>23.6333</td>
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<td>84</td>
<td>24.5714</td>
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<td>Openness</td>
<td>M</td>
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<td>4.9871</td>
<td>0.628</td>
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<td>84</td>
<td>31.5476</td>
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### Table 3: Independent Sample t-test for measuring Gender Differences in Learning Styles

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>P</th>
</tr>
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<tr>
<td>Active</td>
<td>M</td>
<td>60</td>
<td>5.6</td>
<td>1.64883</td>
<td>-1.242</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>84</td>
<td>5.9643</td>
<td>1.7932</td>
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<tr>
<td>Reflective</td>
<td>M</td>
<td>60</td>
<td>5.4</td>
<td>1.64883</td>
<td>1.145</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>84</td>
<td>5.0595</td>
<td>1.83245</td>
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<tr>
<td>Sensing</td>
<td>M</td>
<td>60</td>
<td>4.8667</td>
<td>2.15868</td>
<td>-4.114</td>
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<tr>
<td></td>
<td>F</td>
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<td>6.3571</td>
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<tr>
<td>Intuitive</td>
<td>M</td>
<td>60</td>
<td>6.1333</td>
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<td>4.069</td>
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<tr>
<td></td>
<td>F</td>
<td>84</td>
<td>4.6667</td>
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<tr>
<td>Visual</td>
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<tr>
<td></td>
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<tr>
<td>Verbal</td>
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<td>1.70443</td>
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<tr>
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<td>F</td>
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<td>5.1429</td>
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<tr>
<td>Sequential</td>
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<tr>
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<td>5.5714</td>
<td>1.83202</td>
<td></td>
</tr>
<tr>
<td>Global</td>
<td>M</td>
<td>60</td>
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<td>1.80856</td>
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<td>84</td>
<td>5.4286</td>
<td>1.83202</td>
<td></td>
</tr>
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</table>
related with all the four learning styles (e) Finally Neuroticism was negatively correlated with all the four learning styles. It is interesting that GPA was positively correlated with three personality traits (i.e. openness, agreeableness, and conscientiousness) and was negatively correlated with Neuroticism personality trait. Similarly GPA was positively correlated with three learning styles i.e. Active, Intuitive and Global learning styles and was negatively correlated with Reflective, Sensing and Sequential learning styles. However, no relationship was found between GPA and Visual-Verbal learning styles.

Table 2 illustrates the Independent sample t-test to assess the significant difference between personality traits of e-learners with respect to gender.

As table 2 shows, there were significant gender differences among the e-learners in three of the personality traits i.e. Agreeableness, Conscientiousness and Neuroticism. Females show high level of agreeableness and Conscientiousness as compared to males.

Table 3 illustrates the Independent sample t-test to assess the significant difference between learning styles of e-learners with respect to gender.

As table 3 shows, there were no significant differences in learning styles of e-learners in terms of gender.

Discussion

The results established a number of significant relationships between the Big Five personality traits, learning styles, and academic achievement. The result also showed that there are significant differences between the e-learners in three of the personality traits: Agreeableness, Conscientiousness and Neuroticism in terms of gender. Moreover, it is also revealed that there are no significant differences in learning styles of e-learners regarding gender. Specifically, a number of practical insights and implications have been provided by the result findings of the current study on the strong relationships between personality traits and learning styles, and their joint influence on academic achievement as well.

First, there are several significant implications of personality results for students and instructors. Personality traits have a facilitative role in learning process of e-learners and it also helps to motivate the e-learners. These traits are of utmost importance for the e-learners with respect to their academic performance an achievement in learning environment (Ibrahimoglu, Unalci, Samancioglu, & Baglibel, 2013). Such students are able to deal with time management, create their own learning environment, enjoy challenging tasks and their intrinsic motivation facilitates their learning process and in turn enhances academic achievement of students enrolled in different e-learning programs across the world. These findings are consistent with other studies (Furnham, Chamorro-Premuzic, & McDougall, 2003; Lounsbury et al., 2003; Chamorro-Premuzic & Furnham, 2003; Duff et al., 2004; Dunsmore, 2005; Atashrouz, Pakdaman & Asgari, 2008; Di Fabio & Palazzeschi, 2009).

Secondly, the results also highlighted that personality traits and learning styles are correlated to each other, which could guide e-learners to enhance learning and, as a result the fulfillment and self-satisfaction of learning process will be improved among e-learners. It shows that learning is the origin of all captivating improvement and advancement of learners. This study provides clear evidence that conscientiousness and many of the learning styles were positively correlated and also have strongest association along with GPA. In this way, conscientiousness not only aid a variety of successful learning strategies but also considered as valuable characteristic in order to attain academic performance in particular. This finding is consistent with other studies (Zweig & Webester, 2004; Martin, Montgomery & Saphian, 2006; Hoswini & Latifian, 2009; Komaraju, Karau & Schmeck, 2009).
Consistent with other studies, such as Chamorro-Premuzic and Furnham (2003), Lounsbury (2003), Khormaii and Kheir (2006), Laidra, Pullmann and Allik (2007); Atashrouz, Pakdaman and Asgari (2008), Komaraju, Karau and Schmeck (2009), have revealed that agreeableness and most of the learning styles were significantly correlated and with GPA as well. Likewise Openness was significantly correlated with Active, Reflective, Visual and Verbal learning styles and GPA as well. These findings suggest that, in addition of being conscientious, learners who are cooperative and intellectually curious may also benefit from learning process. In this regard, teachers and instructors who understand the significant role of personality traits and considered them as important for academic performance will possibly devise courses, assignments and other teaching methods that promote and enhance conscientiousness, openness and agreeableness.

The results of the present study revealed that neuroticism was negatively correlated with all the learning styles. It is interesting that GPA was positively correlated with openness, agreeableness, and conscientiousness personality traits and was negatively correlated with neuroticism personality trait. It is somewhat consistent with other research studies (Matthews & Zeidner, 2004; Entwistle & Tait, 1996).

Third, the study was consistent with the notion that all four learning styles were correlated with GPA, in order to correspond to different learning approaches of e-learners and process as well as perceive information that plays a significant role for learning (Schmeck, Ribich & Ramanaiah, 1977). Most of the research studies in this regard emphasized that every student follows a different learning style and differ in their attitudes towards the learning process. Offir, Bezalel and Barth (2007) revealed that sequential learning style and academic achievement both are significantly associated with each other. The results are somewhat identical with the results of the present study. According to Pashler, McDaniel, Rohrer and Bejork (2008) students will perform better if their learning styles are in accordance with their personality characteristics. In another study, it has been explored that abstract conceptualization of learning style is directly correlated with academic achievement in mathematics and English language (Homayoni & Abdolahi, 2003).

In conclusion, the results of present study make an essential contribution to our understanding by identifying a number of connecting links between personality, learning styles, and academic performance. Future research would possibly expand our understanding of the intricate nature of academic performance by exploring different but related factors (such as self-efficacy) as well as environmental factors such as socioeconomic status or different other institutions as predictors of academic performance.

References


The relationship between Personality Traits, Learning Styles and Academic Performance of E-Learners


The relationship between Personality Traits, Learning Styles and Academic Performance of E-Learners


Employers’ Perception and Expectations of Professional Competency of Distance Learning Graduates: A Tracer Study of Nursing Graduates of the National Open University of Nigeria (NOUN)

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Abstract
This tracer study was designed to track National Open University of Nigeria (NOUN) graduate nurses in their places of work with a view to ascertaining their level of professional competency and to explore employers’ expectation of graduate competencies. The study employed the descriptive survey design. Participants included 222 NOUN alumni who graduated in nursing programme and a corresponding 222 heads/top-level managers of the organizations where the graduate nurses were employed. Multiple instruments were used to collect data including competency test, survey questionnaire, and direct observation. A number of remarkable findings emerged from this study, both expected and unexpected. Majority of sampled graduates appeared to possess high level of professional competency in all three competency dimensions measured. A significant proportion of employers seemed to hold high perception regarding the graduates. In matching the employers’ perception of ODL graduates against actual competencies of NOUN graduate nurses with the use of quadrant analysis, the resulting values showed that a significant proportion of the graduates met and exceeded employer expectation.

Keywords: tracer study; NOUN; graduate nurses; professional competency; employer expectation

Introduction
The emergence of open and distance learning (ODL) has marked a turning point in the provision of educational opportunities for many people. Nigeria, as one of the world’s developing nations, has embraced ODL as an emerging mode of educational delivery. One aspect of the contribution of ODL is the opportunity it affords the “work and learn” students who are not in a position to attend regular university since many people cannot afford to leave their work in order to study. Therefore, distance education plays a major role in upgrading the knowledge and skills of various categories of professionals such as teachers, accountants, and nurses.

The National Open University of Nigeria (NOUN) is the first full-fledged university in Nigeria that operates an exclusively open and distance learning (ODL) mode of education. The motto of the university “Work and Learn” epitomizes a shift in paradigm where learners are able to combine work and study in order to acquire quality education. By this form of learning, students enjoy the opportunity of working and learning at the same time without one activity negatively affecting the other (Jegede, 2005). NOUN has produced six sets of bachelor degree graduates since its inception in 2003/2004. It is believed that the true measure of the value of an institution of higher learning is the quality of its graduates. The quality of the graduates in turn is contingent upon the quality of the courses and programmes that are offered by the institution (Smiley, Bedford & Clark, 2010). Generally, graduates in various workplaces are expected to transfer the competencies acquired at the university, and their progress monitored through tracer study.
Researchers have identified the importance of tracer studies. A tracer study is an attempt to trace the activities of the graduates or previous students of an educational institution with the aim of establishing the relevance of the knowledge and skills graduates acquired at university to their places of work (Millington, 2007). Tracer studies of ODL graduates are important in providing the information needed to reform educational programmes to bring about the fit between the requirements of the employment world and study. The ODL provider is expected to make a complete assessment of how the educational process has impacted their graduates and then use the data to make modifications that could enhance their students' chances of achieving success. For instance, in Nigeria, a tracer study was conducted for the Nigerian Teachers' Institute (NTI), which launched its Nigeria Certificate in Education by ODL in response to urgent need to train more teachers. Based on the findings, the Institute is said to have improved its management and monitoring systems and efforts had been made to address inadequacies revealed in the study (Umar, 2006 cited in Millington, 2007).

In gauging the quality of ODL graduates, employers are seen as one of the primary stakeholders in quality assurance issues. According to Seyoum (2008), different people perceive the advantages of ODL differently and their perceptions have influenced their attitudes towards the acceptance and use of ODL in the system. Eggen and Kauchak (2001) see perception as the process by which people attach meaning to experiences. Therefore, the perception of employers regarding the quality of ODL graduates is critical. The study is based on the Haywood and Maki model (cited in Kamau & Waudo, 2012) in which they argue that quality exists when expectation matches perception. According to the model, the degree to which employers are satisfied with the skills and knowledge of their employees can be a measure of the extent to which the education and training system is responding accurately to the prior expectations of the employers. It therefore means that the employers’ perceptions and expectations about the skills and competencies of their employees are a good measure of quality.

Since research has found that competencies are acquired at different rates in different professions (Hatcher & Lassiter, 2005), it is essential to focus on one particular field at a time when conducting tracer study. Hence, the current study targets graduates from the B.Sc Nursing Programme, given the nature of the programme, which is competency-based.

The current study therefore is a tracer study designed to ascertain the level of professional competency of NOUN nursing graduates in their work place through an exploration of employers’ expectations of these competencies so as to determine whether the graduates met those expectations. Since this is the first tracer study to be conducted on NOUN graduates, it is expected that the information obtained from the study will provide a useful insight into understanding the relationship between the requirements of the employment world and study, and also help NOUN management in an objective assessment of the relevance or otherwise of its programmes. In this study, attempts were made to answer the following questions:

1. What is the present level of professional competency among NOUN graduate nurses in their workplace as assessed by external assessors?
2. What significant changes have occurred in NOUN graduate nurses’ attitude to work (from the time of enrollment through the completion of studies and thereafter)?
3. What proportion of graduates’ professional competency is attributed to workplace experience and what proportion is attributed to the education received from NOUN?
4. What proportion of NOUN graduate nurses can meet employer expectations?
5. How do NOUN graduate nurses rate the quality of education provision in NOUN?
Methods and Procedures

Study Area and Design

For purposes of the study, Nigeria was divided into three regions according to her three dominant ethnic groups: Northern, South Western and South Eastern regions. The study was conducted in three metropolitan cities, one from each of the three regions, namely, Abuja, Lagos and Port Harcourt, respectively. This was in order to have a good representation of the geographical spread. The three cities were chosen due to their peculiar characteristics. The study employed the descriptive survey design.

Participants

Two sample groups were used in the study: They comprised 240 NOUN graduated nurses from the cohorts of 2012 bachelor degree graduates, as well as 240 heads of the organizations where these nurses were employed (herein referred to as employers. In choosing the graduate sample, certain criteria were considered, they include: graduates who were working while studying, who were in regular employment, who had remained in the same employment from the time they enrolled in NOUN through the time they completed their studies, who were working in private and public sectors. These considerations were meant to control for the effects of confounding variables. The graduates’ list was obtained from NOUN academic records office from which the names of participants were compiled. Records showed that a total of 1,751 nurses graduated during the 2012 academic section. Purposive sampling was then applied to select 240 that met the inclusion criteria described above (222 was used in the analysis due to completion defects in data collection tools).

Instruments

Several measures were used in data collection as detailed below:

(1) Clinical competency assessment test for graduate nurses (CCATGN): It was designed to assess the level of professional competency of NOUN graduate nurses. The instrument had three sections. Section A tagged structured clinical observation guide (SCOG) contained a list of 48 competencies that were grouped into 10 domains. Each domain contains a set of performance criteria and their relevant indicators, which describe the competencies and attributes that graduate nurses must have in order to carry out their duties effectively. It was adapted from the Clinical Assessment for General/Psychiatric Nurses, an instrument developed by the Nursing and Midwifery Council of Nigeria (1979), for assessing nursing competencies. The adapted version was structured in a 4-point scale (4= Excellent to 1=poor). The nurses were observed while performing their normal job task and assessed on their level of clinical performance. The maximum possible score was 192 and the minimum 48, higher scores indicating higher level of professional competency.

Section B was labeled nursing care plan assessment guide (NCPAG) and designed to assess the nursing documentation process. Documentation is an integral part of nursing practice (Bjorvell, 2002), and the quality of the care provided to patients can only be measured by the quality of nursing documentation. Therefore, the assessors had to critically examine and assess how NOUN graduate nurses documented the nursing care plan which covered the five phases of nursing process: assessment, nursing diagnosis, planning, implementation, and evaluation (White, 2003), using the following criteria: coverage, accuracy, sequence, clarity, presentation, which were rated on a 4-point
scale ranging from 4= excellent to 1=poor. Altogether, there were 25 items in the instrument. The possible score that each participant could make ranged from 100 to 25.

Section C of the instrument is titled probing questions (PQ). This section was designed to assess knowledge and understanding of nursing practice following the strategy employed by Levett-Jones et al. (2011). Following the observation period, participants were requested to explain and defend their actions through the use of probing and open ended questions that were used to elicit the intentions, reasons, and rationales underpinning their behaviors and actions. The intent was to assess the nurses' ability to explain why they chose a particular procedure. In probing the nurses, the assessors were also looking for evidence of critical thinking and clinical reasoning, as well as content knowledge and oral communication skills, which are key attributes of a professional nurse. The assessors rated the nurses on these attributes on the basis of 4-response scale: above average, average, below average, and poor. The scores obtainable by each participant ranged from 16 to 4.

The maximum and minimum composite scores obtainable in the three sections (A, B, and C) ranged from 308 to 77. Data generated from the three sections was used to answer research question 1.

(2) Employer Perception of NOUN Graduates Nurses (EPGN): This instrument was designed to determine employer perception of ODL graduates, the purpose of which was to find out how well the employers felt about NOUN graduates. The employers were requested to indicate their level of satisfaction with NOUN graduates nursing competency. Data generated from EPGN was used to answer research question 4.

(3) Employer Assessment of Graduates Attitude Towards Work (EGATW). This instrument was completed by the employers. It was designed to assess the frequency of occurrence of critical incidents (e.g. absenteeism, lateness, number of queries and warnings) prior to and after completion of studies. The idea was to determine whether or not there has been any significant change in NOUN graduates’ attitude to work. Data generated from EGATW was used to answer research question 2.

(4) Graduate Assessment Questionnaire (GAQ). This instrument was completed by graduate participants. The instrument was divided into four sections. Section A covered demographic and personal information. Section B was titled workplace training provision (WTP) designed to assess workplace experiences acquired by the graduates. Data generated from section B was used to answer research question 3. Section C was titled scale of attitude toward work (SATW). It contained 10 items rated on a 4-point response scale (4=strongly agree to 1= strongly disagree), designed to assess graduates’ attitude to work. The idea was to determine whether or not there had been any significant change in the graduates’ attitude to work before and after graduation. Data generated from section C was used to answer research question 2. Section D contained 10 items designed to assess the quality of education provision in NOUN from graduates’ perception. All items were rated on a 4-point scale ranging from 4= excellent to 1=poor. Data generated from section D was used to answer research question 5.

Validity and Reliability

The face and content validity of the various instruments were determined through experts’ judgment comprising a panel of three experts in the nursing profession. Their suggestions and recommendations were effected to produce a final draft. The internal consistency reliability based on the Cronbach’s alpha was calculated for CCATGN, EPGN, EGATW, and GAQ with respective coefficients of 0.81, 0.78, 0.85, and 0.88 obtained. All reliability coefficients were well above the acceptable range of 0.70 level (Burns & Grove, 2005) therefore was found to be reliable.
Procedure and Data Analysis

The study was conducted with careful consideration to ethical standards of research and rights of the participants. A pool of 12 field assistants/external assessors were recruited and trained on the data collection procedure. Each field assistant visited 20 organizations. The graduate participants were contacted on phone and then traced to their places of work. After obtaining their consents and those of the hospital authorities involved in the study, participants were assured that information collected would be treated with the utmost confidentiality. Direct observation of graduate nurses was carried out by external assessors using the approved guides (SCOG, NCPAG and PQ), followed by the completion of a questionnaire package that included EPGN and EGATW. The graduate nurses were observed at their office stations while performing their normal job task. Observations were conducted by the external assessors twice a week each lasting for 30 minutes over three consecutive weeks, totaling three hours of observation per graduate participant and a total of 180 observation sessions for all graduate participants combined. During these observations, event-recording method was used to record instances of the target behaviors as they occurred by putting a mark in specific columns of the observation data sheet. Altogether, 222 graduate nurses were observed. The data collection process lasted three weeks. Data collected were analyzed using basic descriptive statistics such as frequency counts, percentages, mean, standard deviation and quadrant analysis.

Results

The findings of the study are presented according to the research questions raised in the study.

Present level of professional competency of NOUN graduate nurses

To answer research question 1, data gathered from CCATGN were analyzed at three levels. At the first level, the responses on the 48 items on the Clinical Observation Guide were analyzed with the use of frequencies and weighted mean scores. The cut-off point for judging the significance/non-significance of scores was set at 2.5. Since the 48 items were grouped into 10 domains of competency each measuring different competency attribute, scores were obtained by summing the scores of all items within a domain yielding a mean score for that domain category. The result is presented in Table 1a.

Table 1a revealed that all the variables put together yielded an overall competency mean score of 3.20, which was above the cut-off point of 2.50 indicating a high level of competency in clinical performance amongst sampled participants. Table 1a further shows that the 10 competency domains had mean scores ranging from 2.93 to 3.41. Each mean was above the cut-off point of 2.50. It is therefore evident that the nurses’ level of competency in clinical performance was high.

At the second level, the responses on the 15 items on the Nursing Care Plan Assessment Guide were analyzed with the use of frequencies and weighted mean scores. The result is presented in Table 1b.

Table 1b revealed that all the variables put together yielded an overall documentation mean score of 3.17, which was above the cut-off point indicating a high level of competency in the way in which graduate participants documented their clinical report. The mean score on each of the phases of nursing process ranged from 3.04 to 3.32. It is therefore evident that the level of competency in nursing documentation was high.

Data for the third dimension of competency were gathered from Probing Questions (PQ). The mean scores and standard deviation were computed and ranked. The result is presented in Table 1c.
Table 1c revealed that both the overall mean score as well as the mean scores for each of the variables examined were above the cut-off point of 2.50. The ranking of the scores shows that the participants demonstrated highest competency in clinical reasoning, followed by content knowledge with oral communication and critical thinking ranking the least.

Overall, from the analysis presented in Tables 1a, 1b and 1c, it could be inferred that the level of professional competency of majority of NOUN graduate nurses was high.

Significant changes that occurred in NOUN graduates attitude to work (from the time of enrollment through the completion of studies and thereafter)

To answer research question 2, data were gathered from two instruments - employer assessment of graduates’ attitude towards work (EGATW) and graduate assessment of attitude toward work (GATW). Table 2 analyzed the data derived from EGATW while Table 3 analyzed the data derived from GATW.

Table 2: Descriptive Analysis of NOUN Graduates Attitude to Work Before and After Graduation as Assessed by Employers

<table>
<thead>
<tr>
<th>Indicators</th>
<th>N</th>
<th>Before Graduation</th>
<th>After Graduation</th>
<th>MD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean  SD Std Error</td>
<td>Mean  SD Std Error</td>
<td></td>
</tr>
<tr>
<td>1. Absenteeism</td>
<td>222</td>
<td>.49 .906 .061</td>
<td>.17 .440 .030</td>
<td>.32</td>
</tr>
<tr>
<td>2. Lateness</td>
<td>222</td>
<td>.81 .956 .064</td>
<td>.30 .564 .038</td>
<td>.51</td>
</tr>
<tr>
<td>3. Number of complaints against the employee</td>
<td>222</td>
<td>.56 .775 .052</td>
<td>.20 .465 .031</td>
<td>.36</td>
</tr>
<tr>
<td>4. Number of queries and warnings</td>
<td>222</td>
<td>.37 .673 .045</td>
<td>.17 .408 .027</td>
<td>.20</td>
</tr>
<tr>
<td>5. Number of work related accidents</td>
<td>222</td>
<td>.36 .691 .046</td>
<td>.17 .408 .027</td>
<td>.19</td>
</tr>
<tr>
<td>6. Use of mobile phone while at work</td>
<td>222</td>
<td>.36 .649 .044</td>
<td>.18 .476 .032</td>
<td>.18</td>
</tr>
</tbody>
</table>

Key: SD = Standard deviation, MD = Mean difference

Table 2 revealed that the calculated mean values obtained for the six indicators before graduation ranged from .36 to .81 while the mean values obtained after graduation ranged from .17 to .30. The mean scores of ‘after graduation’ were less than those ‘before graduation’ in all the indicators examined. Because the indicators portrayed negative attributes, a reduction in scores indicates a significant change in the positive direction. Therefore it could be deduced that the rate of absenteeism, lateness, number of complaints, number of queries, number of work-related accidents, and use of mobile phone, dropped after graduation.

Table 1c: Analysis and Rank Order of Means of NOUN Graduates Level of Competency in Knowledge and Understanding of Nursing Practice

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Standard Error</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clinical reasoning</td>
<td>3.36</td>
<td>.583</td>
<td>.039</td>
<td>1st</td>
</tr>
<tr>
<td>2</td>
<td>Critical thinking</td>
<td>3.16</td>
<td>.653</td>
<td>.044</td>
<td>4th</td>
</tr>
<tr>
<td>3</td>
<td>Oral communication</td>
<td>3.23</td>
<td>.621</td>
<td>.042</td>
<td>3rd</td>
</tr>
<tr>
<td>4</td>
<td>Content knowledge</td>
<td>3.25</td>
<td>.679</td>
<td>.046</td>
<td>2nd</td>
</tr>
</tbody>
</table>

Overall knowledge and understanding mean score = 3.25* (significant)
Table 3: Descriptive Analysis of NOUN Graduates Attitude to Work Before and After Graduation as Assessed by Own Self

<table>
<thead>
<tr>
<th>S/N</th>
<th>Attitude items</th>
<th>N</th>
<th>Before Graduation</th>
<th>After Graduation</th>
<th>MD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Std Error</td>
</tr>
<tr>
<td>1</td>
<td>I am very interested in this work, it is very important for me</td>
<td>222</td>
<td>3.60</td>
<td>.490</td>
<td>.033</td>
</tr>
<tr>
<td>2</td>
<td>Sometimes I absent myself from duty</td>
<td>222</td>
<td>2.96</td>
<td>.815</td>
<td>.055</td>
</tr>
<tr>
<td>3</td>
<td>I don’t like the kind of job I do</td>
<td>222</td>
<td>3.62</td>
<td>.565</td>
<td>.038</td>
</tr>
<tr>
<td>4</td>
<td>I accept assignments without complaints</td>
<td>222</td>
<td>3.32</td>
<td>.494</td>
<td>.033</td>
</tr>
<tr>
<td>5</td>
<td>I arrive on time prepared to work</td>
<td>222</td>
<td>3.52</td>
<td>.527</td>
<td>.035</td>
</tr>
<tr>
<td>6</td>
<td>I feel very dissatisfied about my job</td>
<td>222</td>
<td>3.55</td>
<td>.620</td>
<td>.042</td>
</tr>
<tr>
<td>7</td>
<td>I would be better off working under different environment</td>
<td>222</td>
<td>3.28</td>
<td>.885</td>
<td>.059</td>
</tr>
<tr>
<td>8</td>
<td>I take much pride in my job</td>
<td>222</td>
<td>3.59</td>
<td>.546</td>
<td>.037</td>
</tr>
<tr>
<td>9</td>
<td>Sometimes I feel bored about my job</td>
<td>222</td>
<td>3.20</td>
<td>.716</td>
<td>.048</td>
</tr>
<tr>
<td>10</td>
<td>I participate in all clinical activities when on duty</td>
<td>222</td>
<td>3.20</td>
<td>.543</td>
<td>.036</td>
</tr>
<tr>
<td>11</td>
<td>Taking care of patients makes me fulfilled</td>
<td>222</td>
<td>3.57</td>
<td>.496</td>
<td>.033</td>
</tr>
</tbody>
</table>

Key: SD = Standard deviation, MD = Mean difference

As displayed in Table 3, the calculated mean values obtained for all 11 indicators before graduation ranged from 2.96 to 3.60 while the mean values obtained after graduation had a similar range except for item number 4 “I accept assignments without complaints” which recorded a difference of .14, indicating that graduates’ attitude to work remained relatively the same before and after graduation, indicating a positive attitude to work.

Proportion of graduates’ professional competency that is attributed to workplace experience and the proportion attributed to education received from NOUN

In order to answer research question 3, the scores gathered from Clinical Competency Assessment Test for Graduate Nurses were analyzed with the use of frequencies and percentages. Graduate nurses’ level of competency was classified into two - high and low. It was found that 173 (77.9%) constituted participants with high professional competency while 49 (22.1%) represented those with
low competency. Participants under the high competency group (173) were considered for analysis in attempt to answer the research question. Again scores gathered from responses on Workplace Training Provision (WTP) was used to group participants into two - participants who had spent several years on the job and had attended many training courses, seminars, conferences and workshops relevant to their work, and participants who had spent few years on the job and had received limited training programmes. Since the maximum and minimum score obtainable for each participant was 36 and 0 respectively, any participant that scored 18 and above was considered to have received many workplace training programmes while those that scored below 18 were considered to have received limited training programmes. Since both groups belonged to the high competency group, the competencies of those participants who had received limited exposure to training programmes could be attributed to the education received from NOUN. Table 4 shows the results.

Table 4: Descriptive Analysis of Proportion of Graduate Competency Attributed to Workplace Experience and Education in NOUN

<table>
<thead>
<tr>
<th>Competency category</th>
<th>Frequency</th>
<th>%</th>
<th>Mean</th>
<th>SD</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace experience</td>
<td>108</td>
<td>62.4</td>
<td>4.54</td>
<td>3.66</td>
<td>.086</td>
</tr>
<tr>
<td>Education</td>
<td>65</td>
<td>37.6</td>
<td>3.62</td>
<td>3.01</td>
<td>.032</td>
</tr>
</tbody>
</table>

Table 4 reveals that 108 (62.4%) of NOUN graduate nurses appeared to have acquired competencies that could be attributed to workplace experience, while 65 (37.6%) had acquired competencies that could be attributed to education received from NOUN.

**Proportion of NOUN graduate nurses that meets employer expectations**

To address the fourth research question relating to the proportion of NOUN graduate nurses that meets employer expectations, a quadrant analysis based on perception—competency dimension was performed in order to classify graduate participants in terms of whether they met employer expectation, exceeded expectation, fell below expectation or met no expectation at all. The quadrant analysis was established using a 2x2 matrix, with one dimension represented by graduate competency level and the other by employer perception. Rather than the mean score used in previous studies in plotting the 2x2 matrix, (see Lim et al., 2011), frequencies and percentages were used in the present study. First, graduate nurses' level of competency was grouped into two. Since the maximum and minimum rated competence score for each graduate nurse was 308 and 77, a score of 200 was considered the average level. Hence, any graduate nurse that scored an average of 200 and above was considered to have high competency while those that scored below 200 were considered having low competency. Similarly the same procedure was applied to the perception dimension. The maximum and minimum obtainable scores were 90 and 30 with an average score of 60. Thus any employer with a score of 60 and above was considered as having high perception about ODL graduates while those that scored below 60 were considered having low perception. Therefore, in the quadrant analysis, the overall score value for employer perception was plotted against the overall scores for graduates' competency. The interpretation for each of the four quadrants is as follows:

- If the score values fall in the upper left quadrant (low perception and high competency), the graduates competency level has exceeded expectation
If the score values fall in the lower left quadrant (low perception and low competency), the graduates competency level was considered to fall at zero level. If the score values fall in the lower right quadrant (high perception and low competency), the graduates competency level was considered to fall below expectation. If the score values fall in the upper right quadrant (high perception and high competency), graduates competency level has met/matched expectation.

From the analysis of data gathered and on the basis of the above interpretation, the following findings emerged as displayed in Figure 1.

![Figure 1: Quadrant analysis by competency and perception dimension](image)

As observed in Figure 1, the upper left quadrant had 12 graduate participants (5.4%) that exceeded employer expectation as the employers had expressed low perception about ODL as against graduate participants’ high-level competency. The lower left quadrant had 40 graduate participants (18%) who met no expectation, as the employers’ perception was low and graduate participants’ level of competency also low. Very few graduate participants 9 (4.1%) fell below expectation at the lower right quadrant following employers’ high perception and low level competency of graduate participants. A significant proportion of graduate participants (161) representing 72.5% lie at the upper right quadrant that met employer expectation, since employers’ high perception matches with graduates’ high level of competency.

From the data in Figure 1, it can be seen that a majority of sampled employer participants 170 (76.6%) seem to hold high perception regarding ODL as against 52 (23.4%) with low perception. Also, amongst graduate participants, 173 (77.9%) exhibited high level of competency as against 49 (22.1%) with low level competency. Judging from these data, it could be deduced that a significant proportion of NOUN graduates nurses met and exceeded employer expectation.

**Perception of NOUN graduate nurses on the quality of education provision in NOUN**

In answer to research question 5, the mean scores were computed and ranked and the results displayed in Table 5.

The analysis in Table 5 reveals that all of the variables analyzed met the cut-off point of 2.50 as the mean scores on each variable ranged from 2.79 to 3.16, indicating that the quality of
education provision in NOUN was high. The ranking of the mean scores shows that quality of course content received the highest rating, followed by level of interaction with fellow students and next quality of nursing degree programme. Level of practical learning activities in course modules ranked fourth. Availability of course materials, provision of facilitation, quality of clinical practicum experience, conduciveness of learning environment ranked fifth, sixth, seventh and eighth, in that order. Two items tied for ninth position - provision of clinical practicum exercise and quality of Infrastructural facilities.

Judging from the analysis, it would appear that the quality of education provision in NOUN with respect to B.Sc Nursing programme was highly rated by majority of sampled participants.

**Discussion of Findings**

The main purpose of this study was to determine how NOUN graduate nurses were performing in their various places of work to confirm or refute the notion that ODL graduates are ‘inferior’ to their counterparts from conventional universities.

The finding from this study indicates that contrary to general perception and skepticism against ODL graduates, a majority of sampled NOUN graduate nurses were found to possess high level of professional competency in all three competency dimensions measured as reflected in the results of their clinical performance, nursing documentation, and knowledge and understanding of nursing practice. Again, the result of this study showed that a significant proportion of employer participants held high perception regarding ODL graduates. This finding is contrary to expectation, as employers were often perceived as people who are unfavorably disposed to distance education.

Another major finding is the change in the attitude of graduates toward work during and after their studies in NOUN. The rating of the employers showed significant changes in graduates’ attitude to work as reflected in the reduced rate of absenteeism, lateness, number of complaints, number of
queries and warnings, number of work-related accidents, and use of mobile phone. The findings based on graduates’ assessment of themselves corroborated those of the employers. The findings showed that NOUN graduates demonstrated a positive attitude to work both before and after graduation.

Also, the finding of the study showed that a high proportion of NOUN graduate nurses 108 (62.4%) appeared to have acquired competencies that could be attributed to workplace experience while 65 (37.6%) had competencies that could be attributed to education received from NOUN. This finding came out in the expected direction as many of the sampled graduates had spent several years in service before their enrollment in NOUN. This means that the education they acquired coupled with years of experience spent on the job may have added to the high level of competencies experienced by the graduate nurses.

The study also revealed that the quality of education provision in NOUN with respect to B.Sc Nursing programme was highly rated by NOUN graduate nurses. The quality of course content topped the list of ten indicators that received highest rating while the provision of clinical practicum exercise as well as the quality of infrastructural facilities was rated the least. This finding supports that of Ofoha and Awe (2011), which found that NOUN course materials were highly rated and comparable in content to those offered in conventional system. However, attention needs to be directed at improving the platform for clinical practicum exercise and provision of other infrastructural facilities in NOUN aimed at exposing learners to more practical experience.

Limitations

Although care was taken to assure rigor of the study design, several limitations can be identified. The first limitation is in relation to the sample. This study was conducted using a single, purposive sample of selected graduate nurses who met study criteria. They are certainly not a true representation of all NOUN graduate nurses. The study is therefore limited in terms of generalization of the research finding. Another major limitation was the time frame. The time was very short to cover a study of this nature. For instance, the effort made at contacting all 1,751 graduate nurses on phone, compiling the list of selected ones based on study criteria, and tracking each one of them in their places of work was a time consuming exercise considering the allotted time frame for submission of the report. Another limitation has to do with our choice of nursing profession, which is outside our areas of specialization. Consequently, we had to research widely and studied the nursing literature in order to acquaint ourselves with basic knowledge of the nursing process. In spite of these limitations, our study makes an important contribution to research on a most vital issue of concern, which, to the best of our knowledge, has not been reported in the literature.

Conclusion

The purpose of education has been to equip graduates with the necessary skills and competencies needed for optimal performance in the world of work. This study has demonstrated that NOUN graduate nurses are equipped with such skills and competencies needed for the nursing profession. This study would help to refute the stereotyped negative view regarding the quality of ODL programme and graduates. Also, the information gained from this study could be used by NOUN and indeed other distance education stakeholders as a point of reference in curriculum development and reform in distance education.
Recommendations and Directions for Further Studies

This study has provided a useful insight on how NOUN educational process has impacted their graduate nurses, and as such the following recommendations are proffered:

1. This study represents a useful source of information for NOUN on the need to enhance the provision of clinical practicum exercise and improve infrastructural facilities important for the nursing programme in order to expose learners to more practical experience.
2. It is suggested that NOUN should consolidate on existing nursing programme to sustain the high level of competency that the graduate nurses sampled in this study have exhibited.
3. NOUN needs to conduct more tracer studies in other areas of professional fields and their findings utilized in the decision-making process of the institution. It would therefore be desirable to set up a tracer study unit in NOUN that would coordinate such tracer studies.
4. Direction for future research should include investigation of the level of professional competency of NOUN graduates in other professional fields.
5. Further research could be a comparison of professional competency of NOUN graduates with graduates of conventional universities in specific professional fields.
6. Although the results of this study cannot be generalized past the participants involved having used purposive sampling, future work could build on these results by using a larger and more representative sample that would ensure generalization of results across all graduate nurses.

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Experiences of Timorese language teachers in a blended Massive Open Online Course (MOOC) for Continuing Professional Development (CPD)

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Abstract
This paper details the experiences of a group of Timorese English language teachers from Lorosa’e English Language Institute (LELI) in Dili, Timor-Leste, who participated in a professional development MOOC entitled Teaching for Success: Lessons and Teaching between March and April 2017. Drawing on the pedagogical principles of blended learning; participants engaged with online course content, and once a week met as a study group to view some video content together and discuss issues arising from it. The authors draw on participant observation, individual and focus group interviews and post-course author reflections to outline the benefits and challenges of doing blended MOOCs in Dili, and propose that they can provide local English language teachers opportunities for subject area knowledge building, language literacy development and more general lifelong learning.

Key Words: Online learning; MOOC; global South; developing countries; Continuing Professional Development; teacher training; Timor-Leste

Introduction
This paper is part of a participatory action research project investigating the potential for Massive Open Online Courses (MOOCs) and Open Education Resources (OER) to provide low-cost, quality learning experiences for learners in Timor-Leste. MOOCs have been proposed as a ‘game changer’ for higher education in the global South (Warusavitarana, Dona, Piyathilake, Epitawela, & Edirisinghe, 2014). Critics point to the neo-colonial potential of MOOCs from the global North supplanting Southern higher education (Altbach, 2014; Godwin-Jones, 2014; Head, 2015) and the lack of contextualised content (Czerniewicz, Deacon, Small, & Walji, 2014; Nkuyubwatsi, 2014). Key barriers to uptake in countries of the global South include limited access to the internet and the requisite information and communication technologies (ICTs), as well as low participant literacies (Liyanagunawardena, Williams, & Adams, 2013). Despite these limitations, recent reports conclude that MOOCs can provide scalable opportunities for higher education in the global South (Laurillard & Kennedy, 2017), and help progress towards the United Nations Sustainable Development Goal (SDG) 4 - quality education (McGreal, 2017).

Research suggests that there are benefits to group learning within MOOCs (Bayeck, 2016), Facilitated MOOCs, known as ‘MOOC+’ (Liyanagunawardena & Williams, 2015), ‘MOOC camps’ (Maitland & Obeysekare, 2015) or ‘wrapped’ MOOCs (Jaffer, Govender, & Brown, 2017) can leverage the affordances of blending MOOC resources with face-to-face learning via co-located viewing of course content (Li et al., 2014), tutorial-style group discussions (Bulger, Bright & Cobo, 2015) and the
formation of local communities of practice (Firmansyah & Timmis, 2016). Maitland and Obeysekare (2015) argue that MOOC study groups allow participants to accumulate cultural and cultural capital in and through the facilitated MOOC experience.

MOOCs are a relatively new phenomenon in Timor-Leste and the lead author’s earlier research into online learning participation in Dili (King, 2016) identified isolated examples of individuals and small groups of ‘early adopters’ taking advantage of online learning resources, including MOOCs. Studies elsewhere suggest that MOOCs can contribute to professional learning (Laurillard, 2016; Milligan & Littlejohn, 2014), including in teacher professional development in the global South (Batchelor & Lautenbach, 2015; Fyle, 2013). A report into the applications of MOOCs for professional development in Colombia, the Philippines and South Africa found that these courses provided quality training opportunities, and recommended they be incorporated into existing government workforce development programs (Garrido et al., 2016). The authors also identified a dearth of research into the lived experience of MOOC participants from countries of the global South (see also Nti, 2015) and this paper aims to make a contribution to this field.

Context

Monty King (author 1) facilitated a British Council course on the FutureLearn MOOC platform entitled Teaching for Success: Lessons and Teaching (https://www.futurelearn.com/courses/english-language-teaching) for four weeks from March to April 2017, and seven Timorese language teachers at Lorosa’e English Language Institute (LELI) participated in the course. Participants accessed the resources— a combination of videos, articles, printable worksheets, short quizzes, surveys, and comments pages— for six weeks from the day they enrolled. LELI offered to subsidise the cost of a course ‘upgrade’, giving participants unlimited access to the course resources and a printed certificate. The course encouraged participants to reflect on their own teaching practice and adopt some of the strategies and approaches presented and modelled through the course in their teaching. Each Monday morning during the course the facilitator downloaded the approximately 10-15 weekly videos and copied them to a USB file, then to the LELI shared staff computer, allowing participants to watch content offline. Participants then worked through the course resources in their own time. The study group met for 1-2 hours each Thursday morning, watching 2-3 of that week’s videos, unpacking more difficult language, and discussing the application of these ideas in the Timorese language classroom.

Method

The research drew on the principles of Participatory Action Research (PAR) and used an ethnographic approach to data collection within a cycle of observation and informed reflection (Tacchi, Slater, & Hearn, 2003). Author 1 observed the teacher participants within weekly study groups and conducted individual interviews both before and after course completion in addition to a focus group interview at the completion of the course. The interviews were semi-structured and aimed at encouraging the social construction of knowledge among participants and researchers (Kvale & Brinkmann, 2009). In the pre-course interview, participants were asked about their education background, their use of the internet (particularly for educational purposes) and their future career ambitions. At the completion of the course they were interviewed again and asked about their impressions of the course and its utility. A focus group interview conducted upon completion of the course provided a forum for the participants to share their impressions and discuss the wider applications of MOOCs in Timor-Leste. The focus group interview was transcribed and analysed separately by the three authors, who then
met and compared codes, identifying the main benefits and challenges to emerge from the data, and applying them to the entire data set.

The interviews were conducted entirely in English, and the participants had a level of conversational English that allowed a discussion of their educational background, experiences of using ICTs and the internet, and their career ambitions, without major difficulty. The second author (Bernadete Luan), who also participated in the courses, has a postgraduate qualification from an Australian university and the third author (Esperança Lopes), also a participant, studied a liberal arts degree at an American university. Three other participants had studied English language education at the national university and another was in the process of writing his Education honours thesis, in English, to complete his studies. The final participant had completed her secondary education and had participated in informal English language training programs in her hometown outside Dili until she had become a trainer, a common story to emerge from interviews with Timorese language teachers. Though all the participants currently reside in Dili, they came from municipalities across the country drawn by opportunities to study and work in the capital and largest city.

Results

Five major benefits and four challenges around facilitating MOOCs for Continuing Professional Development (CPD) in Timor-Leste were identified in the data:

Benefit 1: Access to quality learning resources

There was general group consensus that the course resources were of excellent standard with valuable, relevant content and the short lecture videos in particular were well received. One participant commented “it was great because it [the video] contains a lot of new ideas… and I got a lot of ideas which empower my understanding about teaching.” The materials constructively aligned with weekly module objectives, and the logic of the course progression fostered productive discussions throughout the course.

An early activity required participants to reflect on how they plan their lessons, and provided downloadable lesson plan templates for teacher use. This combined with the discussions, both online through the course comments pages and the face-to-face study group meetings, gave the teachers an “…opportunity to go a little bit deeper about how to prepare lesson plan.” The resources were of a high quality, and the group were aware that the British Council is an industry leader in English language education through previous professional development training.

Benefit 2: Sharing and learning from others

The study group appreciated the opportunity to share reflections, opinions and insights from other group members, and other participants around the world. A number of teachers reported using the online comments pages as a resource to mine for teaching tips.

“We see teachers from different countries…post comments…you read some comments… it's learning from others…”

Another participant added:

“… I had a chance to talk to people from different countries, know about their experiences in teaching… sharing experiences.”
These shared personal teaching experiences nurtured a collegial atmosphere through the course. The participants often recognised something familiar in the reflections of teachers around the world and the challenges they face. This transferred to the group discussions, where participants were asked to identify their Personal Learning Networks (PLNs) and how they encourage reflective learning and professional development.

**Benefit 3: Encouraging reflective learning**

The *Teaching for Success* courses promote reflective practice, and learners are regularly asked to consider how they can utilise the strategies introduced through the course to improve their teaching. One focus group member summed up this benefit in noting:

“...[T]hey bring up a lot of issues that you are also thinking some teachers might have had that experience before... and then also we recognize what we are facing when we are teaching.”

Collective reflection was encouraged, which compounded the benefits of group learning, both online and face-to-face. Reflective learning was new to some participants, and they took to it willingly, despite early reservations about sharing reflections with more senior teachers. For many it was an opportunity to consolidate previous training, and dedicate some time to consider their future professional development pathways. In all the reflective component of the course challenged the participants to think more deeply about their teaching practice, which they responded to positively.

**Benefit 4: Motivating teachers to try new things and develop their teaching practice.**

While many of the ideas presented through the course were familiar to the teachers, all of the teachers reported trying new ideas from the course in the classroom. One participant explained:

“[W]ith the videos... when you watch... when you see teachers teaching you think, OK maybe I did this, changing with this one into this one.”

The teachers experimented with a number of the different ideas suggested through the course, including whiteboard management, use of flashcards and activities designed to engage students and keep the classroom student-centred. The course also introduced participants to the concept of the action research cycle and encouraged them to apply it in their work. Overall the course challenged teachers to break old, repetitive teaching habits and try new approaches, which the participants found particularly useful.

**Benefit 5: Improving participants' English**

Many of the teachers felt that the course was a good opportunity to develop their own English language skills. The *Teaching for Success* course page indicated that participants would need an English level of B2 on the Common European Framework of Reference for Languages (Council of Europe, 2001). The study group members all demonstrated English at or above this level, and appreciated the opportunity to practice their English, particularly the language related to teaching.

“... [I]t's also like a time for us to learn some new words that, like you don't know about and then somebody else mentions about it... so we can know more about teaching, know more about what they experience... I think it's also something like improving our English.”

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This benefit echoes the principles of content and language integrated learning (CLIL), whereby students learn a language of, for and through a subject area (Coyle, Hood, & Marsh, 2010). Research into MOOCs for CLIL is nascent (see for example de Waard & Demeulenaere 2016) but appears an interesting direction for further research.

**Challenge 1: Internet access**

While internet connectivity has improved significantly in Timor-Leste over the past five years, it remains intermittent at best. LELI has a relatively reliable connection, but periods of slow net speeds and power blackouts were common. The weekly videos were downloaded in an effort to reduce the disruption caused by this issue, but this process was often time-consuming. Participants expressed frustration but also demonstrated a stoic patience, knowing that this was unavoidable.

All of the participants had access to a smart phone and/or laptop, and some downloaded course materials to their personal devices to watch offline. One participant watched the lectures on her laptop offline, but contributed to the course discussions using her smart phone because it was more convenient. Another accessed almost all of the materials through his phone, while others preferred the larger screen and keyboard of a laptop. For some the idea of mobile learning seemed counterintuitive, while others took to it readily. A recent study of a MOOC on research writing for participants from the global South incorporated resources designed for low-bandwidth scenarios (Murugesan, Nobes, & Wild, 2017), which can help learners overcome these access barriers.

**Challenge 2: Time management**

A very busy schedule at LELI meant that most teachers missed at least one of the study group sessions, but were able to access the videos in their own time and keep up with the course.

"I would love to do it by myself and also with a group as well, it depends with the teachers who have time. At the moment we have, how do you say, very high teaching hours."

Across the five weeks of the course most teachers regularly taught over 30 hours a week, not including preparation and marking time. Participants often copied the lectures to their portable devices to take home over weekends, and the two extra weeks available at the end of the course to finish off various steps was invaluable. Until late February 2017 FutureLearn courses were open indefinitely for participants to complete once they had enrolled, and this new deadline presents a greater challenge for participants in areas with limited internet access. Further, the everyday time commitments of family, religious and ceremonial commitments, all restrict participants’ free time to complete the course. Time constraints have been cited as a factor mitigating course completion in other countries of the global South (Garrido et al., 2016).

**Challenge 3: Course design issues**

While participants appreciated the clear layout of the course, some experienced difficulties using some areas of the platform. For example, one focus group member found it difficult to follow fellow participants’ comments:

"...There are many people on the course put the comment there, and after it’s very hard for us to follow them again because we have to scroll all the comments..."
Another design issue identified was the perceived ease of course completion. There was a feeling that just by clicking the 'mark as complete' section on each course step you could gain a certificate while having learnt little:

"Anyone can participate in the course but then they can pay for a certificate even though they don’t learn a lot... it's just like you pay for it get certificate, put in your CV."

A focus group member suggested that more formative assessments would encourage participant engagement. Other MOOCs offer automatically marked quizzes, as a means of concept checking participant understanding, and the use of this kind of tool would compel participants to engage with course content and assess learner progress.

**Challenge 4: Limited certification payment methods and prohibitive cost**

FutureLearn offers certification and unlimited access to course materials for a fee, and the *Teaching for Success* course cost approximately USD $75. Credit card ownership is limited to a privileged few in Timor-Leste and the national bank has only made such facilities available to its customers from July 2017. One participant with a credit card from an Indonesian bank tried to pay for certification, but was unsuccessful:

"...I tried to upgrade my course, I wanted to pay but they won’t allow me to just because the bank that I’m using they don’t work with the merchant for FutureLearn. So it’s good that the FutureLearn they have many people that sign up for that from everywhere but maybe they can expand payment options."

LELI school offered to subsidise two thirds of the course certification fee so that participants paid USD $25 and the school met the balance. The school then made payment with a UK credit card and organised for the certificates to be posted to an address in the UK, then brought back to Timor-Leste. This was a time-consuming process, and without significant support from LELI school, certification would have been impossible. Of the seven participants, three opted to pay for certification. Two of those who decided not to pay explained that they were not able to because of financial constraints. One teacher felt uncomfortable asking the school to subsidise the cost and another, mentioned above, tried unsuccessfully to pay with their personal credit card.

**Conclusion**

The *Teaching for Success: Lessons and Teaching* course study group had at least three learning implications for participants. The first was the sharing of knowledge specific to the course subject area. The study groups allowed participants to clarify, discuss and apply ideas presented through the course and integrate them with previous professional development training. The course encouraged the teachers to take new ideas back to the language classroom in a cycle of planning, action and reflection, and stressed the importance of CPD to growing and improving as a teacher.

The course provided an opportunity to learn about the theory and practice of English language in English, using language specific to teaching theory. Participants often commented about being familiar with a particular idea without knowing the word for it in English. Applying the basic principles of CLIL in MOOC study groups encourages participants to learn the metalanguage around their profession, to help them engage with ideas which can inform and improve their teaching while improving their English language knowledge at the same time. This is not limited to teachers, nor to
English language speakers; Timorese learners can use MOOCs as a means to improve their skills in Portuguese, Bahasa Indonesia, Korean, Chinese and other languages relevant to Timorese learners now used in various MOOC platforms.

Another benefit was the introduction of online learning more generally and the range of quality online CPD resources available to teachers. Some participants reported enrolling in other FutureLearn courses in the weeks after the completion of the Teaching for Success course. Some enrolled together with colleagues while others began exploring other MOOCs individually. Teachers reported using a number of websites for lesson ideas before the course, but none had previously been aware of online CPD courses. What remains clear from researching the uptake of MOOCs and other online learning resources in Timor-Leste is that public awareness of what is available online is still very low, an issue not limited to this country (Nath & Karmakar, 2014).

These benefits can only be gained if participants are able to access a reliable internet connection, a precondition not often met in countries of the global South, including Timor-Leste. The blending of online course content with face to face interactions was beneficial as a means of scaffolding the online learning experience, however it did limit the flexibility that MOOCs provide. The other challenges mentioned in the results combine to restrict the effectiveness of MOOCs for CPD in Southern contexts and demand a particular form of learner resilience to successfully negotiate these barriers to learning. There is, on balance, an advantage to forming study groups to work around these limitations and gain the benefits of both on- and offline learning with peer support.

An issue not raised in the results but alluded to in the introduction is the Northern origins of the course and the attendant imbalance in knowledge production and dissemination. The LELI teachers appreciated Teaching for Success’ international perspective and felt it enriched the learning experience, yet MOOC producers are firmly moored in the global North and critics argue that MOOCs reproduce neo-colonial, hegemonic educational practices. To address this imbalance more Southern voices need to be heard, and higher education institutions in countries such as Timor-Leste need access to course production platforms. This would allow Southern academics to produce courses specific to their local contexts, using languages of instruction which enable more learners in these areas to benefit from open online learning.

The experiences of this study group suggest to us that MOOCs such as Teaching for Success have potential to offer valuable CPD opportunities to English speaking teachers in Timor-Leste, particularly when blended with face to face interaction in study groups. Participants enjoyed the ability to access quality resources and share ideas with teachers both within their Personal Learning Networks and online. They also saw the course as an opportunity to become more collaborative, reflective teachers, and to improve their English language skills. Among the issues facing Timorese learners, internet access remains a major barrier to greater engagement, which is compounded by time constraints for teachers who often work long hours. Design issues such as limited formative assessment also restricted learner engagement, in addition to the cost and methods of payment for certification.

The course ended with a quote for participants to consider: “Change is inevitable, growth is optional”. For English teachers, as in other professions, the role of technology in driving change cannot be ignored. The results of this project suggest that MOOCs can support CPD, and course study groups can add the benefits of face-to-face, collaborative learning. This is a major change in the way professional development is provided to language teachers in Timor-Leste, but it can provide valuable, potentially transformative educational opportunities to teachers and other professionals.
Disclosure

After the drafting of this article, Author 1 (Monty King) gained employment with FutureLearn, however no major changes have been made to the final paper.

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Dedicated to the memory of Jacinta Canossa Soares, our friend and colleague.

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Are Private Universities Exempt from Student Concerns About Textbook Costs? A Survey of Students at American University

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Abstract
A survey conducted in the fall of 2015 at American University in Washington, DC shows that rising textbook prices similarly affect students at an expensive private university as those at community colleges and state schools. Research on high textbook costs that has demonstrated corollary unwanted behavior changes in students, including not purchasing the book, resorting to illegal online downloads, and poor study habits, were confirmed at American University as well. Solutions that have been proposed to this problem of prohibitive textbook prices, including Open Educational Resources (OER), could have an equally profound impact at American University, and potentially similar private universities, as has been demonstrated at less selective and more affordable counterparts.

Key Words: Textbooks; cost; higher education; OER; open educational resources

Introduction
Textbooks are typically an important part of the post-secondary instructional model (Altbach, Kelly, Petrie & Weis, 1991; Fischer, Hilton III, Robinson & Wiley, 2015), and traditional print textbooks have long been regarded as a foundational instrument for knowledge transfer (Lowe, 2009; Williams, 2014). At the same time, textbooks may also be “developing into a systematic barrier to student learning” (Stein, Hart, Keaney & White, 2017, p. 404). A significant factor is that textbooks can be prohibitively expensive. One study across multiple general education courses at seven different community and state colleges found that the average textbook price was $90.61 (Hilton III, Robinson, Wiley & Ackerman, 2014). In fact, from 1977 to 2015, textbook prices rose by 1,041% — over three times the rate of inflation and faster than any other consumer product (Bureau of Labor Statistics, 2014).

Students have responded to high textbook prices in many ways, most notably by not purchasing required textbooks. In fact, in one of the largest (n=22,906) surveys of students about their textbook habits conducted by the Florida Virtual Campus (2016), 66.6% of students surveyed had not purchased a textbook because of cost. A separate study of 2,039 students found that nearly all students (94%) who skipped buying or renting some of their required textbooks due to cost did so while simultaneously recognizing that doing so would negatively impact their academic performance in that course (Senack, 2014).

The Florida Virtual Campus survey, which was previously conducted in 2010 and 2012, is widely referenced in research about the effects of textbooks on students and in studies of open educational resources (OER), the tool most often cited as a solution to skyrocketing textbook prices. Unfortunately, because it is only offered to students enrolled in Florida’s public colleges and universities, it may...
not reveal the full picture of how students enrolled in private colleges and universities behave with respect to textbook costs. This is a critical oversight of approximately 4 million students enrolled in private non-profit colleges in 2015, or approximately 20% of students enrolled in higher education (NCES, 2016).

The purpose of this paper is to present survey data demonstrating the effects of textbook costs on students at American University, a mid-sized, private, research university in Washington, D.C. The survey asked students questions related to textbook costs and the effects of those costs on their behaviors. In addition to filling a gap in the literature, this study explores a key question as to whether the results of previous OER research could apply to private schools. On some campuses, “that’s not a problem here” is cited as a reason not to prioritize lowering textbook costs. After all, what's $90 a book compared to an annual tuition bill of $45,808 (American University, 2018)?

Methodology and Context

During the fall 2015 semester, students in 13 courses at American University participated in a survey about how textbook costs affect them. The surveyed courses were selected across undergraduate levels (100 - 400-level courses), schools and colleges, and disciplines. All of the courses included in the survey were traditional face-to-face courses. A majority of the courses selected had a single required or recommended textbook. Students were asked questions about both their general habits as well as their use of the particular textbook assigned in their course. The full survey, influenced by research from Bliss, Hilton, Wiley and Thanos (2013), Florida Virtual Campus (2016), the Open Education Group (2018), and the Student PIRGs (2014), can be found in the appendix. The list price of the textbooks for the courses surveyed ranged between $40 and $325, with a majority of the textbooks priced at $100 or more. Students who completed the survey were invited to enter a drawing for one of two $25 gift cards to incentivize survey completions. Method of survey capture was contingent upon professor preference for distribution, and students completed surveys via paper copies handed out in-person or via an online survey administered through email and the university’s learning management system. Three hundred and sixty-five students were invited to participate, and 110 students responded, yielding a 30% response rate. The respondents were approximately evenly distributed across undergraduate years, but the survey was not controlled to be representative of the undergraduate student population at American. This survey was developed and administered to get a better sense of the pervasiveness of the textbook cost concerns, and understand the various ways students were adapting to costs.

American University is a private, mid-sized, research II institution in Washington, D.C. Its undergraduate enrollment is approximately 8,000 and the cost of attendance in the 2015-16 Academic Year was $59,438. Concomitant to the survey collection, students at American University had been informally reporting to administrators and professors that textbook costs were overwhelming their budgets and some students simply couldn’t afford to purchase the required texts. This reporting coincides with changes to the institution’s system for awarding financial aid. Over approximately the previous decade, admissions reports that financial awarding had shifted from about 70% based on merit to about 70% based on need. This shift did not change the academic profile of matriculating students, but it did shift the economic profile of those students. As the student population changed, attention to non-tuition, ancillary costs increased. As part of the response to growing student concerns about textbook costs, American began a pilot program to support faculty use of OER in 2015, which continues to expand today. The survey was developed to assess the impact of textbook costs on student academic behaviors and to inform the OER pilot program. Accordingly, the questions in the survey are focused on student textbook expenditures and behaviors, not OER specifically.
Significant Findings

The analysis below focuses on three key areas of findings related to student perceptions of textbook costs and value, student access to textbooks, and student behaviors related to cost. The present survey employs descriptive statistics to draw a rough sketch of the myriad ways textbook costs affect students at American University. As discussed throughout, key findings from the present study track to findings of prior research elsewhere. Results from this survey are consistent with the current research on textbook prices and student behavior: high textbook costs cause unwanted behavior changes in students, including not purchasing the book, resorting to illegal online downloads, and poor study habits.

Textbook Costs and Student Perceptions of Textbook Value

Students were asked several questions related to specific textbook costs. 80% (n=88) of students indicated that 2–4 courses required expensive textbooks during the surveyed semester, with 3 courses being the most common response at 35% (n=38). Expensive textbooks were defined as those costing $75 or more. Less than 10% (n=10) of students reported only needing to buy no more than 1 textbook costing $75 or greater (see Figure 1).

As shown in Figure 2, students were also asked to estimate the total dollar amount spent to acquire all their course materials for the Fall 2015 semester. “Course materials” was defined as textbooks,
access codes, required subscriptions, etc. 29% (n=30) of the students reported spending $201–$300 to obtain their course materials, while the weighted mean price for total course material expenditure was $288.50. This translates to $577 over a typical academic year. These findings accord with expenditure data found in prior studies (Hill, 2015a, 2015b; Florida Virtual Campus, 2016).

Students were asked to indicate the frequency of performing a variety of study-related tasks in their course-assigned textbook. As seen in Figure 3, the most commonly selected action was skimming or searching for information.

Students were also asked to estimate the amount of time they dedicated to studying from particular types of course materials when preparing for exams. Students rated the textbook as their least preferred method of study behind their own class notes and information their professor provided such as slides or lecture notes (Figure 4).

![Figure 3: When studying from [Assigned Textbook], how often do you do each of the following?](image)

![Figure 4: In general, when you prepare for your tests/exams, what percent of studying do you devote to each of the following?](image)
Nineteen percent of comments to a general open-ended question (“What else would you like to share about how the cost of course materials influences your learning habits?”) related to the ways faculty used – or rather didn’t use – their assigned textbooks. For example:

- “Professor either don’t test/rarely test textbook material; if they do, they will only test information discussed in class.”
- “Prohibitive and unnecessary (some courses require expensive textbooks you use infrequently)”

Figure 7 uses tagging to demonstrate the themes of all responses to this question.

**Student Access to Textbooks**

Students were asked if they had ever decided to not acquire a required textbook or course material because of its high cost, to which 67% (n=70) of the students said yes. This figure is similar to the findings of other studies (Florida Virtual Campus, 2016; Senack, 2014).

Analyzing responses by academic year (Figure 5), only 32% of freshmen reported that they decided not to purchase a required textbook/course material because of the cost, while 75% of sophomores, juniors, and seniors report doing so.

Responses to the general open-ended question also indicate that students have learned over time to avoid purchasing some textbooks. For example:

- “I think it’s stupid to buy textbooks. Too expensive! Never buy them anymore!”
- “I honestly don’t end up using most of my textbooks. I’ve reached a point where I buy books later into the semester, and only those I’ve seen used.”
- “They are RIDICULOUSLY expensive and professors often require them when they aren’t necessary”
- “Class says required and most of the time it’s not”

Free responses also indicated the library course reserves were used, with 10% of commenters adding details about using course reserves. Despite rating the library as a relatively frequently used
source for accessing required course materials (Figure 6), free responses indicate that relying on course reserves was not an ideal learning scenario.

- “I depend on the course reserves more than I’d like to! Sometimes they are already withdrawn.”
- “I have to spend a large amount of time making sure that my textbooks are cheap. I also have to go to the library whenever I want to do work for my microeconomics class since I could not afford the textbook.”
- “The price of textbooks, even renting used textbooks, is a tremendous burden. I have discovered that I can find most of the book I need through the Washington Research Library Consortium for free. But when books are not available through these means, I will share with classmates or never access those books at all.

In addition to the limitations of relying on access through the library course reserves system, students identified additional negative effects from limited access to course materials. In fact, 12% of text comments drew a link between cost of text and negative learning effects. For example, students explained:

- “When studying, I find highlighting the text is incredibly beneficial. Unfortunately, with the prices of textbooks I tend to rent rather than buy, as it is more cost effective. With rented textbooks I am not able to highlight.”
- “Some textbooks are really expensive and I will decide not to buy the hard copy. But digital copy makes it harder to focus since it’s on a digital device”
- “[N]ot buying the book because it is too expensive leaves me to use course reserves but that limits my access to the information to allow me to succeed in class.”

Although most responses indicated that students had some level of access to the materials they needed, a small number of respondents indicated use of illegal online downloads in various places throughout the survey. Filtered to remove multiple mentions by a single respondent, 4 individual respondents, or 3.6%, indicated some level of use of illegal downloads.
Student Consequences Related to Cost

Over 52% (n=58) of respondents provided answers to the open-ended question “What else would you like to share about how the cost of course materials influences your learning habits?” Beyond the themes of high costs, low perceived value, and reduction in access reported above, text responses indicated additional consequences of textbook costs.

Similar to the learned behavior of not purchasing a textbook at all, respondents indicated that they comparison shopped, spending time and effort trying to find the least expensive method of accessing course materials.

- “Prices do matter when I make my decision of whether or not to get an item for a class, unless it is absolutely required (i.e. an access code for an online portal). I would rather put in more of my time to find cheaper or free versions of textbooks or course material instead of spending the money.”
- “It is often too expensive to buy textbooks so I often either don’t buy them or try to rent/buy cheaper option like older versions.”

In addition to the problems caused by not having the textbook at all, students mentioned other, subtler, negative learning effects from high textbook costs. These comments focus on the difference in prices between purchased and rented texts as well as between physical or digital versions. Often rented and digital texts are the lowest cost available versions.

- “When studying, I find highlighting the text is incredibly beneficial. Unfortunately, with the prices of textbooks I tend to rent rather than buy, as it is more cost effective. With rented textbooks I am not able to highlight.”
- “Some textbooks are really expensive and I will decide not to buy the hard copy. But digital copy makes it harder to focus since it’s on a digital device”

Figure 7: What else would you like to share about how the cost of course materials influences your learning habits?
Students' free responses also indicated that the high cost of textbooks was a stressor.

- “While I have never not bought a book that I needed and couldn’t find elsewhere, the cost of textbooks causes significant financial stress on me and takes away from other semester needs (food, rent, etc.)”
- “[M]ore money [per textbook means] more stress to do well because you spent so much for one class”

Similarly, Ikahihifo, Spring, Rosecrans and Watson (2017) observed stress levels related to costs and noted opposite reactions from students enrolled in courses that used free OER in lieu of cost-bearing commercial resources.

In free responses, students reported that textbook costs impact their course registration practices. For example:

- “I don’t take a certain class because of the expensive or multiple textbooks. It’s really ridiculous.”
- “I know people who have dropped out of classes because the book was too expensive”

These responses reflect prior research findings. For example, Senack (2016) found that textbook prices affected course enrollment decisions of close to 50% of students surveyed (n=4,704). Similarly, the Florida Virtual Campus (2016) found that nearly 50% of respondents (n=20,557) had avoided registering for a course because of textbook costs.¹

Discussion

The results of the present survey suggest that surveyed students at American University have comparable experiences with regard to textbook cost and access to those of students at public 4- and 2-year institutions, which have been the focus of much research and outreach related to OER and low-cost textbook programs. These findings suggest that despite their many differences, experiences related to textbook costs may be comparable across institution type. Although American is a private research institution where the cost of attendance for the 2015-16 academic year was $59,438, when faced with expensive textbooks, students adopted many of the same coping mechanisms as students at community colleges and other lower-cost institutions. These mechanisms included not purchasing all required texts, relying instead on course reserves, illegal downloads, or never referencing the text at all. Additionally, the present study suggests that the academic value of textbooks may be misaligned to the high price of textbooks, and that students experience negative learning effects stemming from those high prices.

Cost/Value Reinforcement Cycle

In particular, responses related to textbook costs and their perceived value indicate that prices may be misaligned to students’ perceptions of textbooks’ academic value. Respondents indicated that they spent approximately $288.50 on textbooks for one semester. Extrapolating out, this averages to $577 a year, less than half the College Board’s estimate of roughly $1,200 spent by students on course materials a year (2017). However, Hill (2015a, 2015b) produces a more realistic estimate

¹Notably, the opposite has also shown to be true. Ikahihifo et al. (2017) found that students enrolled in courses employing free OER instead of cost-bearing materials chose to reinvest their savings in other academic purchases including enrolling in and paying for additional courses.
of $600 for actual expenditures on textbooks, which is in line with the present study’s findings. Text responses indicate that students find textbook prices too high, and more than half (67%; n=70) of the respondents in this survey indicated that they had foregone a required textbook because of cost.

Not only are prices high, but responses indicate a relatively low perception of the academic value of textbooks. Students indicated a low preference for studying from textbooks when preparing for exams, ranking textbooks as the least frequently used study resource. In fact, most respondents (75%) reported spending only between 0 and 2 hours per week studying from their course-assigned textbook. They also indicated that their primary action in textbooks was skimming for specific information. This may mean that students tend to use the textbook as a reference on-demand, rather than as a primary source of course content for learning. Additionally, in free responses students indicated that their professors don’t incorporate required texts in meaningful ways. Taken in concert, these findings indicate that students’ experience of textbooks in practice doesn’t align with their monetary value. Instead, students find textbooks of limited academic utility in their independent work, and this perception is reinforced by faculty who don’t use the books. If students think textbooks are too expensive, aren’t incorporated into courses meaningful ways, and are used infrequently for studying, it’s no wonder that they sometimes opt not to purchase required texts.

Adding in data suggesting that students may learn to forego textbooks over the course of their academic careers further bolsters this analysis. While only 32% of first year students reported not purchasing a textbook because of cost, a staggering 75% of sophomores, juniors, and seniors report doing so. This suggests that there is a difference between the way first year students value textbooks and the way their more senior peers do. Indeed, according to a 2014 National Association of College Stores (NCAS) report, first year students spent nearly twice as much as upperclassmen (qtd. in Hill 2015a). It’s possible that through their experience of textbooks during their first year, students learn that the practical academic value of textbooks doesn’t align with their high costs. They could learn this by observing their own study habits, the practices of students around them (particularly when taking courses with a mix of first year and upper-class students), and the way their professors appear to value required texts. This observation that students may learn not to buy required texts over time has been noted in other research as well (Stein et al., 2017).

**Cost, Access, and Negative Effects on Learning**

We may reasonably assume that students who forego expensive required texts must still learn material covered in those required texts and thus require some level of access. The 67% of students who indicated that they had not purchased a required text due to cost were asked a follow up question about how they accessed that required material. Students rated the library as their most common source. This indicates high importance of the library and of the course reserves process. American has a textbook-focused course reserves program, placing at least one copy of every required general education textbook and textbook over $125 on course reserves. However, despite the relative importance of the library as a source for course materials, it is not without problems. As free responses indicate, the number of texts on reserve is limited, and students may find that the text they need is already in use. Additionally, course reserves are necessarily more convenient for students who live on campus, as those who do not may need to travel to campus specifically to complete their homework or other studying, adding time and likely additional transportation costs to studying.

In addition to using course reserves, students indicated their second most frequent method of accessing material in textbooks they had not purchased was copying the sections they needed from somewhere else. It’s important to note that this behavior likely constitutes a copyright violation. Similarly, a small number of respondents indicated relying on illegal downloads for their textbooks.
Notably, 2014 data from the National Association of College Stores shows that students at 4-year institutions report using illegal downloads far more frequently than their counterparts at 2-year institutions (qtd. in Hill 2015a). That students turn to illicit mechanisms to acquire expensive required course material is cause for concern.

**Conclusion and Future Research**

Although a number of studies that look at how students deal with the rising cost of textbooks have been conducted, a unique purpose of this study was to explore whether the predominant findings held up at a much more expensive private university – a setting with student demographics not often associated with issues like affordability and access as much as their community college counterparts. As this survey data shows, however, assumptions about students’ ability or willingness to purchase expensive textbooks may be unfounded, and students at American could benefit from increased efforts to mitigate textbook costs. Although students at AU incur significantly higher tuition costs, they similarly face negative consequences related to the high cost of textbooks.

From prior research, we know that students often choose to forgo purchasing required textbooks and other course materials; we know this decision is linked to cost; and we know that students are also aware this decision may lead to lower grades. What we now also know is this: 67.31% – almost exactly the same two-thirds number reported by Senack (2014) and Florida Virtual Campus (2016) – of surveyed American University students have also chosen not to acquire required textbooks or other course materials because of prohibitive costs.

Escalating textbook costs in higher education negatively impact students’ academic success, especially students who are most financially vulnerable. However, a problem occurs when we instinctively associate “financially vulnerable” with only Pell-eligible students, or only community colleges and access-oriented universities. That students at American University struggle to cope with rapidly rising textbook costs illustrates a key point: regardless of financial status, two-thirds of students aren’t buying textbooks due to concerns over, not just financial value, but academic value as well. As has been demonstrated, campus-wide initiatives to adopt OER can minimize the negative effects of prohibitive textbook costs without negatively affecting academic performance (Hilton, 2016).

Although our survey findings cannot be generalized to represent the experiences of students across American University, the results nevertheless track to findings from other comparable studies and suggest fruitful areas for additional research:

- Has inability or refusal to purchase textbooks by AU students also led to an inability to enroll in courses they need as part of their degree program? Has time to degree completion been affected? Or even something more benign like student satisfaction in degree program as a result of taking non-ideal courses due to textbook cost?
- Are the present findings comparable to student behaviors at other private universities elsewhere in the country?
- Much like the oversight of students enrolled in private non-profit colleges with relation to textbook affordability studies, a similar problem exists in the body of research done on open educational resources. The COUP (Cost, Outcomes, Usage, Perceptions) framework developed by the Open Education Group (2018) is a common lens through which OER research can be seen. Across all areas of the framework, community colleges have largely been the focus (e.g. Bliss et al., 2013; Hilton & Laman, 2012; Hilton, Gaudet, Clark, Robinson & Wiley, 2013; Hilton et al., 2014; Ikahihifo et al., 2017; Rowell, 2015; Wiley, Williams, DeMarte & Hilton, 2016). What findings may emerge from applying the COUP framework to analyzing student behaviors at private non-profit colleges?
The problems created by costly textbooks—most notably unwanted changes in student behavior—are significant drivers of interest in OER. "When the value of purchasing textbooks is brought into question by students, leading them to engage in alternative resource-seeking behaviours... teachers should be concerned," write Stein et al. (2017, p. 415): "Lecturers who select appropriate, accessible and affordable textbooks for their courses may play a key role in facilitating positive academic outcomes for students and reducing the likelihood of students accessing inappropriate or inadequate alternative resources."

This paper serves as one piece of evidence to suggest teachers and learners as American University are not immune to the crippling effects of high textbook costs that students around the world are facing.

References
Hilton III, J. L., Robinson, T. J., Wiley, D., & Ackerman, J. D. (2014). Cost-savings achieved in two semesters through the adoption of open educational resources. The International Review of Research in Open and Distributed Learning, 15(2). http://dx.doi.org/10.19173/irrodl.v15i2.1700


**Appendix: Survey**

**Q1** What academic year are you?
- Freshman
- Sophomore
- Junior
- Senior

**Q2** What is your GPA?

**Q3** How many of your courses required expensive ($75 or more) textbooks this semester?
- 0
- 1
- 2
- 3
- 4
- 5
- More than 5

**Q4** How do you pay for your education? (Select all that apply)
- Student loan(s)
- Scholarship(s)/Grant(s)
- Other (please specify)
- None of the above

**Q5** Do you have paid employment this semester?
- Yes
- No

*Conditional response: If “Yes” to Q5, then Q6. If “No” to Q5, then bypass Q6 and go to Q7*

**Q6** How many hours per week do you work on average?
- 1–11 hours/week
- 11–20 hours/week
- More than 20 hours/week
Q7 Approximately how much money did you spend to acquire all of your course materials this semester? (Include cost for textbooks, access codes, required subscriptions, etc. in your estimate.)
- $0–$100
- $101–$200
- $201–$300
- $301–$400
- $401–$500
- More than $500

Q8 Have you ever decided not to acquire a required textbook or other course material because it was too expensive?
- Yes
- No

Q9 Where do you generally acquire your course materials?
*Likert scale of “Never, Rarely, Sometimes, Often, Very Often” for each option below*
- AU physical campus store
- AU online campus store
- Off-campus physical store (e.g. Barnes & Noble)
- Off-campus website (e.g. amazon.com)
- From a friend or classmate
- Other (please specify)

Q10 What kind of course materials do you generally acquire?
*Likert scale of “Never, Rarely, Sometimes, Often, Very Often” for each option below*
- I rent print textbooks
- I rent digital textbooks (e.g. E-textbooks)
- I purchase new print textbooks
- I purchase used print textbooks
- I purchase digital textbooks (e.g. E-textbooks)
- Other (please specify)

[Conditional response: If Yes to Q8, then Q11. If No to Q8, then bypass Q11 and go to Q12]

Q11 If you do not purchase or rent a required textbook or other course material, how do you procure the required material?
*Likert scale of “Never, Rarely, Sometimes, Often, Very Often” for each option below*
- I share with a friend/classmate
- I use a copy in the library
- I copy the sections I need from somewhere else
- I use different study materials
- I just don’t use that material
- Other (please specify)

Q12 In general, when you prepare for your tests/exams, what percent of studying do you devote to each of the following? (Your responses should add up to 100).
- My own class notes
- Information provided by my professor such as powerpoints or lecture notes
- Assigned readings from a textbook or posted to Blackboard
- Homework or practice problems
- Other (please specify)
Q13 At the end of the semester, what do you generally do with your textbooks? (Select all that apply)
• I keep most or all of my textbooks
• I try to resell textbooks for courses that are not in my major
• I try to resell the most expensive textbooks
• I try to resell the textbooks I do not think I will use again
• I try to resell all of my textbooks
• Other (please specify)

Q14 What else would you like to share about how the cost of course materials influences your learning habits?

The next 5 questions ask about your habits using the textbook [ASSIGNED TEXTBOOK] for your course [SURVEYED COURSE].

Q15 What version of [ASSIGNED TEXTBOOK] do you use?
• Purchased new print copy
• Purchased used print copy
• Purchased digital copy
• Rented print copy
• Rented digital copy
• I do not have a copy of [ASSIGNED TEXTBOOK]
• Other (Please specify):

[Conditional response: If any “print” option was selected in Q15, then Q16. If no “print” option was selected in Q15, then bypass Q16 and go to Q17 or Q18]

Q16 What factors affected your decision to use a print version of [ASSIGNED TEXTBOOK]? (Select all that apply.)
• Cost
• Convenience
• I learn best reading print
• This was the available option when I was making my decision
• Other (please specify)

[Conditional response: If any “digital” option was selected in Q15, then Q17. If no “digital” option was selected in Q15, then bypass Q17 and go to Q18]

Q17 What factors affected your decision to use a digital version of [ASSIGNED TEXTBOOK]? (Select all that apply.)
• Cost
• Convenience
• I learn best reading digitally
• This was the available option when I was making my decision
• Other (please specify)

[Conditional response: If “I do not have a copy” was selected in Q15, then Q18. If “Other” was selected in Q15, then bypass Q18 and go to Q19]

Q18 What factors affected your decision not to acquire a copy of [ASSIGNED TEXTBOOK]? (Select all that apply.)
• Cost
• I do not learn well from textbooks
• Textbook not in stock
• Other (please specify)
Q19 When did you acquire [ASSIGNED TEXTBOOK]?
- 2–4 weeks after the class started
- Less than 2 weeks after the class started
- Less than 2 weeks before the class started
- 2–4 weeks before the class started
- More than a month before the class started
- I do not have a copy

[Conditional response: If any “print” option was selected in Q15, then Q20. If no “print” option was selected in Q15, then bypass Q20 and go to Q21]

Q20 When studying from [ASSIGNED TEXTBOOK], how often do you do each of the following?
*Likert scale of “Never, Rarely, Sometimes, Often, Very Often” for each option below*
- Skim to find specific information
- Highlight/Underline
- Make notes in the margins
- Make notes separate from the book itself
- Look at textbook-suggested online material
- Other (please specify)

[Conditional response: If any “digital” option was selected in Q15, then Q21. If no “digital” option was selected in Q15, then bypass Q21 and go to Q22]

Q21 When studying from [ASSIGNED TEXTBOOK], how often do you do each of the following?
*Likert scale of “Never, Rarely, Sometimes, Often, Very Often” for each option below*
- Search to find specific information
- Use digital software to underline/highlight information
- Use digital software to make notes in the margins
- Make notes separate from the book itself
- Click on textbook-suggested links
- Other (please specify)

Q22 About how many hours per week do you spend reading or studying from [ASSIGNED TEXTBOOK]?
- 0 hours/week
- 1–2 hours/week
- 3–4 hours/week
- 5–6 hours/week
- 7–8 hours/week
- 8–9 hours/week
- over 9 hours/week

Q23 What is your current grade in this course?
- A
- B
- C
- D
- F
- Unknown

Thank you for completing this survey. To be entered into a drawing for a $25 Starbucks gift card, please provide your email address below. Note, your email address will not be included as survey data and will only be used for gift card distribution.

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This book is full of examples of how teachers can integrate technology into their classroom and should inspire the most tentative teachers to try something new. As with any book centered on emerging technologies, the content runs the risk of becoming outdated quickly, but the author acknowledges this in the introduction and continues to build on central tenants as evidenced in a second edition placing emphasis on smartphone and social media usage. The author openly shares her journey, not as a gold standard, but rather a shining example of how one thing can lead to another. Challenging the norm, thinking outside the box, and trying to meet a growing, diverse population rich with varied technological backgrounds and perspectives where students are is the hallmark of good teaching. One may be inclined to assume this book will detail the "what" and the "how" of integrating technology into the classroom, given the title. While there are plenty of use cases, guides, and starting points in this book, perhaps one of the greatest strengths is the author’s commitment to “why” technology should be integrated into the classroom.

Every administrator, faculty member, and instructional designer should read this book. Administrators naturally tend to inherit more administrative responsibilities over time; as such, we slowly start to move away from our why. In other words, the gap between students and administrators unavoidably grows due to the nature of daily tasks. This book can teleport readers back to a time when they first started teaching and remind us of our commitment to student success, trial and error, and may serve as a catalyst toward administrative support of faculty development and technology adoption in every type of classroom. The pedagogical playground has grown to be more dynamic given the technological landscape, and

“If professors are encouraged, inspired, and incentivized to teach with emerging technologies, the playing field will shift, and college will play a formative role in mastering necessary 21st-century skills and encouraging students to develop a credible digital footprint…” (p. 76).

Faculty often are unknowingly adopting technology to solve a problem, try something new, and/or intersect with students more efficiently and effectively. Oftentimes, the use of technology in a classroom is not necessarily accidental but not completely purposeful as certain tools and integrations
have become commonplace over time i.e. MS Office. Faculty sentiments of unknowingly adopting technology are echoed in the definitional realization of recent surges in the open educational resources (OER) movement i.e. “Oh that's what OER is… I've been doing that for years”. While designing with the end result in mind may not always be at the forefront of the faculty mindset, this book includes real life examples of educators and their technology rabbit holes. Faculty who read this book may start to get lost in former woes having once tried to use a tool presented, but the examples (not all success stories) remind of us of the terminal need to shake things up, change with the time, and remain innovative. The process of taking a technology leap will place greater emphasis on the need for instructional designers, give faculty perspective on an instructional designers role in the process, and help manage expectations between faculty and instructional designers.

Instructional designers, regardless of where they work, can apply the principles presented in this book to practice. Instructional designers are often sought-out as technology gurus or whiz kids, but the author's story can reinvigorate the most hardened instructional designers (who feel like nothing more than tier-one tech support) to challenge their role as a critical piece of a technologically complicated learning landscape. Similarly, instructional designers often serve as a first stop or gateway for faculty to move from the traditional classroom to the online or hybrid classroom as the facilitators of various “teaching with technology” workshops. Using this book as background reading or parsing out the various chapters into modules within such workshops could ultimately bridge the gap in a scaffolded way. Imagine an institution requiring faculty to complete a course focused on online teaching prior to teaching online. In such a situation, facilitators could easily adapt the chapter titles as learning modules and situationally contextualize the content at their institution. These workshops should dive further into the pedagogy of online teaching and focus less on the nuts and bolts of any given tech tool, and while grasping the technology is important, this is usually better served through a personal experience or journey. In this regard, this book serves dual purposes as an example for faculty and a guide for instructional designers. In the process, this read will reassure faculty that taking a chance with technology is quintessential to the teaching and learning process as things can and will go wrong and instructional designers are there to help.

While many of the emerging technologies presented in this book would hardly be considered new today, the author’s perspectives challenge the reader to think of these tools in new ways. Readers may find themselves immediately wanting to rethink their syllabi, give podcasting a go, send their first tweet, design an immersive mobile learning experience, or try threading voices seamlessly over course content. all of which emphasizes the need for classrooms rich with technology, especially blended and online learning environments. In short, we need to innovate to remain current. This book has the potential to push the laggards and the late majority into at a minimum, the early majority, but the moment a reader uses an idea presented in this read in their own situational context, brace yourself, and welcome to the world of an early adopter.