Perception of Facilitators on The Use of Blended Learning Techniques in National Open University of Nigeria

Oparaduru John Onyemauche

Department of Educational Foundations,

Faculty of Education,

National Open University of Nigeria, Jabi-Abuja

Email: ooparaduru@noun.edu.ng

Abstract

Before the outbreak of COVID-19 pandemic, facilitators faced series of criticisms especially among their counterparts in the conventional universities in Nigeria. COVID-19 pandemic however, brought a change in perception of facilitators in the delivery mode of education to a wider range of people at a minimal cost. As a result of poor perception of people concerning Open Distance Learning (ODL), this study examined perceptions of facilitators on Blended Learning Techniques (BLT). The purpose of the study was to identify, examine and analyse the perceptions of facilitators on Blended Learning Techniques in National Open University of Nigeria. The population for the study was one hundred and fifty (150) facilitators. The sample for the study comprised 80 facilitators randomly selected using simple random technique. Two sub-scale questionnaires were used for data collection using online survey. The data were analysed using percentage, frequency table and simple statistical mean to find the average responses for the study. The results showed that the mean fell below 2.50 and as such were rejected. In addition, the results showed that facilitators had positive opinions about Blended Learning Techniques which have been incorporated in ODL system right from its inception. However, it was observed that there are challenges in the implementation of the system. Thus, it was recommended among others that, different models of blended learning techniques should be adopted to discharge very efficient ODL services to the learners. In addition, it was recommended that facilitators should be well-motivated and provided with stable power supply as well as Internet access in discharging their duties.

Keywords: *Facilitators, Conventional universities, Blended Learning Techniques, Internet Access and Open Distance Learning.*

Introduction

In the continuous search for effective means of delivering quality education to the larger population of Nigerians, open distance learning has been adopted and blended learning has also been incorporated in the mode of its delivery. There have been steady efforts on the part of course developers as well as curriculum developers and teachers including the Management Information System (MIS) and Learning Content Management System. all working to achieve better progress in ODL delivery services in National Open University of Nigeria (NOUN). Due to the outbreak of COVID-19 worldwide, the educational system at present is in transition stage from the usual face-to-face learning approach as could be found in the conventional universities to blended learning techniques. This swift change has become necessary due to the need to meet up with the challenges of providing quality education to students since education has been negatively affected since the outbreak of COVID-19. New technologies and techniques have been adopted in an attempt to reach the larger population of the country who are in search of quality education. It must however be noted that due to various factors such as deficient budgets, lack of essential amenities, advantages of face-to- face learning approach, etc., Nigeria's educational system cannot be said to be completely ready to leave the traditional method of teaching and learning which is face-to-face. The researcher however noted that to understand the psychological repercussions of a pandemic, the fear and anxiety of being infected must be considered and observed. This therefore calls for the need to adopt a rapid change in Nigeria's educational system especially among the conventional universities.

The traditional model of teaching and learning in spite of its wider recognition demands urgent move to the new model of learning in order to cope with potential future outbreaks of diseases and viruses. It has been observed that Open Distance Learning has helped to mitigate the

emotional trauma received by most students in the conventional universities, first, from all sorts of harassments from lecturers and now the COVID-19 pandemic.

Open distance learning programmes are well organised, recognized and designed, various classes of citizens are allowed to participate in it – both working class, non-working class and special needs children learning at their pace to achieve the same objective. These advantages have made the National Open University of Nigeria to be unique and able to compete with her counterparts in other parts of the world.

Several arguments are associated with e-learning. They include accessibility, affordability, flexibility, learning pedagogy and life-long learning. It is said that online mode of learning is easily accessible and can reach learners in rural and remote areas. It is considered to be a relatively cheaper mode of education in terms of the lower cost of transportation, accommodation, and the overall cost of institution-based learning. Flexibility is another interesting aspect of online learning; a learner can schedule or plan his/her time for completion of courses available online. Combining face-to-face lectures with technology gives rise to blended learning and flipped classrooms; this type of learning environment can increase the learning potential of the students. Students can learn anytime and anywhere, thereby developing new skills in the process. Some instructors use simple camera and microphone setups to record lectures in their classrooms. The government also recognizes the increasing importance of online learning in this dynamic world [1]

[1]Basilaia, G., Dgebuadze, M., Kantaria, M. & Chokhonelidze, G. (2020). "Replacing the classic learning form at universities as an immediate response to the COVID-19 virus infection in Georgia". *International Journal for Research in Applied Science & Engineering Technology, 8(3),* 123-127.

Some problems are however associated with Open Distance Learning. This is due mainly to the fact that there are a number of technologies available for online education but sometimes they create a lot of difficulties. These difficulties associated with modern technology range from downloading errors, issues with installation, login problems, problems with audio and video, and so on. Sometimes students could find online teaching to be boring and uninteresting.

Personal attention is also a huge issue facing online learning. Students sometimes prefer a two-way interaction which sometimes gets difficult to implement. The learning process cannot reach its full potential until students practice what they learn. Sometimes, online content is all theoretical and does not let students practice and learn effectively. Mediocre course content is also a major issue. Students feel that lack of community, technical problems, and difficulty in understanding instructional goals are the major barriers for online[2]. Graham[3], also stated that the challenges facing effective implementation of blended learning techniques include increased demand on time, inadequate infrastructures, limited access to the Internet, insufficient allocation of funds to the educational sector and lack of motivation for the teachers.

A lot of issues are attached to online education, but these difficulties can be fixed. Technical difficulties can be solved through pre-recording video lectures, testing the content, and always keeping Plan B ready so that the teaching-learning process is not hampered. Online courses should be made dynamic, interesting, and interactive. Teachers should set time limits and

[2]Song, L., Singleton, E. S., Hill, J. R., Koh, M. H. (2004). "Improving online learning: Student perceptions of useful and challenging characteristics". *The Internet and Higher Education, 7(1),* 59–70.
[3]Graham, C.R. (2006). "Blended learning systems; definition, current trends, and future directions". In Bonk, C.J. & Graham, C.R. (eds.). *Handbook of Blended Learning: Global Perspectives, Local Designs*, San Francisco, CA: Pfeiffer, Pp. 3-21.

reminders for students to make them alert and attentive. Efforts should be made to humanize the learning process to the best extent possible. Personal attention should be provided to students so that they can easily adapt to the virtual learning environment. Social media and various group forums can be used to communicate with students. Content should be such that enables students to practice and also hone their skills.

The quality of the courses should be improved continuously, and teachers must try to give their best. Online programs should be designed in such a way that they are creative, interactive, relevant, student-centered, and group-based [4].

The challenge to educational institutions is not only in finding new technology and using it but also reimagining its education, thereby helping students and academic staff who are seeking guidance for digital literacy. The increase in personal computer knowledge and usage, wider development of Internet technologies and fast Internet access have aided the provision of ODL services to the citizenry. In the opinion of Davies[5], quick Internet access is the groundwork for providing a very important item of distance education with the web. Hence, blended learning combines training, coaching, distance learning and face-to-face learning.

The term blended learning is a new approach to education system in Nigeria other than NOUN.

---

[4]Partlow, K. M., Gibbs, W. J. (2003). "Indicators of constructivist principles in internet-based courses". *Journal of Computing in Higher Education, 14(2),* 68–97.
[5]Davies, D. (2003). "Design content for blended learning solution" E-Learning Conference, Manchester, 18-19 March.

It is used with increasing frequency within the academic world. It involves a standard combination of traditional face-to-face educational methodology with the self-study online educational resources which makes it possible to get satisfaction from the potential of each teaching method utilized. Blended learning has been identified by the American Society for Training and Development (ASTD) as one of the top ten trends to emerge in the knowledge delivery industry and it is emerging as a major global trend in an educational context[6].

Blended Learning is known roughly as combining the traditional teacher-led classroom learning and technology-based e-Learning. The significant presence of web-based instruction over the few years has led to the discovery of the term "blended learning" which is the hybrid learning approach or mixed mode learning.

Blended Learning (BL), or the integration of face-to-face and online instruction[7], is widely adopted across higher education with some scholars referring to it as the "new traditional model"[8] or the "new normal" in course delivery[9]. However, tracking the accurate extent of its growth has been challenging because of definitional ambiguity[10], combined with institutions' inability to track an innovative practice, that in many instances has emerged organically. One early nationwide study sponsored by the Sloan Consortium (now the Online Learning Consortium) found that 65.2% of participating institutions of higher education (IHEs) offered blended (also termed *hybrid*) courses[6].

---

[6]Allen, J. & Seaman, G. (2006). *A Dictionary of Sociology*. Oxford: Oxford University Press.
[7]Graham, C. R. (2013). "Emerging practice and research in blended learning. In M. G. Moore" (ed.), *Handbook of Distance Education*, (3rd ed.), New York: Routledge. Pp. 333–350.
[8]Ross, B., & Gage, K. (2006). "Global perspectives on blended learning: Insight from WebCT and our customers in higher education". In C. J. Bonk, & C. R. Graham (eds.), *Handbook of Blended Learning: Global Perspectives, Local Designs*, (pp. 155–168). San Francisco: Pfeiffer.
[9]Norberg, A., Dziuban, C. D., & Moskal, P. D. (2011). A time-based blended learning model. *On the Horizon*, *19*(3), 207 - 216. https://doi.org/10.1108/10748121111163913.
[10]Tynan, B., Ryan, Y., & Lamont-Mills, A. (2015). "Examining workload models in online and blended teaching". *British Journal of Educational Technology*, *46*(1), 5–15.

A 2008 study, commissioned by the U.S. Department of Education to explore distance education in the U.S., defined BL as "a combination of online and in-class instruction *with reduced in-class seat time for students*" [11]. Using this definition, the study found that 35% of higher education institutions offered blended courses, and that 12% of the 12.2 million documented distance education enrollments were in blended courses. As already mentioned, there is not *one* concept of distance education, but a variety of such concepts. And there is a disparity between some of them. Often concepts are so strong and convincing that they are cast into the mould of a model which can be tested and with which experiences can be made[12].

Even more: such models can be fixed or even become "petrified" when they are institutionalized. Consciously or sub-consciously distance teaching institutions are shaped by certain theoretical notions and ideas about distance education. Therefore, it might be useful to present a small number of selected models of distance education for a clearer understanding of their conception underpinnings. Three models of distance education, which are some of those propounded by Otto[12], are listed herein.

1. The group distance education model
2. The autonomous learner model
3. The network-based distance education model

[11]Lewis, L., & Parsad, B. (2008). *Distance Education at Degree-granting Postsecondary Institutions: 2006–07 (NCES 2009–044)*. Washington: Retrieved from http://nces.ed.gov/pubs2009/2009044.pdf.
[12]Otto, P. (2018). *Pedagogical Models in Distance Education*. Retrieved from; www.c3/.uni-oldenburge.de>cde>retrievedon 23rd Feb.2021.

The Group Distance Education Model

In the opinion of Otto[12], this model is similar to the third one as radio and television are used permanently as teaching media, especially for transporting lectures held by professors. However, these lectures are as a rule not received by individual students but rather by groups of students attending obligatory classes where they follow the explanations of an instructor, discuss what they have heard and watched, do their assignments and take their tests. No special printed teaching material is developed and distributed with the exception of the customary "lecture notes". The Chinese "Central Radio and Television University is the most prominent example. But similar models are also used in Japan and Korea.

Analyzing this model critically one might say that this is not really a form of distance education although, to be sure, groups of students are taught at a distance. In fact, it is a form of **technically extended campus-based education**. The lectures transmitted are the same as on a real campus. And the instruction in the local classes remind us very much of classes or seminars on a campus as well. The managers of the Chinese system are even very much concerned not to depart from the formats of campus-based teaching and learning. They maintain – and are even proud of this – that the Central Radio and Television University is a university just like all other universities. In other words: they do not adapt the methods of teaching and learning to the special needs of the distant learners.

The Autonomous Learner Model

This model was propounded by Otto[12]. It provides for freedom to develop independent learning. Its goal is the education of the autonomous learner, which is, pedagogically speaking, an ambitious, demanding, but also a very promising goal.

The students do not only organize their learning themselves as in for example, in the correspondence or multiple mass media model, but they also tackle the curricular tasks, are responsible for determining the aims and objectives, selecting the contents, deciding on the strategies and media they want to apply and even the measurement of their learning success.

Here, the professors have ceased to present contents again and again, lecture after lecture or one course after the other. Here, the long tradition of expository teaching comes to an end. Instead, professors function as individual and personal advisors, as facilitators, who meet the students regularly once a month or so for long and thorough interviews. In these meetings the students present, discuss and negotiate their objectives and plans. The agreements they reach are fixed in form of a contract.

The Network-Based Distance Education Model

This model is presently emerging as part of the digital transformation of our work and *Lebenswelt* [12]. It provides for the possibility to work in a digitalised learning environment. This is a most convenient learning situation. The students have access to even the remotest teaching programmes and databases carrying relevant information. They may work off-line or on-line. They may use CD-ROMs with distance education course in hypertext-form or just data bases while studying a subject (expert systems). They may take part in virtual seminars,

workshops, tutorial and counseling meetings, tuition or project groups and chat with their fellow students. The greatest pedagogic advantage, however, is that the students are challenged to develop new forms of learning by *searching, finding, acquiring, evaluating, judging, changing, storing, managing and retrieving information* when needed. They have the chance to learn by discovery and to be introduced into learning by doing research.

This model is certainly a complex and demanding one. But it is promising as it opens up new dimension of pedagogical endeavour in distance education. For the time being I still believe that the function of computer and network-based learning and teaching will be different ones in campus-based education and in distance education.

Statement of the Problem

Blended learning approach has been tested but as a result of some lapses, the idea of combining the conventional form of learning and e-Learning approach becomes quite imperative and this calls for quality facilitation method. There has been relatively high up roaring on the poor academic performance of students in all schools, which can be used to measure the quality of their teachers. Therefore, quality facilitation becomes quite imperative to ensuring quality input that would bring about quality output in the educational system. Blended form of teaching should be given adequate attention, providing the necessary required facilities especially in the science-oriented courses such as laboratories, technical workshops and many others that would encourage the technological advancement of the country. Therefore, high quality facilitators should be engaged and encouraged to implement blended form of learning rather than using unqualified people to do the work of facilitation. However, while majority of the facilitators considered blended learning as a good approach in the present dispensation especially since the

outbreak of COVID-19 pandemic, some think otherwise. To this end, there is the need to analyse the perception of facilitators on the use of blended learning techniques in the National Open University of Nigeria.

Purpose of the Study

The main purpose of this study is to analyse the perception of facilitators on the use of blended learning techniques in the National Open University of Nigeria. Specifically, this study seeks to:

1. determine the perception of facilitators on the use of blended learning techniques at National Open University of Nigeria.
2. examine the hitches encountered in blended learning in National Open University of Nigeria.

Research Questions

The following research questions guided this study:

1. What are the perceptions of facilitators on the use of blended learning techniques in National Open University of Nigeria?
2. What are the challenges of blended form of learning in National Open University of Nigeria?

Scope of the Study

This study centered on the perception of facilitators on the blended learning techniques in National Open University of Nigeria.

Methodology

Research Design

The appropriate design for this study is descriptive survey research design employed to analyse the perception of facilitators on the use of Blended form of Learning Techniques in National Open University of Nigeria.

Population of the Study

The Population for this study is one hundred and fifty (150) facilitators who are currently staff in some of the study centres of the university.

Sample and Sampling Technique

The sample for the study is eighty (80) facilitators randomly selected from the population. Equal gender was not considered in selecting the sample.

Research Instrument

The instrument for the data collection was a well-structured questionnaire, which was personally designed by the researcher. The instrument consists of twenty-five (25) structured items divided into two major parts namely; A and B respectively. Part A consists of five (5) items which helped to elicit information on the biodata of the respondents while part B represented the main body of the questionnaire having twenty (20) generated statements. Each item of the questionnaire was designed using 4-point scale method. These include Strongly Agree = SA, Agree = A, Disagree = D, Strongly Disagree = SD.

Method of Data Analysis

The result of every items collected from the questionnaire was calculated using percentage and frequency table and simple statistical mean to find the average responses for the study.

Decision

In interpreting the mean value, a mean of 2.50 was accepted and mean that falls below the mean score of 2.50 was rejected.

Data Presentation and Analysis of Students` Questionnaire

Section A

Table 1: Distribution of Respondents by gender

Gender	Frequency	Percentage
Female	42	52.50
Male	38	47.50
Total	**80**	**100.00**

Distribution of the respondents by gender indicates that, 52.5% of the respondents were female whereas 47.5% were males.

Table 2: Distribution of Respondents by Age

Age	**Frequency**	**Percentage**
25-35	12	0.15
36-45	33	41.25
46 and above	35	43.75
Total	**80**	**100.00**

Distribution of respondents by age shows that, 0.15% of the respondents are between ages 25-35, 41.25% are between the age of 36-45, and 43.75% are between the ages of 46 upwards.

Section B

Table 3: Perceptions of facilitators on the use of blended learning techniques in National Open University of Nigeria

S/N	ITEMS	SA	A	D	SD	Mean
		4	**3**	**2**	**1**	
1.	Blended learning techniques in National Open University of Nigeria helped to improve teaching and Learning.	35	14	18	13	2.89
2.	Traditional approach is better than blended learning.	12	10	23	35	1.99
3.	Blended learning makes teaching and learning more interesting.	39	25	11	5	3.23
4.	E-learning and face to face learning are not properly implemented in all courses.	42	19	10	9	3.19
5.	Accessibility to various teaching techniques Have been made to the learners through blended learning	29	32	12	7	3.04

Analysis on Research Question 1

- For item 1, the mean score is 2.89 which means that, blended learning techniques help to improve teaching and learning in NOUN
- For item 2, the mean score is 1.99 which is less than 2.25 and therefore indicates that traditional approach is not better than blended learning methods.
- For item 3, the mean score is 3.23 which means that learning is more interesting with blended learning techniques.
- For item 4, the mean score is 3.19 which means that, e-learning and face to face learning methods are still not properly implemented in all courses in NOUN.
- For item 5, the mean score is 3.04 which means that accessibility to various teaching techniques have been made available to learners through blended learning techniques.

Table 4: The Blended learning techniques and its difficulties in National Open University of Nigeria (NOUN)

S/N	ITEMS	SA	A	D	SD	Mean
		4	**3**	**2**	**1**	
1.	Internet access is not made available to the facilitators independently.	28	25	17	10	2.89
2.	It is time consuming.	25	32	16	7	2.94
3.	Practical courses do suffer most in blended learning.	38	23	10	9	3.13
4.	There is sufficient fund allocated to facilitators for this teaching method	15	11	27	27	2.18
5.	Enough infrastructures have been set up to achieve the expected goals of blended learning approach	18	14	26	22	2.35

Analysis for Research Question 2

- For item 1, the mean score is 2.89 which shows that Internet access is not made available to the facilitators independently.
- For item 2, the mean score is 2.94 which means that, blended learning technique is time consuming.

- For item 3, the mean score is 3.13 which means that, practical courses do suffer most in bended learning.
- In item 4, the mean score is 2.18 which means that sufficient fund is not allocated to facilitators to implement blended learning methods.
- In item 5, the mean score is 2.35 which means that enough infrastructures have not been set up to achieve the expected goals of blended learning implementation.

Discussion of Findings

Research Question 1: The result from the first research question shows that blended learning techniques help to improve teaching and learning in NOUN. Thus, traditional approach which is face to face is not better than blended learning methods. Indeed, learning is more interesting when blended learning techniques are adopted. However, it is an ongoing process as the e-learning methods are not fully implemented in all courses in NOUN, and accessibility to various teaching methods have been made available to learners through blended learning techniques.

The findings are in support of Lewis and Parsad[11] who stipulated that 35% of higher education institutions offered blended courses, and that 12% of the 12.2 million documented distance education enrollments were in blended courses.

The findings are also in conjunction with Graham's[3] position that with blended learning approach, learning environments solve some communication problems sourced by distance learning environments. To this end, blended learning techniques comprise both the advantages of face-to-face teaching and that of the online teaching respectively.

Research Question 2: The result from the second research question, indicates that, Internet access is not made available to the facilitators in NOUN independently; blended learning technique is time consuming on the side of the facilitators; practical courses suffer most in blended learning; sufficient fund is not allocated to facilitators for the purpose of implementing blended learning methods, and enough infrastructures have not been set up to achieve the expected goals of blended learning. These findings are in conjunction with what Partlow and Gibbs[4], opined. They stated that online programs should be designed in such a way that they are creative, interactive, relevant, student-centered, and group based. According to Partlow and Gibbs[4], the challenge to educational institutions is not only finding new technology and using it but also reimagining its education, thereby helping students and academic staff who are seeking guidance for digital literacy. The study is also in agreement with what Graham's[3] position that the challenges facing effective implementation of blended learning techniques include increased demand on time, inadequate infrastructures, limited access to the Internet, insufficient allocation of fund to the educational sector as well as lack of encouragement for the teachers.

However, these findings are evidence to the fact that Nigeria as a nation is still having problems with poor allocation of funds to the educational sector, poor Internet access, poor infrastructures among others.

---

[3]Graham, C.R. (2006). "Blended learning systems; definition, current trends, and future directions". In Bonk, C.J. & Graham, C.R. (eds.). *Handbook of Blended Learning: Global Perspectives, Local Designs*, San Francisco, CA: Pfeiffer, Pp. 3-21.
[4]Partlow, K. M., Gibbs, W. J. (2003). "Indicators of constructivist principles in internet-based Courses". *Journal of Computing in Higher Education, 14(2),* 68–97.
[11]Lewis, L., & Parsad, B. (2008). *Distance Education at Degree-granting Postsecondary Institutions: 2006–07 (NCES 2009–044)*. Washington: Retrieved from http://nces.ed.gov/pubs2009/2009044.pdf.

Conclusion

In conclusion, based on the available findings from the study "perception of facilitators on the use of blended learning techniques in the National Open University of Nigeria, it was revealed that although the implementation of blended learning is still not in its fullest to accommodate all the courses in NOUN, yet it is the most effective technique to achieve high quality teaching and learning in NOUN. The facilitators should be well-motivated financially and provided with access to the Internet. Until most of these strategies are put into action, the perfect implementation of blended learning in NOUN and even beyond would not be effectively achieved.

Recommendations

The following recommendations were made from the study:

1. National Open University of Nigeria needs to incorporate blended learning techniques in all courses being offered.
2. Facilitators should be well-encouraged through attractive remuneration and also provided with sufficient practical facilities that would make the programme worthwhile.
3. Internet access should be made available to all facilitators in National Open University of Nigeria.
4. Sufficient fund should be made available by the government to ensure effective and efficient delivery of blended learning techniques in NOUN thereby giving room for the reintroduction of workable models into the system.

Bibliography

Allen, J. & Seaman, G. (2006). *A Dictionary of Sociology*. Oxford: Oxford University Press.

Basilaia, G., Dgebuadze, M., Kantaria, M. & Chokhonelidze, G. (2020). "Replacing the classic learning form at universities as an immediate response to the COVID-19 virus infection in Georgia". *International Journal for Research in Applied Science & Engineering Technology, 8(3),* 123-127.

Davies, D. (2003). "Design content for blended learning solution" E-Learning Conference, Manchester, 18-19 March.

Graham, C.R. (2006). "Blended learning systems; definition, current trends, and future directions". In Bonk, C.J. & Graham, C.R. (eds.). *Handbook of Blended Learning: Global Perspectives, Local Designs*, San Francisco, CA: Pfeiffer, Pp. 3-21.

Graham, C. R. (2013). "Emerging practice and research in blended learning. In M. G. Moore" (ed.), *Handbook of Distance Education,* (3rd ed.), New York: Routledge. Pp. 333–350.

Lewis, L., & Parsad, B. (2008). *Distance Education at Degree-granting Postsecondary Institutions :2006–07 (NCES 2009–044).*Washington: Retrieved from http://nces.ed.gov/pubs2009/2009044.pdf.

Norberg, A., Dziuban, C. D., & Moskal, P. D. (2011). A time-based blended learning model. *On the Horizon, 19*(3), 207 -216. https://doi.org/10.1108/10748121111163913.

Otto, P. (2018). *Pedagogical Models in Distance Education*. Retrieved from; www.c3/.uni-oldenburge.de>cde>retrievedon 23rd Feb.2021.

Partlow, K. M., Gibbs, W. J. (2003). "Indicators of constructivist principles in internet-based Courses". *Journal of Computing in Higher Education, 14(2),* 68–97.

Ross, B., & Gage, K. (2006). "Global perspectives on blended learning: Insight from WebCT and our customers in higher education". In C. J. Bonk, & C. R. Graham (Eds.), *Handbook of Blended Learning: Global Perspectives, Local Designs*, (pp. 155–168). San Francisco: Pfeiffer.

Song, L., Singleton, E. S., Hill, J. R., Koh, M. H. (2004). "Improving online learning: Student perceptions of useful and challenging characteristics". *The Internet and Higher Education, 7(1),* 59–70.

Tynan, B., Ryan, Y., & Lamont-Mills, A. (2015). "Examining workload models in online and blended teaching". *British Journal of Educational Technology, 46*(1), 5–15.