

ISSUES IN EDUCATIONAL ASSESSMENT IN NIGERIA

ROMY O. OKOYE Ph.D

Professor of Educational Measurement, Evaluation and Research

Nnamdi Azikiwe University, Awka

rookoye@gmail.com rookoye@unizik.edu.ng

A Lead Paper Presented in the 19th Annual Hybrid International conference of the Faculty of Education, University of Nigeria, NSUKKA, held at Princess Alexandra Auditorium, UNN, on Wednesday, May 24, 2023.

Introduction

Assessment is a practice that had existed since the beginning of man. It permeates every aspect of human endeavour because it is difficult for one to progress in any enterprise without engaging in efforts to see how well past activities have succeeded. In the education system, assessment is a sine qua non for success in teaching and learning process. Many decisions are taken in the system based on the outcome of assessment. Example, Educational certificates are awarded to students based on results of assessment. It is used to ascertain how much of stipulated educational objectives have been achieved or the areas in which students have learning problems, with a view to remedying them. Its importance can therefore not be over-emphasized. The quality of educational assessment in a country determines to a large the level of development in that country. Where the quality is high, round pegs are likely to be placed in round holes. Otherwise, individuals are wrongly placed, which then hinders national progress and development. In view of the indispensability of assessment, there is need to occasionally look at issues arising from its practice, with a view to improving it.

Before proceeding to look at the issues, it may be necessary to look at some terms which may be used interchangeably with assessment. One of such terms is evaluation. While the two have much in common, there is a clear distinction between them. One major distinction between the two lies with the timing. While assessment is made as an activity progresses, evaluation is made at the end of the activity, during which a decision is made, guided by a set standard or criterion. Assessment therefore is formative and diagnostic in nature while evaluation is judgmental, yielding a terminal score. Assessment is concerned with how learning progresses while evaluation is concerned with the outcome of learning. Other related terms are measurement, testing and examination.

Measurement is the assignment of numerals to persons, objects or events. These numerals could be used for assessment or evaluation. Testing or examination on the other hand involves exposing a person to a set of questions, statements or tasks, with a view to ascertaining how much of a desired quality is possessed by the person.

In as much as differences do exist between the terms measurement, evaluation, assessment, testing and examination, each of them is aimed at ascertaining the existence or

otherwise of quality or characteristic. In some contexts they could be used interchangeably. In this paper therefore, when we talk of issues in educational assessment, they cover issues in educational measurement, evaluation, assessment and testing, as well as issues in examination, without minding the little differences that exist among them.

Whenever educational assessment is mentioned, what comes to mind is the assessment of students. Apart from students, there are a number of other things or persons that are assessed in the educational system. Among them are assessment of the teacher and assessment of programme. In this paper therefore discussions are based on assessment of the student, that of the teacher and then programme assessment.

Assessment of the Student

In this section, some issues are discussed regarding assessment of students. They are: setting, moderation and marking of questions; open vs closed book methods of assessment; assessment of learning vs assessment for learning, and digital/online assessment.

Setting, moderation and marking of questions

Areekkuzhiyil (2021) had expressed worry about the quality of questions set in the educational system. At various levels of the educational system, there are guidelines regarding how examination questions should be set and how they should be moderated. In some situations these guidelines are hardly adhered to. A teacher may set their questions today, and the next day they are administered. This gives rise to situations where teachers set very easy, very difficult or ambiguous questions. Setting of examination questions demands high degree of meticulousness. According to Chorpra (2022), setting of examination paper is a strenuous and time-consuming task for teachers. Going further they noted that the teacher has to be thorough and ensure that the examination paper aligns with the purpose/reason for testing the students.

A look at teacher-made tests will reveal that some of them contain questions that are ambiguous or questions which the examiners themselves may not be able to answer. The funny thing is that once such questions are set, the students must take them, and whatever the teacher considers as the correct answers to such questions are used by them to score the papers. How valid such scores are, is another matter. It may make an interesting research to ask teachers to take examinations, using the questions they set for students, and their answer scripts, marked by other people. One may be surprised with the type of results that would be obtained from this type of study. There is therefore need for studies on how testing is conducted at various levels of the education system.

At the university level of the education system there are usually policies regarding how to set questions, how to moderate them, how to produce and administer questions and finally how to moderate results of those examinations. To show that it is a general practice to have these policies, Ombasa (2017) conducted a study to identify similarities and differences existing in policies that guide the setting, moderation and marking of examinations in some universities in the United Kingdom with those of some universities in East Africa. Though there were some differences in the policies, a number of similarities were noted with regard to setting of university examination questions, and the moderation of same questions. As regards the setting of questions, it was found that the questions in each course are set by a member or members of staff who taught the course, while for the

moderation, it was a common practice that examinations have to be internally and externally moderated before they are administered on students.

The observations made above apply to universities in Nigeria, though there may be minor differences in policies between one university and the other. At Nnamdi Azikiwe University, Awka for example, the 2019 edition of the general and academic regulations of the University stipulates the following, among others, regarding the setting, moderation and making of examination questions:

1. Each course lecturer should submit to his Head of Department, at least ten (10) questions to cover the scheme in each course, not later than four (4) weeks from the beginning of each semester.
2. The Head of Department shall forward all the questions submitted to him to the Departmental Board of Examiners for moderation, at least two weeks before the beginning of the examination.
3. The Head of Department shall be responsible for the security and production of question papers of the Department.
4. Signed result for the course, together with marked answer scripts and the making guide for the course shall be submitted by the course lecturer to the Head of Department, at most two (2) weeks from the end of examinations.
5. The Head of Department shall present the results to the Departmental Board of Examiners for moderation and approval, not less than three weeks from the end of the examinations.

Similar guidelines as above will be found in the policies of many other Nigerian universities. The question however is, how many of these guidelines are adhered to by the teachers and heads of department. For example, how many departments subject their examination questions to internal and/or external moderation before they are administered? How many teachers submit their answer scripts and marking guides along with their result? If the scripts and marking guides are submitted, how do departments make use of them during internal or external moderation? How do they ensure that students were fairly graded during the marking? If students did very poorly or excellently well in a course, is there any effort to have a look at how the marking was done by going through a small sample of marked scripts. There is reason for the inclusion of each guideline in the policy. They are intended to ensure quality assessment. Consequently a breach of any of them is bound to have some negative consequences on the quality of such assessment.

For people to improve in the art of setting and marking of questions, there is need for conscious efforts in inculcating those skills in them. Usually, when teachers are newly employed, no serious efforts are made to groom them in this art. The assumption is that any person who is able to teach should know how to examine their students. Some of the teachers, particularly in higher educational institutions, never underwent any course in testing. Even for the lecturers in faculties of education, or those that have been in the teaching business for many years, no serious effort is made to expose them to regular seminars and workshops on construction and marking of examination questions.

Closed vs open book examination

The traditional system of examination which is used world-wide is one in which students are not allowed to enter the examination hall with any material. Any attempt to

bring unauthorized material into the hall is seen as a malpractice. This type of examination is known as Closed Book Examination (CBE). To prepare for such an examination, students are expected to read and memorize the contents, with a view to retrieving and reproducing them during the examination. Not everybody is good in memorizing things. Consequently, some students try to smuggle some materials into the examination hall with the intention of copying from them during the examination. Examiners are therefore charged with the responsibility of ensuring that students do not engage in such practices. Students who are caught with such materials are given one type of punishment or the other. Though this method of examination is universally used, some individuals pick holes with this method of assessment. For example, Koshal (2011) observed that closed-book examination makes most students just to memorize all that is learnt without properly understanding them. Also, with this method, students are tempted to engage in examination malpractice. In place of closed-book examination, people have advocated for the use of open-book examination method.

An open-book examination is one in which students are allowed to bring stipulated materials into the examination hall. Advocates of open-book examination feel that closed-book examination method does not seem to suit the present situation where there is knowledge explosion, and the concern of people should be with how knowledge can be accessed rather than how much knowledge can be memorized. Open-book examination demands that more of higher order questions should be asked, than lower order questions. In view of this, it is believed that this method of examination will help to evaluate the understanding of a particular subject and the ability to apply that knowledge in different situations (Koshal, 2011). It also requires students to demonstrate critical thinking along with logical reasoning (Swart & Sutherland, 2014).

Open-book examinations can be classified into two types – restricted and unrestricted. In restricted type, the materials to be brought into the examination hall are specified while in the unrestricted type the student is given unlimited freedom to come with whatever material they like. Pillai and Pillai (2022) however categorized them into three – restricted, partially restricted and unrestricted. In the restricted OBE, only some pages of notes or formulae can be used; in the partially restricted, class notes and worksheets can be used while textbooks are restricted. In the unrestricted OBE, full access is allowed for all kinds of materials. Another method of classifying OBE, according to Pillai and Pillai, is to either give traditional sit-down/limited time examination or take-home examination.

It should be noted that academics are still divided regarding whether or not open-book examination should be adopted in preference to the closed-book examination method. Swart and Sutherland (2014) drew attention to academics that argued in favour of the adoption of OBE and those that argued against its adoption. Protagonists of OBE argued that in deciding which of the two methods should be adopted one should be concerned with which of them would improve learning and bring about better retention. Swart and Sutherland cited a number of authors that agreed with the theory of testing effect which suggests that examinations requiring more challenging retrieval questions produce greater benefits for long-term retention. The implication of the above is that OBE is more likely to produce long-term retention of knowledge.

The introduction of open-book examination method is not as recent as people may think. According to Pillai and Pillai (2022), between 1951 and 1978, many researches were carried out to ascertain the value of open-book examination, primarily in the USA and UK despite the fact that the method has lasted for over eight decades, there is still need for more researches on it, with a view to encouraging its practice particularly in African countries when its adoption has relatively not been substantial. In a study conducted by Anosike and Okoye (2020), achievement scores of students in mathematics, who were exposed to OBE and CBE were compared. The study was carried out using 2018/2019 Senior Secondary School II (SS II) students in Nnewi Education Zone of Anambra State. The finding showed that students exposed to OBE had greater achievement than those exposed to CBE. In another study, Swart and Sutherland (2014) tried to ascertain the perceptions of university students, studying satellite communications, regarding the use of OBE. These students were previously examined using CBE before the universities decided to switch over to OBE mode. After taking the OBE, an online questionnaire was sent to each of them requesting them to indicate whether or not they preferred OBE to CBE. The result indicated that majority of the students showed preference to OBE over the CBE.

Assessment of learning and assessment for learning

Assessment in the classroom could be categorized into two – Assessment of Learning (AOL) and Assessment for Learning (AFL). Usually assessment of learning is emphasized, to the detriment of assessment for learning. Assessment of learning, according to Earl (2003) and Benneth (2017), is typically done at the end of a unit, course, a grade or a key stage of a programme, and the achievement in such an assessment is judged against a class -, district -, or nationwide benchmark or standard. Going further, Earl noted that its purpose is summative, intended to certify learning and report to parents and students about students' progress in school, usually by signaling students' relative position compared to other students. Assessment of learning could therefore be regarded as the traditional conception of assessment.

In contrast to the traditional type of assessment which comes up at the end of the unit, course or programme, is one which goes on as the course or programme progresses. Proponents of this types of assessment hold the notion that assessment is part and parcel of the teaching learning process, and as such it should be properly integrated into it. This alternative assessment mode is known as assessment for learning. Simply put, according to Earl (2003), assessment for learning shifts the emphasis from summative to formative assessment, from making judgment to creating descriptions that can be used in the service of the next stage. Going further, Earl stated that marking is not designed to make comparative judgments among the students but to highlight each student's strengths and weaknesses, and provide them with feedback that will further their learning. The feedback helps teachers to reflect and improve their future practices (Latafat, 2021).

A fall-out from the notion of assessment for learning is the claim by researchers that assessment could serve as a study technique. By this, it is implied that a student who is studying should engage in self-testing while reading the content. This notion that assessment or testing, while reading, helps to improve the ability of student to acquire and retain the material being read, is known as testing effect.

Testing Effect. Schwierien et al. (2017) views testing effect as a robust empirical finding in research on learning and instruction, demonstrating that taking tests during the learning phase facilitates later retrieval from long-term memory. Some people refer to it as effect of retrieval practice. This means that if a student is exposed to situations that constantly require them to retrieve what they have learnt, learning is more likely to be enhanced as well as the ability to retrieve such material when demanded in future. Therefore, the more frequently a student is exposed to testing the more likely that learning is to be enhanced.

In a meta-analytic study by Schwierien et al (2017), they analysed 19 publications that tested the effect in the context of learning and teaching psychology. The result of their analysis showed that those researches confirmed that testing enhanced learning.

Teach Com (2020) reported a study on testing effect by Karpicke and Blunt (2011). In that study three groups of students were used. The first group was allowed to read a short passage for five minutes only. The second group read the passage for five minutes, after which they took a short break. This exercise (read and go for break) was repeated three times. This means that they read the passage four times, interjected with short breaks.

The third group read the passage for five minutes. They then put the material away, picked up a plain sheet of paper and wrote down all they could remember as the content of the passage. This exercise of reading for five minutes and spending the next ten minutes to remember what was read, was repeated once. One week after the study, the students in the three groups were tested based on the contents of the passage. The result of the study showed that students in the third group achieved highest. The implication is that reading, combined with testing is more effective in enhancing learning than continuous reading.

In another study; Greving and Richter (2018) used the last 10 minutes of each lecture to review the lecture content. In one group, students were required to answer short answer questions. In another group they were given multiple-choice questions while in the third group they read summarizing statements about the lecture contents. The three group's were tested at different times (1, 12 and 23 weeks after the last lecture). The result showed that testing effect was greatest for the group that was exposed to short answer test, and this superiority existed irrespective of the time of testing. The implication of this result is that the magnitude of testing effect depends on the type of test that is used. The effect is not the same when short answer questions are used as against when multiple-choice test is used.

From all the above, it is deduced that testing is a study technique. Therefore, it is not advisable for a student to keep reading and re-reading. Rather, reading should be interjected with testing. If a student, for example, has gone through a material the first time, before going through any section of it the second time, they should pick up a plain sheet of paper and write down as much of the contents of the section as they could remember. This practice may reduce the speed of reading, but on the long it will have more lasting effect on acquisition of the material and retention.

Interest in testing effect had existed for over a century. That notwithstanding, there is still need for studies in this area. For example, there is need for studies on the conditions under which the effect is maximum.

Online examination

With the evolution of digital technology it has become imperative that for any society to fit into current global activities, such a society has to adapt to the demands of technological advancement. This applies to all aspects of human endeavour, including the education system. Prior to 2019, online learning had existed in some Nigerian universities. Then, universities in the country were transiting into this mode of learning at relatively slow pace. During the COVID – 19 Pandemic, there was total lockdown of activities all over the world, as a result of which schools and most other activities could not function. At this time, online learning was seen as the only alternative to ensure that the education system did not crumble. From that time, most, if not all universities in Nigeria, have been making serious efforts to migrate to online mode of teaching and learning. Examination is not left out. Many universities therefore engage in one form of online examination or the other. This form of examination has a number of advantages. One of such advantages is the reduction in the cost of administering examination. It does not require papers for running the question papers or answer booklets, including the cost of printing. Distance may not be a barrier to taking this type of examination. A candidate could take it from wherever they are, provided the facilities needed for taking the examination are available and there is internet service.

Irrespective of the advantages of online examination, it has many challenges particularly in a developing country like Nigeria. Among the challenges are poor internet connectivity, inconsistent power supply, lack of needed infrastructure, unreliable examination platform and susceptibility to cheating (Peachy Essay, 2022; Rajpal and Bijaj, 2022). Of the challenges mentioned above, the most disturbing is cheating. Reedy et al. (2021) observed that there is a pervasive view that cheating is more prevalent in online than the face-to-face examination. A study cited by Skshidlevsky (2022) indicated that 95% of students admitted cheating in some form, whether during online examinations or homework assignments. Similarly Rajpal and Bajaj (2022) cited another study which found that 73% of students cheat during online examinations. There has been a controversy among researchers regarding which of the two modes of examination (online and traditional) is more prone to cheating. According to Holden et al. (2020) however, literature is inconclusive regarding whether cheating is more prevalent in online or traditional examination.

There have been efforts by educators to ensure that cheating in online examination is reduced to the barest minimum, by incorporating various advanced remote proctoring methods in such examinations. Despite these efforts, students spend sleepless night trying to see how such measures could be beaten.

Assessment of the Teacher

Apart from assessment of students to ascertain how much they learned, it is necessary to also ascertain how well the teacher has taught. When there are poor quality teachers there are likely to be poor quality students. It is therefore important to monitor how effectively the teacher teaches because that will help to improve their output. The teacher is usually assessed by their immediate head. In the tertiary institution, it is usually the head of department that is asked to rate the teacher, whenever the need arises. For example, during annual appraisal the Head of Department is requested to rate all the teachers in their department. In the secondary or primary schools, the assessment is made

by the head teachers or the principals, as applicable. In some cases supervisors come from the Ministry of Education or a supervising Education Commission, to assess the teachers. The Supervisor, in such a situation observes a teacher for some minutes and scores them. That duration may not be enough to properly assess the teacher. As regards the assessment that is made by the head teacher, principal or head of department, it should be noted that the latter might not have even watched the teacher teach, to enable them do valid assessment. A possible consequence is that a teacher who regularly comes late to class or is irregular in attendance to lectures, a teacher who offers little or nothing to students in terms of knowledge, may be rated highly by the head of department. While not challenging the use of heads of department in assessment of teachers in higher educational institutions, one believes that those people who are direct beneficiaries of the teaching should be in the best position to say who is a good or bad teacher. Students therefore should be involved in evaluating their teachers.

Student evaluation of teaching (SET), according to Sanchez et al. (2020), is a generalized practice in almost every institution of higher education around the world from European countries to Australian and North American universities and South American higher education institutions. In Nigeria, serious efforts have not been made to get it incorporated as a procedure for assessing teachers. Where it is done, it is hap-haz-ard. Though the practice of SET has lasted for over eighty years (Abdallah & Balla, 2022) controversies still exist regarding its adoption. Some who oppose its application hold the view that students lack the ability to assess teachers because of their limited knowledge of teaching. Some of them believe that a student may mistake an entertainer for an effective teacher. To support this position, some studies were carried out, where entertainers who did not know much about the subject, but were good in telling humorous stories, cracking jokes and speaking beautiful English, were made to teach a subject. Results of the studies showed that students rated such teachers highly, indicating the effect of entertainment. On the other hand, result of such similar studies could not confirm existence of entertainment effect.

Abdallah and Balla (2022) cited Al Kuwaiti (2015, one of the proponents of SET, who, in arguing for students' evaluation of teaching, held that students are the individuals with the greatest exposure to a teacher's performance, and are most affected by its quality, so their input is essential to the evaluation of teaching quality and value. Reacting to people who argue that students are not competent to evaluate their teachers, Cole (1940), as cited by Okoye (1998), had this to say:

The students are the consumers of teaching and they know what they can or cannot consume, even if they are foggy about the reason. Students admittedly cannot analyze teaching ability into its elements nor do they often have a clear standard of what constitutes good teaching, but they do not need to have either. They can answer specific questions about their own reactions, and that is all any scale asks them to do.... The idea that college students, especially upper classmen, cannot give reliable opinions about a teacher with whom they have spent from 30 to 60 hours is ridiculous. It is much easier to fool one's colleagues than one's students.....Students are not fools, they see, they hear, discuss and think about every little thing that goes on in the classroom. The information

they give is worth having. It does not tell all there is to know about a teacher, but it is a good evidence concerning those points on which only students are in the position to testify.

One cannot claim that information obtained from students' rating are perfectly reliable, but such information will be very helpful in understanding how students feel about the teacher. The impression of students regarding a teacher should be a major basis for deciding whether or not the appointment of a teacher would be confirmed. It is a person who has eaten food that is in the best position to say if the food is sweet.

Despite the fact that there are controversies regarding the use SET, many countries in the Western world and beyond, adopt this practice in their educational institutions. There is therefore need for educational institutions in Nigeria to embrace it more seriously as a way of ensuring quality in education. This then calls for more researches in the area.

Assessment of programme

Apart from student and teacher assessments there are other things that would be assessed. For example an institution or a programme could be assessed. Programmes at the university level are usually assessed by the National Universities Commission (NUC) and the National Professional body, where it exists. This assessment is referred to as accreditation. For any academic programme to be run in any Nigerian University, it has to be accredited by the National Universities Commission. This exercise is repeated every five years, at the end of which the programme could have interim accreditation, full accreditation or denial of accreditation. In this paper, emphasis is only on accreditation of Education programmes. For accreditation of each undergraduate degree programme, the NUC usually sends a team of experts in that area. The team assesses the programme, guided by the minimum standard provided by the NUC. Teacher education programmes in the faculty of education often take courses from different faculties of the university particularly the faculties of Arts, Social Sciences and the Sciences. What NUC does at times is to engage the services of people who specialized in those subjects, without education background. For example, a person who has bachelor's, master's and doctorate degrees in Religious Studies, without any degree in Education, is sent to accredit Education/Religious Studies Programme. Such a person, on arrival, will expect to see what obtains in the Department of Religious Studies of the Faculty of Arts. The Education component of the programme is down-played. This tends to create problem between some members of the accreditation team and the department being accredited. It is expected that any person that will be involved in accreditation of a teacher-education programme must be one who did the course at the undergraduate level and is currently teaching in the Faculty of Education. Such a person will be in a better position to appreciate the peculiarities of Education Programme.

The next problem that occurs in the accreditation of Education is the tendency of NUC to see a teacher-education department as being the same with any other department in the university system. If for example English/Education Programme is to be accredited, NUC will want to see the teachers in English Department that teach the courses taken by English/Education students, the classrooms and facilities in English Department. If the

Department of English Language is found wanting in any of these areas, the English/Education Programme is denied accreditation.

This may be without minding the fact that, about a month ago, NUC sent accreditation team to that English Department, and after the assessment, the Department had full accreditation. The question therefore is whether it is reasonable to deny accreditation to English/Education Programme that is borrowing course from Departmental of English Language, simply because the accreditation team found faults with facilities and equipment in English Language Department, and without minding the fact that English Language Department has full accreditation. In other words, should it be wise to expect NUC team sent to accredit English/Education Programme to go and assess the facilities, equipment and teachers in English Language Department that has full accreditation. The continuation of the English/Education Programme or otherwise should depend on the accreditation status of English Department. If English Language fails in accreditation, there should be no more admissions for candidates of English/Education.

From the above, it implies that NUC needs to realize the peculiarities of the Faculty of Education, particularly those that run teacher education programme. The continuation or otherwise of those programmes should depend on the accreditation status of the parent department. The demands that expectations during accreditation of teacher education programme should not be exactly the same as for other departments in other faculties. Efforts should be more on the contents of the programme being offered, the contents and teachers of the education component of the programme and the facilities and equipment needed to teach the Education component. This means that some of the forms used for accreditation need to be modified to suit their use for accrediting Education courses.

Recommendations

Based on the issues raised in this paper, the following recommendations are made:

1. Workshops should occasionally be organized for teachers on setting, administration and marking of examination questions.
2. Lecturers should be encouraged to use the open-book examination method as a supplement to closed-book examination.
3. Students should be encouraged by teachers and counselors to adopt constant self-testing while reading their notes instead of engaging in series of reading and re-reading.
4. Before the appointment of a new teacher is confirmed, a report of student evaluation of the teaching of that teacher should be relied upon.
5. Student evaluation of teaching, for each teacher, should be done at the end of each course.
6. Deans of faculties of Education should press on NUC to produce modified accreditation forms that will reflect the peculiarities of the teacher-education programme.

References

- Abdallah, A.O.M. & Balla, B.A.A. (2022). Students' evaluation of teaching effectiveness: Level of acceptance, implementation and causes of concern (A case study of Saudi faculty members at Jeddah University – Kholais Branch). *International Journal of English Language Teaching*, 10 (3), 24 – 36
- Anosike, C.C. & Okoye, R.O. (2020). Effect of test method on students' academic achievement in mathematics in Nnewi Education Zone of Anambra State. *South Eastern Journal of Research and Sustainable Development*, 3 (2), 54 – 65
- Arekkuzhiyil, S. (2021). Issues and concerns in classroom assessment practices. *Edutracks*, 20 (80), 20 – 203
- Benneth, J. (2017). *Assessment for learning vs assessment of learning*. <https://www.pearsonassessment.com/professional-assessments/blog/webinars/blogs/2017/assessment-for-learning-vs-assessment-of-learning>
- Chopra, Y. (2022). *How to set an exam paper like a Pro: Most efficient process*. <https://www.dataobiz.com/blog/how-to-set-an-exam-paper/>
- Earl, L. (2003). *Assessment of learning, for learning, and as learning*. <http://www.tag.education.tas.gov.au>
- Greving, S. & Richter, T. (2018). *Examining the testing effect in university teaching: Retrievability and question format matter*. <https://doi.org/10.3389/fpsyg.2018.02412>
- Holden, O.L., Norris, M.E. & Kuhlmeier, V.A. (2020). Academic integrity in online testing: A research review. *PsyArXiv*. <https://doi.org/10.31234/osf.io/rjk7g>
- Koshal (2011). *Difference between open and closed book examination*. <https://www.differencebetween.com/difference-between-open-and-closed-book-examination/>
- Latafat, K. (2021). *Assessment for, as and of learning*. https://www.researchgate.net/publication/350811508_Assessment-for_as_and_of_learninghttps://doi.org/10.1314/RG.2.2.34581.86245
- Ombasa, E.A. (2017). Setting, moderating and marking university examinations: A comparative review of policies from universities in East Africa and United Kingdom. *International Journal of Scientific and Research Publication*, 7 (4), 192 – 202
- Okoye, R.O. (1998). Teaching effectiveness and its evaluation. In N.N. Okoye (Ed). *Essentials of human learning* (122 – 129). Erudition Publishers.
- Pillai, M.N. & Pillai, N.S. (2022). Building a case for open book examinations. *Towards Excellence: An indexed, Referred and Peer Reviewed Journal of Higher Education*, 14 (2), 666 – 677
- Peachy Essay. (202). *What difficulties will students face due to online exams*. <https://peachessay.com/blogs/difficulties-students-face-in-online-exams/>

- Rajpal, R. & Bajaj, S. (2022). *Five problems faced by universities while shifting to online examinations*. <http://www.softwaresuggest.com/blog/problems-faced-by-universities-while-shifting-to-online-examinations>
- Reedy, A., Pfitzner, D., Rook, L. et al. (2021). Responding to COVID-19 emergency: Student and academic staff perceptions of academic integrity in the transition to online exams at three Australian universities. *Int. Journal of Educ. Integrity*, 7(9)
<https://doi.org/10.1007/S40979-021-00075-9>
- Sanchez, T., Gilar-Corbi, R. Castejon, J.L., Vidal, J. & Leon, J. (2020). Students' evaluation of teaching and their academic achievement in a higher education institution of Ecuador. *Frontiers in Psychology*, 11:233. <https://doi.org/10.3389/fpsyg.2020.00233>
- Schwieren, J., Barenberg, J. & Dutke, S. (2027). The testing effect in the psychology classroom: A meta-analytic perspective. *Psychology Learning and Teaching*, 16 (2), <https://doi.org/10.1177/1475725717695149>
- Skshidlevisky, A. (2022). *10 smart ways students cheat on online proctored exams*. <https://proctoredu.com/blog/tpost/y35x7avne1-10-smart-ways-students-cheat-on-online-proctored-exams>
- Swart, A.J. & Sutherland, T. (2014). Student perspectives of open book vs closed book examination – A case study in satellite communication. *International Journal of Engineering Education*, 30 (1), 210 – 217
- Teach Com. (2020). *What is testing effect and how can you apply it in your approach to educating?* <https://teach.com/what/teachers-know-/testing-effect/>