Different Types of Tests/Exams – Summative Assessment for Competency-Based Learning

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Introduction

Assessment is a complex and critical task in the education sector and as it is widely recognised that assessment drives learning and not the other way around (Qureshi, R., Zahoor, M., & Zahoor, M., 2017). There are multiple ways to assess students’ knowledge, skills and competences. For example, multiple/single choice assessment or short response questions work well in some context but it is unlikely for these types of tests to ascertain that learners can solve a problem or can communicate meaningfully, including demonstrating their thinking skills.

In this section, we are discussing the types of tests or exams that may be used as evidence that learners have developed the defined competences in the competency-based curriculum.

Performance-Based Assessment (PBA)

This type of assessment includes the problem-solving process where learners are required to answer a question by demonstrating their skills and understanding. In addition, learners will create a product based on the knowledge they acquired and deepened when using complex and higher order thinking skills. In such situation, the wrong or correct answer is not the issue but the most important is the way learners motivate their answers with convincing arguments guiding their thinking.

It is a fact that performance-based assessments provide deeper insight into how well learners have learned, and provide insight at what level they understand matters at hands. The outcomes of PBA help teachers to identify where learners need more assistance and in the process to provide teachers with opportunities to implement the differentiated teaching with the aim to respond to learners needs.

It is important to note that different types of tests measure different type of skills. Below is an example of a performance-based question in a course such as Entrepreneurship.

Questions

1. What do you do in case a client asks you a question, which you do not have an immediate answer?
2. A client is complaining about the poor quality customer care of your business and in your own view you do not agree with the validity of the complaint. Describe the action(s) you will take to resolve this problem.

Performance-Based Assessment Impact on Teachers and Learners

Learners

- PBA helps to apply in-class learning to real life situations outside of the classroom.
- It offers a way for students to better measure their own understanding and success. While working on a given task or project, a learner can identify where their performance is excellent and where they are struggling. Thus, they can seek assistance or do more research to get answers to their challenges.
- It prompts active learning and also deep learning.
• It intuitively requires teachers to provide feedback and learners to act on them.
• It facilitates the development of higher order thinking (HOT) skills.
• It permits multiple chances to improve the understanding (mastery learning).
• It helps learners to shape their reasoning and thinking skills.

**Teachers**

• It facilitates the direct observations of learners’ learning.
• It allows a good instructional alignment where the knowledge, the reasoning and the abilities can be observed at once.
• It allows setting authentic and interesting assessments.
• It permits to measure multiple objectives and concepts.
• It offers deeper insight into the learning needs of students.

However, the performance-based test has some disadvantages, such as:

• Can be very time consuming and difficult to assess in a test or exam setup
• Relies heavily on learners initiative and drive
• Relies heavily on specific skill sets of the learners
• Results can be subjective due to the context

**Standardised Tests/Exams**

Standardised tests represent the traditional method of assessment and they rely on the scoring system in a predetermined, standard manner. According to iresearchnet.com, “standardised tests are those that are directed to a group of learners (referred to as the norm group) to obtain information about the likelihood of each possible score on the test”. In addition and according to Burke (1999), this type of test relies on question formats, such as multiple choice, true or false, short answers that can be automatically scored if the technology is used. In addition, the time allocated to answer to the questions is equal.

Stiggins (2008) states that: “These once-a-year tests are not likely to be of much value to classroom teachers as you plan and carry out day-to-day instruction. They are assessments OF learning that are too infrequent, broad in focus, and slow in returning results to inform the ongoing array of daily decisions. But this does not mean that these tests are without purpose or value. They can communicate valuable information about students’ achievement status to other decision makers (pp. 347-348).”

According to Riffert, Franz, (2005), standardized testing is basically designed to establish the teachers, students, and schools accountability for academic accomplishment and to spearhead the improvement of teaching and learning. They provide a benchmark for assessing problems and measuring progress, highlighting areas for improvement. Despite these key benefits, the impact of effective learning is limited due to multiple factors according to Poulsen, J., Hewson, K. (2014). Some of these factors are (1) Situational/Environmental, (2) Personal/Emotional, (3) one-size-fits-all test, etc.

**Effects of Standardized Testing on Students**

Written: 02 July 2020 and extracted from [https://soeonline.american.edu/blog/effects-of-standardized-testing](https://soeonline.american.edu/blog/effects-of-standardized-testing)

Some of the challenging potential effects of standardized testing on students are as follows:

- Standardized test scores are often tied to important outcomes, such as graduation and school funding. Such high-stakes testing can place undue stress on students and affect their performance.
- Standardized tests fail to account for students who learn and demonstrate academic proficiency in different ways. For example, a student who struggles to answer a multiple-choice questions about grammar or punctuation may be an excellent writer.
- By placing emphasis on reading, writing, and mathematics, standardized tests have devalued instruction in areas such as the arts, history, and electives.
- Standardized tests are thought to be fair because every student takes the same test and evaluations are largely objective, but a one-size-fits-all approach to testing is arguably biased because it fails to account for variables such as language deficiencies, learning disabilities, difficult home lives, or varying knowledge of US cultural conventions.

**Effects of Standardized Testing on Teachers**

Teachers as well as students can be challenged by the effects of standardized testing. Common issues include the following:

- The need to meet specific testing standards pressures teachers to “teach to the test” rather than providing a broad curriculum.
- Teachers have expressed frustration about the time it takes to prepare for and administer tests.
- Teachers may feel excessive pressure from their schools and administrators to improve their standardized test scores.
- Standardized tests measure achievement against goals rather than measuring progress.

Achievement test scores are commonly assumed to have a strong correlation with teaching effectiveness, a tendency that can place unfair blame on good teachers if scores are low and obscure teaching deficiencies if scores are high.

**Achievement and Ability Tests**
According to iresearchnet.com, achievement tests are designed to evaluate the extent to which a learner has developed a specific required skill or learned a specific set of knowledge or has developed a set of abilities. Naturally, an achievement test is directed following a period of teaching designed to teach the motor or cognitive skill to be examined. In this case, and according to the above definition, we can say that classical standardised and performance-based tests can be considered as achievement tests.

On the other hand and according to iresearchnet.com, ability tests are more novel and complex. They are predictors of potential for academic success. Ability tests tap into a wider range of life experiences and look at whether students can apply what they know in new and different ways. They are used as a measure of someone’s general mental ability.

However, in psychology, the ability tests assess cognitive and motor skill sets that have been developed over a long period of time and that are not referable to any particular teaching programme. Furthermore, the ability tests are descriptive in that they assess people’s knowledge and skills, but they are also predictive because they measure qualities that are presumed to influence the person’s ability to learn new skills and to solve novel problems.

Case Studies – Cognitive Ability Tests

This case study is adapted from the Practice Aptitude Tests found at: https://www.practiceaptitudetests.com/cognitive-ability-tests/

Competency-based education is now a trend to address multiple challenges the education sector is facing today. For example, the aim of education at the elementary level is not only to achieve the 3 Rs, mainly Reading, writing and arithmetic but learners at that level are expected to develop other attributes, such as critical, creative and innovative thinking to be able to progress swiftly in their studies in this complex and very demanding 21st century. As the world is becoming more digital, another very important skill needs to be added to the list of skills and competences in the elementary level, namely digital literacy (Kai Beckmann, 2020).

In this case study, we have option to choose from for constructing questions on ability type of questions. The following are the areas of competence we can consider, the list is not exhaustive:

1. Numerical reasoning
2. Verbal reasoning
3. Logical reasoning

Numerical Reasoning

It is specifically designed to measure a candidate’s numerical aptitude and their ability to interpret, analyse and draw conclusions from sets of data. Unlike standardised maths tests, which demonstrate a student’s ability to learn and apply mathematical techniques based on a set syllabus, numerical reasoning tests reflect how successfully a candidate can apply numerical understanding in a realistic context.
Example:

Last year, the cost of bread was R 9.50. This year, the cost is R 12.00. Express in percentage the change in value.

**Verbal reasoning**

They evaluate your understanding of language and level of verbal comprehension and logic, plus how well you can filter key information from a bulk of text. Learners are usually presented with a written passage followed by a series of statements. Typically you must decide whether, based purely on what’s in the text, the statement is true, false or that you cannot say.

The question in this type can be used for the “Reading Comprehension” for a language course where the question assesses the learner ability to digest written information and then use the information provided to answer questions quickly and accurately.

Example:

COVID-19 is a factor influencing job loss in many businesses. Provide arguments to confirm or object to this statement using cases that you are aware of.

**Logical reasoning**

A logical reasoning test determines your ability to interpret information, and then to apply logic to solve problems and draw relevant conclusions. Typically it’s a timed non-verbal assessment with a multiple-choice format, and requires the use of rules and deduction to reach answers, rather than any prior knowledge. A logical reasoning test determines your ability to interpret information, and then to apply logic to solve problems and draw relevant conclusions. In addition, logical reasoning is actually an umbrella term for multiple types of assessment that can contain the following five test types:

1. **Deductive reasoning**

   Commonly presented as a series of word problems, deductive reasoning tests require you to apply top-down-logic; that is, you must draw the right conclusion from a set of given premises.

   Typically, you’ll be presented with a short paragraph, or stimulus, detailing an argument, scenario or a number of stated facts, and a set of possible answers. Only one of these answers can be true, based on the evidence provided.

   You may also be given a conclusive statement and asked to decide if it is true or false, or if there’s insufficient information to conclude either way.

2. **Inductive reasoning**

   Unlike deductive reasoning, inductive reasoning tests ask you to make general inferences – probable conclusions based on a set of information, rather than unquestionable outcomes.
This is most often done through the use of shapes, patterns, sequences and diagrams.

You’ll need to quickly identify relationships and rules, then apply these to find the most logical answer from the multiple-choice options. This could be identifying the odd one out, filling in the missing part of a pattern, or finding the next part of a sequence.

3. **Diagrammatic reasoning**

Similar to inductive reasoning, the diagrammatic reasoning tests offer visual representations of a problem and require you to make logical connections to draw a conclusion.

Questions often take the form of a diagram with inputs and outputs, and you’ll be required to select which processes from a list of operators would achieve the documented effect.

You may also be presented with sets of abstract sequences, given a standalone visual, and asked to select which set it belongs to.

4. **Abstract reasoning**

Abstract reasoning tests are essentially inductive and/or diagrammatic reasoning tests under another name.

They too require you to find relationships and rules between visual sequences, then apply these to select the correct image from multiple options, be it a missing part or a continuation of the sequence in question.

5. **Critical reasoning**

Critical reasoning tests are more akin to deductive reasoning tests, in that you’ll be dealing with word-based scenarios, arguments, evidence and conclusions.

These tests tend to evaluate a range of skills. Argument analysis is common, in which a question is posed, and a yes/no answer given with a supporting statement. You’ll need to decide whether the statement is a strong or weak argument.

Other question types involve scenarios and statements from which you’ll be asked to make assumptions, deductions and inferences based on the evidence provided.

Critical reasoning tests are most commonly used in sectors where evidence-based judgement is an everyday requirement, such as law.
Conclusion

In this paper, we looked at a variety of tests that can be used in a competency-based curriculum implementation. The type of test that is most popular is the standardised test, we did not provide an example in this paper but we will share separately two question papers, one from Uganda (English subject) and another one from Jamaica (Mathematics subject) that we will analyse together to determine the type of knowledge, skills and ability the paper is assessing. For the performance-based and standardised test, we looked at the impacts of these tests on the learners and teachers. We also added a case study adapted from Practice Aptitude Tests site that many educational institutions use as a reference to develop a question papers that assess competencies and standards. We will use this case study to develop a practical case of the competency-based curriculum implementation using the theoretical frameworks shared in different resources developed for this series of webinars.
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