Introductory Guide to Learning Outcomes Assessment Tools

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Introduction

Measuring learning outcomes is an essential part of the educational process, which leads to the student's progress, and especially the academic side. Despite this importance, indeed, it is believed that measuring learning outcomes always indicates the weakest link in the educational process, so it is necessary to have a procedural scientific evidence and some tools for measuring learning outcomes, to choose the appropriate ones, and to build them, and then you
Calculate what this guidebook provides will fill an important gap in this regard.

It is important to say that Al-Jouf University has encouraged to do this guidebook as part of a comprehensive plan that have prepared in light of the new developments
On the precautionary measures to prevent (COVID-19), and upon the directives of the Ministry of Education to respite the attendance of the students and to resume the study remotely through virtual classes; To achieve the best goals of the educational process .

Accordingly, this introductory guidebook provides a set of tools for measuring learning outcomes and performance in the near future, as alternatives to the semester tests as evaluation requirements listed in the course descriptions taking into consideration a set of criteria will be indicated in the guidebook.

Finally, we hope that this work contributes to improve the education system at Al-Jouf University in particular and other local and regional universities in general.

Goals of the guidebook

This guidebook is expected to achieve a number of goals for the course lecturer, **the most important of which are as follows**:

1- To know some of these effective measurement tools that can be applied electronically.

2-To choose the appropriate measurement tool for the suitable learning outcome.

3-To use a variety of measurement tools for specific learning outcomes.

4-To coordinate between achieving of the goal of the measuring instrument, and having a specific time for that, especially in the case of virtual classes.

General guidelines for using the learning outcome measurement tools presented in the Guidebook

1-Usine a set of standard measurement tools which are the same in each course, provided that this is the responsibility of the course coordinator in agreement with all teachers in other divisions.

2- Preparing a plan to measure the remaining learning outcomes - through the list of measurement tools included in this guidebook - to the end of the study in each course
Separately, the coordinator submits it to the department, and then to the dean of the college.

3 -Choosing the measurement tool in proportion to the nature of the learning outcomes that you measure, and the degree assigned to it according to the course description.

4-The measurement tools mentioned in this guidebookare applied only to learning outcomes that are achieved during the remote-education period.

5- If more than one tool is chosen to measure one or more specific learning outcomes, they must be applied to all students, in order to ensure equal opportunities.

6-Before you choose the measurement tool that will be included in the learning outcomes measurement plan, its criteria must be carefully reviewed and adopted.

Criteria for building this type of questions:

Objectivity:
1- They are prepared according to own specification schedule, or they are taken from a question bank prepared in light of a general specification table, taking into account their choice from the bank, the questions assigned to the learning outcome intended to be measured in the short test.
2-It measures specific learning outcomes.
3- Individual differences are considered.
4-Correcting them according to pervious scaled scale .

Standard Criteria

1-It fits the learning outcome you measure.
2-It measures the level of understanding which is required by the learning outcomes.

3-In multiple choice there are at least 4 options, the level of shading is graded in proportion to the level of learning outcome being measured.Options vary according to the cluster method.

4- In TRUE & FALSE questions:justify the true ones and correct false ones.

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Accuracy:

Each word in the question can only have one meaning.

The shading level of the options is controlled which Is really different from poor editing of the task.

Different tools for measuring learning outcomes:

The course lecturer can measure learning outcomes by using one or more of the following tools:

Short Quizzes- Closed ended questions

Tests consisting of a number of objective questions, which can only show one correct answer, and have several forms, the most common of which are: (Choose from
Multi - right and wrong - completing- pairing), they are called short; Because the time for answering them often ranges between 10 (20-20 minutes).

The most important characteristics:

1-   It is suitable for most courses. Because it often measures cognitive aspects, as well as the ability to measure cognitive perception of

  Skill and performance aspects.

2-   Accuracy and Objectivness when you measure the task according to tables and automatically correction.
   3- Cheap and fast, as it is possible to adopt question banks.
   4-Suitable for all students as it can be built in a way that show the individual differences.
   5- Various shapes.
   6-Valid for remote –learning according to some criteria.

4- Presentations and annotations.

- Students prepare an educational subject with annotations to measure their level of mastery of one or more specific learning outcomes and present them in the form of a presentation (Pp - Prize).
- The course professor can set some specifications for the presentation to achieve its goal. Then, the student who prepared the presentation will be tested through his assignment to present the material individually or collectively, and answer all questions that are asked during his presentation.

Advantages:

- It is appropriate to measure most course learning outcomes in most academic programs.
- In addition to cognitive learning outcomes, other soft skills outcomes are measured.
- Learning skills can be applied individually or collectively.
- It saves time and efforts.

Presentation design:

• It is to measure one or more learning outcomes.

• It is appropriate for the nature of the learning outcomes to be measured.

• All details related to the intended learning outcome are covered.

• A number of references are used in it, including the main reference and references on the assistance approved in describing the course.

• They are evaluated through quantitative and qualitative scale (Rubrics), as indicated above.

• In case more than one student participates in preparing the presentation, the role of each individual in preparing the educational material is determined.

- Measuring learning outcomes is not only through the evaluation of the assignment, but through the students' response to the questions related to the assignment.

• The evaluation questions must contain what measures the student's honesty, his actual role in preparing the subject, and the most important difficulties that he encountered, if any, and how he overcame those difficulties.

5- Scientific projects:

- Scientific projects are done by one or more students to prepare a concept for an integrated scientific project related to the subject to be evaluated, and the course professor can set some specifications for this.
- In order to fulfill its objective, those who prepared these scientific projects will be tested through the content they provided.
- In addition to being assigned to present the material individually or collectively, they are supposed to answer all questions asked by the course professor or their colleagues regarding the project.

Advantages:

- It is suitable for a large number of courses in various academic programs (theoretical, engineering or medical).
- It is suitable for measuring all learning outcomes (cognitive, skill, psychomotor, personality traits - communication and technology ..., etc.)
- It can be applied individually or collectively.

- It is flexible and easy to manage.

- It can measure individual differences between students.

- It can measure critical thinking skills.

- It encourages students with some difficulties and those with lower rate of achievement to improve their performance.

Scientific projects design:

• It is to measure one or more learning outcomes.

• It is appropriate for the nature of the learning outcomes you measure.

• It takes into account the size and type of the project in light of the allotted time.

• It takes into account the general conditions, the surrounding environment, and the regulations and laws regulating work in the university and the state.

• All details related to the intended learning outcome are covered.

● It uses various sources to collect data, not just scientific references in its traditional sense.

• Projects are evaluated in light of their terms through quantitative and qualitative scale (Rubrics) scale, as indicated above.

• In the event that more than one student participates in preparing the project proposal, it determines the role of each individual accurately, and this should be taken into account when assessing.

● Measuring learning outcomes not only by evaluating the project proposal submitted, but by answering questions related to everything they presented in the project outline or proposed visualization.

• The evaluation questions must contain what measures the student's honesty, his actual role in the project, the most important difficulties he faced - if any - and how they overcame the difficulties.

6- Writing brief scientific articles:

▪ The student writes a brief scientific article, through which the extent of one or more learning outcomes is achieved by the student, and this tool is applied individually, in a relatively short specific time, it ranges between (20 minutes - 30 minutes).

Advantages:

- It is suitable for most courses in all academic programs.

- Through it, more than one learning outcome can be measured simultaneously.

- Credibility can be achieved, as the students are assigned, and their responses are received during the lecture or the virtual semester itself, no later than 30 minutes.

- It considers individual differences between students.

- Flexibility and diversity: the course professor can assign students to write a number of various scientific articles, all of which serve the same learning outcome.

- It is economical, it saves time and effort on the course professor, where he can assign all students to write brief scientific articles to measure the learning outcome.

Design:

- It measures one or more learning outcomes.

- It covers all indicators related to the learning outcomes you measure.

- It provides the characteristics of scientific writing (language integrity), accuracy of terminology, centering on the intended learning outcome, depth and intensity, representational writing, persuasive writing, the approach that reflects the level of learning outcome, and the structure of the scientific article (introduction -body - conclusion).

• It helps students see the demand for the learning outcome to be written.

• It helps students see the demand for current controls, and submit samples.

• Assigning them to a pilot article, with the aim of training, whose results are not counted in the evaluation.

7- Reading comprehension scale

▪ It is a measure prepared by the course professor or one of the published standards used, and amendments are made to it if necessary, and it aims to measure reading comprehension upon request directly through assigning them to read a short text related to one or more learning outcomes in the course, and then subject them to the measure, once they have completed the reading process, and application of the scale range from (20 minutes - 30 minutes).

Features:

- It is valid for all courses in all academic programs.

- It is suitable for all learning outcomes, especially cognitive and perceptive, and the competencies they represent.

- It measures higher skills than thinking if the learning outcome supports it.

- It is valid for all reading texts, and it is modified only in proportion to the nature of the learning outcome intended to be measured.

- The learning outcome of one or more different reading texts can be measured.

- It can be applied to all students at one time, regardless of the variety and contents of the reading texts.

- Students may participate in suggesting specific reading texts.

- Flexibility, whereby the course professor can derive specific reading texts from the main reference, auxiliary references, or related free texts according to the regulations.

Design:

• The scale is considered in light of the learning outcomes intended to be measured taking into account the content of the reading text.

• In choosing the following reading text, the following should be taken into consideration:

- its focus on the intended learning outcome.

-       its suitability for the specified time.

-       its availability within the student's reach.

-        its accuracy

• The vocabulary of the scale measures all indicators related to the intended learning outcomes.

• Scale questions can be combined between closed-ended questions and open-ended questions. In the case of the last type, evaluation is carried out by a quantitative and qualitative gradient scale (Rubrics), taking into account its controls mentioned above.

8- Home TEST

It is an unmarked test - the student can take it anywhere he chooses, and the time limit extends (3-5) days, and it is considered one of the examples of the learner-centered evaluation, whose importance was confirmed by the results of studies that adopted constructivist theory in the learning process.

Features:

-       It is suitable for most courses in academic programs, especially medical, engineering, basic sciences, education, Sharia and law.

-       It is valid for all learning outcomes that require higher-order thinking skills and the competencies they represent.

-       It reduces stress, and reduces student anxiety.

-       Maintains lecture time; because there are learning outcomes that are difficult to measure in a short period of time, therefore, direct testing for them wastes a lot of teaching time.

-       It is a measurement, and a new learning experience at the same time.

-       It places the responsibility of learning to the student.

-       It gives the student sufficient time to invest his abilities and energies, and thus, it develops higher thinking skills.

-       Enhances student learning and achievement motivation.

-        It reduces the chances of a solution by guessing, which a student may have in the traditional time-limited test, as well as that the home test measures higher-order thinking skills that require complex mental processes in which no guesswork and lucky answers exist.

-       It is flexible in space and time.

-       The course instructor is encouraged to measure the learning outcomes extended in the course as a whole, which requires the student to be familiar with everything he has studied in the course.

Design

It should measure extended learning outcomes that require higher thinking skills, such as (analysis, reasoning, criticism, evaluation and creativity).

• The necessity of matching between what the test measures and the time specified for it.

• It is preferable to include a measurement of learning outcomes that require research in databases and libraries.

• The answer to the questions should require logical justifications, arguments and scientific evidence.

• Introduce quotation and transcription controls within the assessment and test score distribution.

• Electronically upload answers in a word file and use appropriate software to detect plagiarism.

• It is preferable to ask for some handwritten answers, to reduce the chances of transcription in answering the questions that some students might resort to.

Short Quizzes :Open-ended questions

Tests consisting of a number of questions open-ended essay questions, which have a typical answer, but are not framed with specific wording or words.

This type of testing is accompanied by a graded and quantified answer form (evaluation rules) for each question, through which the student answers are evaluated in five levels (5-excellent - 4 very good - 3 good - 2 weak - 1 very weak), and are placed in front of Each prescribed level has an answer for it, and then the course instructor assesses the student's response qualitatively in light of the graded scale objectively .It's short, because the time specified for answering them - meaning the test as a whole - isMostly between 10 (20 minutes).

The most important Characteristics:

• It is suitable for most courses in all academic programs. Because it often measures cognitive aspects, as well as the possibility of measuring cognitive perception of skills and performance aspects.
• Accuracy, objectivity and normative are measured according to what were set for it, if they are built according to standardized specifications tables, and evaluated according to the scale.
• You can adopt on question banks.
• They are suitable for all students, they are better than closed tests; Because it gives the student a greater opportunity to express whatever he/she wants and an opportunity to be creative.
• More care about individual differences compared to closed tests.
• No guesswork based answers.
• Through which learning outcomes that require level, and higher thinking skills, can be measured.
• Different forms.
• Valid for remote learning with some conditions.

• The formulation of answers on the scale at the lower levels does not mean that they are meaningful or misleading, but rather express the absence of elements.
The basic answer, which in its absence represented the weak or very weak level.

3. Short Direct Oral Quizzes

They are tests that represent one or both of the previous types, but it is applied orally. It is short; Because the specific time for each student to answer the question ranges from (one minute in closed-ended questions - 3 minutes in open-ended questions) taking into account the nature of
The question and the learning outcome it measures.

The most important characteristics

•It's Valid for measuring learning outcomes in most courses in different academic programs.

• It's Validate the results, as the student responds directly at a specific time.

• Measuring qualitative skills other than knowledge and perception, such as: (self-confidence - the ability to arrange and present ideas without prior preparation -

Response Speed – Utterance & Pronunciation etc.)

• Valid for measuring some learning outcomes related to interpersonal and communication skills ... (soft Skills).

Criteria for building this type of questions:

• It applies to all controls of closed-ended questions if they belong to this type.

• It applies to all open-ended question controls if they belong to this type.

• The need to standardize the type of questions for each application. It is not correct to measure the outcome of a specific learning for some students with closed-ended questions, and for others With open-ended questions.

• A single question is not repeated for more than one student in the one session designated for testing.

• The same question may be repeated to measure the outcome of a particular learning on another student, but later in the days after the end of the first test.

• Not all students are to be tested orally in one session, but the request can be distributed in groups, and tested via Various lectures.