Teacher-made assessment strategies

Kym teaches sixth grade students in an urban school where most of the families in the community live below the poverty line. Each year the majority of the students in her school fail the statewide tests. Kym follows school district teaching guides and typically uses direct instruction in her Language Arts and Social Studies classes. The classroom assessments are designed to mirror those on the statewide tests so the students become familiar with the assessment format.

When Kym is in a graduate summer course on motivation she reads an article called, “Teaching strategies that honor and motivate inner-city African American students” (Teel, Debrin-Parecki, & Covington, 1998) and she decides to change her instruction and assessment in fall in four ways:

- First, she stresses an incremental approach to ability focusing on effort and allows students to revise their work
several times until the criteria are met.

- Second, she gives students choices in performance assessments (e.g. oral presentation, art project, creative writing).
- Third, she encourages responsibility by asking students to assist in classroom tasks such as setting up video equipment, handing out papers etc.
- Fourth, she validates student’ cultural heritage by encouraging them to read biographies and historical fiction from their own cultural backgrounds.

Kym reports that the changes in her students’ effort and demeanor in class are dramatic: students are more enthusiastic, work harder, and produce better products. At the end of the year twice as many of her students pass the statewide test than the previous year.

Afterward, Kym still teaches sixth grade in the same school district and continues to modify the strategies described above. Even though the performance of the students she taught improved the school was closed because, on average, the students’ performance was poor. Kym gained a Ph.D and teaches Educational Psychology to preservice and in-service teachers in evening classes.

**action research.** This involves identifying a problem (e.g. low motivation and achievement), learning about alternative approaches (e.g. reading the literature), implementing the new approaches, observing the results (e.g. students’ effort and test results), and continuing to modify the strategies based on their observations.

assess students’ learning she tested them on the mathematics knowledge and skills she taught during the previous weeks. The test formats varied little and students always did them individually with pencil and paper.

**Basic concepts**

**Assessment** is an integrated process of gaining information about students’ learning and making value judgments about their progress (Linn & Miller, 2005). Information about students’ progress can be obtained from a variety of sources, including projects, portfolios, performances, observations, and tests. The information about students’ learning is often assigned specific numbers or grades and this involves **measurement.** Measurement answers the question, “How much?” and is used most commonly when the teacher scores a test or product and assigns numbers (e.g. 28 /30 on the biology test; 90/100 on the science project).

**Evaluation** is the process of making judgments about the assessment information (Airasian, 2005). These judgments may be about individual students (e.g. should Jacob’s course grade take into account his significant improvement over the grading period?), the assessment method used (e.g. is the multiple choice test a useful way to obtain information about problem solving), or one’s own teaching (e.g. most of the students this year did much better on the essay assignment than last year so my new teaching methods seem effective).

**Assessment for learning,** where the priority is designing and using assessment strategies to enhance student learning and development. Assessment for learning is often referred to as **formative assessment,** i.e. it takes place during the course of instruction by providing information that teachers can use to revise their teaching and students can use to improve their learning (Black, Harrison, Lee, Marshall & Wiliam, 2004).

**informal assessment** involving spontaneous unsystematic observations of students’ behaviors (e.g. during a question
and answer session or while the students are working on an assignment) and formal assessment involving pre-planned, systematic gathering of data.

Assessment of learning is formal assessment that involves assessing students in order to certify their competence and fulfill accountability mandates and is the primary focus of the next chapter on standardized tests but is also considered in this chapter. Assessment of learning is typically summative, that is, administered after the instruction is completed (e.g. a final examination in an educational psychology course). Summative assessments provide information about how well students mastered the material, whether students are ready for the next unit, and what grades should be given (Airasian, 2005).

Assessment for learning: an overview of the process

Step 1: Having clear instructional goals and communicating them to students

Step 2: Selecting appropriate assessment techniques

Step 3: Using assessment to enhance motivation and confidence

Step 4: Adjusting instruction based on information

for learning is that the teacher uses the information gained from assessment to adjust instruction. These adjustments occur in during lesson when a teacher may decide that students’ responses to questions indicate sufficient understanding to introduce a new topic, or that her observations of students’ behavior indicates that they do not understand the assignment and so need further explanation. Adjustments also occur when the teacher reflects on the instruction after the lesson is over and is planning for the next day. We provide examples of adjusting instruction in this chapter.

Step 5: Communicating with parents and guardians

Selecting appropriate assessment techniques: high quality assessments

For an assessment to be high quality it needs to have good validity and reliability as well as absence of bias.
Reliability

- First, assessments with more tasks or items typically have higher reliability.
- Second, clear directions and tasks help increase reliability.
- Third, clear scoring criteria are crucial in ensuring high reliability (Linn & Miller, 2005).

Absence of bias

- Two types of assessment bias are important: offensiveness and unfair penalization.

Selecting appropriate assessment techniques II: types of teacher-made assessments

Teachers’ observation, questioning, and record keeping

- The informal assessment strategies teachers most often use during instruction are observation and questioning.

Observation

Questioning

- planning and writing down the instructional questions that will be asked
- allowing sufficient wait time for students to respond
- listening carefully to what students say rather than listening for what is expected
- varying the types of questions asked
- making sure some of the questions are higher level
- asking follow-up questions

Table 36: Validity and reliability of observation and questioning (problem and strategies to alleviate the problem

Record keeping

The class of preschoolers in a suburban neighborhood of a large city has eight special needs students and four
students—the peer models—who have been selected because of their well-developed language and social skills. Some of the special needs students have been diagnosed with delayed language, some with behavior disorders, and several with autism.

The students are sitting on the mat with the teacher who has a box with sets of three “cool” things of varying size (e.g., toy pandas) and the students are asked to put the things in order by size, big, medium and small. Students who are able are also requested to point to each item in turn and say “This is the big one”, “This is the medium one” and “This is the little one”.

For some students, only two choices (big and little) are offered because that is appropriate for their developmental level. The teacher informally observes that one of the boys is having trouble keeping his legs still so she quietly asks the aid for a weighted pad that she places on the boy’s legs to help him keep them still. The activity continues and the aide carefully observes student’s behaviors and records on IEP progress cards whether a child meets specific objectives such as: “When given two picture or object choices, Mark will point to the appropriate object in 80 per cent of the opportunities.”

The teacher and aides keep records of the relevant behavior of the special needs students during the half day they are in preschool. The daily records are summarized weekly. If there are not enough observations that have been recorded for a specific objective, the teacher and aide focus their observations more on that child, and if necessary, try to create specific situations that relate to that objective. At end of each month the teacher calculates whether the special needs children are meeting their IEP objectives.

### Questions

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D

### Selected response items

**multiple choice, matching, and true/false items.** In selected response items students must select a response provided by the teacher or test developer rather than constructing a response in their own words or actions. Selected response items do not require that students recall the information but rather recognize the correct answer.

### Common problems

1. **Unclear wording in the items**

   • True or False: Although George Washington was born into a wealthy family, his father died when he was only 11, he worked as a youth as a surveyor of rural lands, and later stood on the balcony of Federal Hall in New York when he took his oath of office in 1789.

2. **Cues that are not related the content being examined.**
• A common clue is that all the true statements on a true/false test or the corrective alternatives on a multiple-choice test are longer than the untrue statements or the incorrect alternatives.

3. **Using negatives (or double negatives) the items.**

• A poor item. “True or False: None of the steps made by the student was unnecessary.”
• A better item. True or False: “All of the steps were necessary.”

4. **Taking sentences directly from a textbook or lecture notes.**

5. **Avoid trivial questions**

e.g. Jean Piaget was born in what year?

1. a) 1896
2. b) 1900
3. c) 1880
4. d) 1903

**Strengths and weaknesses**

• True/False items are appropriate for measuring factual knowledge such as vocabulary, formulae, dates, proper names, and technical terms. They are very efficient as they use a simple structure that students can easily understand, and take little time to complete. They are also easier to construct than multiple choice and matching items. However, students have a 50 percent probability of getting the answer correct through guessing so it can be difficult to interpret how much students know from their test scores. Examples of common problems that arise when devising true/false items are in Table 37.

<table>
<thead>
<tr>
<th>Table 37: Common errors in selected response items (type of assessment item/ common errors/ example)</th>
</tr>
</thead>
</table>

**Matching items**, two parallel columns containing terms, phrases, symbols, or numbers are presented and the student is asked to match the items in the first column with those in the second column. Typically, there are more items in the second column to make the task more difficult and to ensure that if a student makes one error they do not have to make another.

Matching items most often are used to measure lower level knowledge, such as persons and their achievements, dates and historical events, terms and definitions, symbols and concepts, plants or animals and classifications (Linn & Miller, 2005). An example with Spanish language words and their English equivalents is below:

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>
Multiple Choice items are the most commonly used type of objective test items because they have a number of advantages over other objective test items.

- Most importantly, they can be adapted to assess higher levels thinking such as application as well as lower level factual knowledge. The first example below assesses knowledge of a specific fact, whereas the second example assesses application of knowledge.

Who is best known for their work on the development of the morality of justice?

1. a) Erikson
2. b) Vygotsky
3. c) Maslow
4. d) Kohlberg

Which one of the following best illustrates the law of diminishing returns

1. a) A factory doubled its labor force and increased production by 50 per cent
2. b) The demand for an electronic product increased faster than the supply of the product
3. c) The population of a country increased faster than agricultural self sufficiency
4. d) A machine decreased in efficacy as its parts became worn out

(Adapted from Linn and Miller 2005, p, 193).

Table 38: Common errors in constructed response items

# Constructed response items

- Constructed response items can be used to assess a wide variety of kinds of knowledge and two major kinds are discussed: completion or short answer (also called short response) and extended response.

Completion and short answer

apart from their use in mathematics they are unsuitable for measuring complex learning outcomes and are
often difficult to score. Completion and short answer tests are sometimes called objective tests as the intent is that there is only one correct answer and so there is no variability in scoring but unless the question is phrased very carefully, there are frequently a variety of correct answers. For example, consider the item

Extended response

Essay questions. Extended response items have several advantages and the most important is their adaptability for measuring complex learning outcomes—particularly integration and application. These items also require that students write and therefore provide teachers a way to assess writing skills. A commonly cited advantage to these items is their ease in construction; however, carefully worded items that are related to learning outcomes and assess complex learning are hard to devise (Linn & Miller, 2005).

The owner of a bookstore gave 14 books to the school. The principal will give an equal number of books to each of three classrooms and the remaining books to the school library. How many books could the principal give to each student and the school?

Show all your work on the space below and on the next page. Explain in words how you found the answer. Tell why you took the steps you did to solve the problem.

From Illinois Standards Achievement Test, 2006;

Jose and Maria noticed three different types of soil, black soil, sand, and clay, were found in their neighborhood. They decided to investigate the question, “How does the type of soil (black soil, sand, and clay) under grass sod affect the height of grass?”

• Prediction of the outcome of the investigation
• Materials needed to do the investigation
• Procedure that includes:
  • logical steps to do the investigation
  • one variable kept the same (controlled)
  • one variable changed (manipulated)
  • any variables being measure and recorded
• how often measurements are taken and recorded (From Washington State 2004 assessment of student learning)

Writing prompt

Choose One:

□ I think schools should teach students how to cook

□ I think cooking should be taught in the home

I think cooking should be taught in ..............................because...........

(school) or (the home)
(From Illinois Measure of Annual Growth in English)

What are the nature, symptoms, and risk factors of hyperthermia?

Point Scoring Guide:

Definition (natures) 2 pts

Symptoms (1 pt for each) 5 pts

Risk Factors (1 point for each) 5 pts

Writing 3 pts

Scoring rubrics

Scoring rubrics can be holistic or analytical. In holistic scoring rubrics, general descriptions of performance are made and a single overall score is obtained. An example from grade 2 language arts in Los Angeles Unified School District classifies responses into four levels: not proficient, partially proficient, proficient and advanced is on Table 39.

Table 39: Example of holistic scoring rubric: English language arts grade 2

Analytical rubrics provide descriptions of levels of student performance on a variety of characteristics. For example, six characteristics used for assessing writing developed by the Northwest Regional Education Laboratory (NWREL) are:

- ideas and content
- organization
- voice
- word choice
- sentence fluency
- conventions


Holistic rubrics have the advantages that they can be developed more quickly than analytical rubrics. They are also faster to use as there is only one dimension to examine. However, they do not provide students feedback about which aspects of the response are strong and which aspects need improvement (Linn & Miller, 2005). This means they are less useful for assessment for learning. An important use of rubrics is to use them as teaching tools and provide them to students before the assessment so they know what knowledge and skills are expected.

- This strategy of assessment for learning should be more effective if the teacher:

(a) emphasizes to students why using accurate terminology is important when learning science rather than how to get a good grade on the test (we provide more details about this in the section on motivation later in this chapter)
(b) provides an exemplary response so students can see a model

c) emphasizes that the goal is student improvement on this skill not ranking students.

**Table 40: Example of a scoring rubric, Science** On the High School Assessment, the application of a concept to a practical problem or real-world situation will be scored when it is required in the response and requested in the item stem.

---

**Performance assessments**

- playing a *musical instrument*
- athletic *skills*
- artistic *creation*
- conversing in a *foreign language*
- engaging in a *debate about political issues*
- conducting an *experiment in science*
- repairing a *machine*
- writing a *term paper*
- using interaction *skills to play together*

**Alternative assessment** refers to tasks that are not pencil-and-paper and while many performance assessments are not pencil-and-paper tasks some are (e.g. writing a term paper, essay test).

- Alternative assessment also refers an assessment system that is used to assess students with the most significant cognitive disability or multiple disabilities that significantly impact intellectual functioning and adaptive behavior.

[Click here to watch the video on Dynamic Learning Maps assessment system](https://granite.pressbooks.pub/teachingdiverselearners/?p=284)

**Authentic assessment** is used to describe tasks that students do that are similar to those in the “real world”. Classroom
tasks vary in level of authenticity (Popham, 2005). For example, a Japanese language class taught in a high school in Chicago conversing in Japanese in Tokyo is highly authentic—but only possible in a study abroad program or trip to Japan. Conversing in Japanese with native Japanese speakers in Chicago is also highly authentic, and conversing with the teacher in Japanese during class is moderately authentic. Much less authentic is a matching test on English and Japanese words. In a language arts class, writing a letter (to an editor) or a memo to the principal is highly authentic as letters and memos are common work products.

- However, writing a five-paragraph paper is not as authentic as such papers are not used in the world of work.
- However, a five-paragraph paper is a complex task and would typically be classified as a performance assessment.

**Internet Resource on Performance Assessment**

The Inside Mathematics website has Performance Assessments Tasks for grades 2 through 8 and high school math (algebra, functions, geometry, statistics and probability, and number and quantity). The assessments are aligned to the Common Core Standards for Mathematics: [http://www.insidemathematics.org/performance-assessment-tasks](http://www.insidemathematics.org/performance-assessment-tasks) You may download and use these tasks for professional development purposes without modifying the tasks.

Jay McTighe and Associates have a Performance Tasks Blog Series - What is a Performance Task? [jaymctighe.com/2015/04/what-is-a-performance-task/](jaymctighe.com/2015/04/what-is-a-performance-task/) Seven characteristics of Performance Tasks and a few examples are included.

**Advantages and disadvantages**

**Performance assessments** (Linn & Miller 2005). First, the focus is on complex learning outcomes that often cannot be measured by other methods. Second, performance assessments typically assess process or procedure as well as the product. For example, the teacher can observe if the students are repairing the machine using the appropriate tools and procedures as well as whether the machine functions properly after the repairs. Third, well designed performance assessments communicate the instructional goals and meaningful learning clearly to students. For example, if the topic in a fifth-grade art class is one-point perspective the performance assessment could be drawing a city scene that illustrates one-point perspective. This assessment is meaningful and clearly communicates the learning goal. This performance assessment is a good instructional activity and has good content validity—common with well-designed performance assessments (Linn & Miller 2005).

- One major disadvantage with performance assessments is that they are typically very time consuming for students and teachers. This means that fewer assessments can be gathered so if they are not carefully devised fewer learning goals will be assessed—which can reduce content validity.

- performing complex movement combinations to music in a variety of meters and styles
- performing combinations and variations in a broad dynamic range
- demonstrating improvement in performing movement combinations through self-evaluation
- critiquing a live or taped dance production based on given criteria

- Another disadvantage of performance assessments is they are hard to assess reliably which can lead to inaccuracy and unfair evaluation. As with any constructed response assessment, scoring rubrics are very...
important.

Table 41: Example of group interaction rubric

middle grade science, but could be used in other subject areas when assessing group process. In some performance assessments, several scoring rubrics should be used. In the dance performance example above Eric should have scoring rubrics for the performance skills, the improvement based on self-evaluation, the team work, and the critique of the other group.

- **Create performance assessments that require students to use complex cognitive skills.** Sometimes teachers devise assessments that are interesting and that the students enjoy but do not require students to use higher level cognitive skills that lead to significant learning. Focusing on high level skills and learning outcomes is particularly important because performance assessments are typically so time consuming.

- **Ensure that the task is clear to the students.** Performance assessments typically require multiple steps so students need to have the necessary prerequisite skills and knowledge as well as clear directions. Careful scaffolding is important for successful performance assessments.

- **Specify expectations of the performance clearly by providing students scoring rubrics during the instruction.** This not only helps students understand what it expected but it also guarantees that teachers are clear about what they expect. Thinking this through while planning the performance assessment can be difficult for teachers, but is crucial as it typically leads to revisions of the actual assessment and directions provided to students.

- **Reduce the importance of unessential skills in completing the task.** What skills are essential depends on the purpose of the task. For example, for a science report, is the use of publishing software essential? If the purpose of the assessment is for students to demonstrate the process of the scientific method including writing a report, then the format of the report may not be significant. However, if the purpose includes integrating two subject areas, science and technology, then the use of publishing software is important. Because performance assessments take time it is tempting to include multiple skills without carefully considering if all the skills are essential to the learning goals.

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**Portfolios**

“A portfolio is a meaningful collection of student work that tells the story of student achievement or growth” (Arter, Spandel, & Culham, 1995, p. 2).

When the primary purpose is assessment for learning, the emphasis is on student self-reflection and responsibility for learning.

*Portfolios can be designed to focus on student progress or current accomplishments.*
Portfolios can focus on documenting student activities or highlighting important accomplishments.

A final distinction can be made between a finished portfolio—maybe used to for a job application—versus a working portfolio that typically includes day-to-day work samples.

Advantages and disadvantages

• When reliability is low, validity is also compromised because unstable results cannot be interpreted meaningfully.

Steps in implementing a classroom portfolio program

• Talk to your students about your ideas of the portfolio, the different purposes, and the variety of work samples. If possible, have them help make decisions about the kind of portfolio you implement.

• Will the focus be on growth or current accomplishments? Best work showcase or documentation? Good portfolios can have multiple purposes, but the teacher and students need to be clear about the purpose.

• For example, in writing, is every writing assignment included? Are early drafts as well as final products included?

  Decide where the work sample will be stored. For example, will each student have a file folder in a file cabinet, or a small plastic tub on a shelf in the classroom?

• If possible, work with students to develop scoring rubrics. This may take considerable time as different rubrics may be needed for the variety of work samples. If you are using existing scoring rubrics, discuss with students’ possible modifications after the rubrics have been used at least once.

• Help students learn to evaluate their own work using agreed upon criteria. For younger students, the self-evaluations may be simple (strengths, weaknesses, and ways to improve); for older students, a more analytic approach is desirable including using the same scoring rubrics that the teachers will use.

• Teacher-student conferences are time consuming, but conferences is essential for the portfolio process to significantly enhance learning. These conferences should aid students’ self-evaluation and should take place frequently.

• Parents need to understand the portfolio process. Encourage parents to review the work samples. You may wish to schedule parent, teacher-students conferences in which students talk about their work samples.

Source: Adapted from Popham (2005)

Assessment that enhances motivation and student confidence

• More recent research indicates that teachers’ assessment purpose and beliefs, the type of assessment selected, and the feedback given contributes to the assessment climate in the classroom which influences students’ confidence and motivation. The use of self-assessment is also important in establishing a positive assessment climate.

Teachers’ purposes and beliefs

incremental view assumes that ability increases whenever an individual learns more. This means that effort is valued because effort leads to knowing more and therefore having more ability. Individuals with an incremental view also ask for help when needed and respond well to constructive feedback as the primary goal is increased learning and
Choosing assessments

First, assessments that have clear criteria that students understand and can meet rather than assessments that pit students against each other in interpersonal competition enhances motivation (Black, Harrison, Lee, Marshall, Wiliam, 2004). This is consistent with the point we made in the previous section about the importance of focusing on enhancing learning for all students rather than ranking students.

Second, meaningful assessment tasks enhance student motivation. Students often want to know why they have to do something and teachers need to provide meaningful answers. For example, a teacher might say, “You need to be able to calculate the area of a rectangle because if you want new carpet you need to know how much carpet is needed and how much it would cost.” Well-designed performance tasks are often more meaningful to students than selected response tests so students will work harder to prepare for them.

Third, providing choices of assessment tasks can enhance student sense of autonomy and motivation according to self-determination theory. Kym, the sixth-grade teacher whose story began this chapter, reports that giving students choices was very helpful. Another middle school social studies teacher Aaron, gives his students a choice of performance tasks at the end of the unit on the US Bill of Rights. Students have to demonstrate specified key ideas, but can do that by making up a board game, presenting a brief play, composing a rap song etc.

Providing feedback

Self and peer assessment

Adjusting instruction based on assessment

Communication with parents and guardians

Action research: studying yourself and your students

Cycles of planning, acting and reflecting

Action research is usually described as a cyclical process with the following stages (Mertler, 2006).

- Planning Stage. Planning has three components. First, planning involves identifying and defining a problem. Problems sometimes start with some ill-defined unease or feeling that something is wrong and it can take time to identify the problem clearly so that it becomes a researchable question. The next step, is reviewing the related literature and this may occur within a class or workshop that the teachers are attending. Teachers may also explore the literature on their own or in teacher study groups. The third step is developing a research plan. The research plan includes what kind of data will be collected (e.g. student test scores, observation of one or more students, as well as how and when it will be collected (e.g. from files, in collaboration with colleagues, in spring or fall semester).

- Acting sage. During this stage, the teacher is collecting and analyzing data. The data collected and the analyses do not need to be complex because action research, to be effective, has to be manageable.
• Developing an action plan. In this stage, the teacher develops a plan to make changes and implements these changes. This is the action component of action research and it is important that teachers document their actions carefully so that they can communicate them to others.

Communicating and reflection. An important component of all research is communicating information. Results can be shared with colleagues in the school or district, in an action research class at the local college, at conferences, or in journals for teachers. Action research can also involve students as active participants and if this is the case, communication may include students and parents. Communicating with others helps refine ideas and so typically aids in reflection. During reflection teachers/researchers ask such questions as: “What did I learn?” “What should I have done differently?” “What should I do next?” Questions such as these often lead to a new cycle of action research beginning with planning and then moving to the other steps.

**Ethical issues—privacy, voluntary consent**

Grading and reporting

**How are various assignments and assessments weighted?**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly quizzes</td>
<td>35 per cent</td>
</tr>
<tr>
<td>Homework</td>
<td>15 per cent</td>
</tr>
<tr>
<td>Performance Assessment</td>
<td>30 per cent</td>
</tr>
<tr>
<td>Class participation</td>
<td>20 per cent</td>
</tr>
</tbody>
</table>

**Should social skills or effort be included?**

**How should grades be calculated?**

**What kinds of grade descriptions should be used?**

• writing narratives
• writing responses to literature
• writing information reports
• writing summaries


## Chapter summary

### Key terms

<table>
<thead>
<tr>
<th>Absence of bias</th>
<th>Authentic assessment</th>
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<tbody>
<tr>
<td>Action research</td>
<td>Constructed response items</td>
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<td>Alternative assessment</td>
<td>Evaluation</td>
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<td>Formative assessment</td>
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<td>Summative assessment</td>
<td>Validity</td>
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### References:

**Ebook**


[https://youtu.be/Ltr6SV8zbn0](https://youtu.be/Ltr6SV8zbn0)