Advances in the Assessment of Students’ Clinical Competence

Triple Jump Exercise

College of Medicine
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February 14 2012
Triple Jump Exercise
Outline of Session

- Who first developed this assessment technique, and why?
- What is the ‘Triple Jump Exercise’?
- What do we know about the Triple Jump Exercise 35 years later?
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Who first developed this assessment technique, and why?

- **Who?** McMaster University, Canada, around 1974 (ref: Neufeld, Norman)
- **Why?** A search for more standardized assessment techniques that could be used to assess skills that were the focus of problem-based learning curricula
  - Problem definition
  - Hypothesis generation
  - Application of existing knowledge
  - Ability to identify knowledge gaps
  - Efficient and effective self-directed learning
  - Self-assessment
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What is the ‘Triple Jump Exercise’? It is ...

- A one-on-one oral examination.
- An assessment of clinical reasoning/decision making, self-directed learning, and self-assessment skills.
- An assessment that entails 3 distinct steps.
What is the ‘Triple Jump Exercise’?

Step 1

A student ‘thinks aloud’ through their analysis of a case (paper case or case presented by an examiner role-playing the patient)

Enables an assessment of hypothesis generation and problem definition through the application of existing knowledge, and the identification of knowledge gaps
What is the ‘Triple Jump Exercise’?

Step 2

Student spends time in independently searching out relevant information and in further problem analysis.

Enables an assessment of the degree to which the student be efficient and effective as a self-directed learner?
What is the ‘Triple Jump Exercise’?

Step 3

Student returns to the examiner, who assesses the student’s efficiency/effectiveness as a self-directed learner?

How well has the student filled in the knowledge gaps identified in step 1? Can the student more effectively synthesize the patient data in defining the patient’s problem(s)?
Step 3

- The student can be asked to ...
  - Describe their information search
  - Explain how search priorities were set
  - Identify the resources used
  - Identify the new knowledge obtained, relate it to the problem, and explain how this knowledge increases their understanding of the problem
  - Present a final analysis of the problem
What is the ‘Triple Jump Exercise’?

Step 3
Student returns to the examiner in this step, who assesses the student’s efficiency/effectiveness as a self-directed learner?

How well has the student filled in the knowledge gaps identified in step 1? Can the student more effectively synthesize the patient data in defining the patient’s problem(s)?

The examiner and the student each complete an assessment form, which are then compared for consistency.
Example: Standard Format *

- **Step 1:** Assessor presents (via role play or in writing) a case of a 25 y-o woman with calf pain on exercise, elicits hypotheses or a differential diagnosis from the student, and helps (as needed) the student identify areas where the student lacks knowledge needed to effectively define the patient’s problem.
- **Step 2:** Independent study re: knowledge deficits.
- **Step 3:** Assessor listens to and probes the students’ improved understanding of the patient’s problem as a result of the extra knowledge gained. Both complete an assessment form.

*From: The Good Assessment Guide, Joint Centre for Education in Medicine, London, 1997*
Example: Clinical Format

- **Step 1:** Student conducts an initial work-up on a real (e.g., hospitalized) patient, and presents it to his/her clinical supervisor. Supervisor elicits a differential diagnosis from the student, and helps the student identify areas of knowledge deficiency.

- **Step 2:** Independent study re: knowledge deficits.

- **Step 3:** Clinical supervisor meets with the student, listens to and probes the students’ improved understanding of the patient’s problem as a result of the extra knowledge gained.
Example: Use of Research Data

- **Step 1:** Present a case (orally or in writing) of a 40 y-o woman who wants to start a family, and who presents to her GP to discuss her concerns about the risks of birth defects.
- **Step 2:** Provide students with a sample of (e.g., 2) research papers related to the risks of birth defects in older women -- all students read the same papers.
- **Step 3:** Each student then meets with a simulated patient, to answer her questions about her risks of birth defects. The goal of the patient encounter is to test the student’s ability to correctly apply the research results to counselling in a specific case.
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What do we know about the Triple Jump Exercise 35 years later?

- Since the 1970s -- limited (research) literature on this technique.
- Unpublished reports from McMaster University and reports at national meetings identify major limitations in its ‘utility’ (U), where \( U = f(V, R, E, A, C) \)
  - Lack of examiner calibration and consistency
  - Case specificity – lack of reliability due to limited sampling
  - Cost – examiner time
- Major strength is likely as a formative assessment – analysis of and feedback on clinical reasoning, independent study, and self-assessment skills
- The general impression is – limited use and usefulness, especially as a summative assessment
Summary: The Triple Jump Exercise ...

- Was created in a PBL context to assess ‘hard to assess’ skills in a standardized manner – e.g.,
  - Hypothesis generation
  - Ability to self-identify knowledge gaps
  - Efficient and effective self-directed learning
  - Self-assessment
- Was created as a form of oral examination, but can also be presented using written, real or simulated patient cases
- Can also be used in clinical and research contexts
- Has been shown to possess significant measurement limitations, and has not ‘caught on’ as a mainstream assessment technique
The Steps in Developing a Triple Jump Exercise (TJE)

1. Prepare the case
2. Prepare the analysis of the Case
3. Prepare the TJE Assessment Form
I often talk about the Triple Jump. I describe it as the worst mistake I ever made (and that's against a backdrop of far too many others)!

Dr. Geoff Norman