Assessment for (not of) Learning

SLO Symposium 2022
Competency & Equitable Learning
28 January 2022
kosten
1. die Kosten (pl.)
2. kostbar

krank
1. die Krankheit, —en

cow

think

magnificent

splendid
glorious

kennen
1. kennen-gekannt
2. kennen-lernen
3. erkannten
4. kennen

das Kind, —(e)s, —en
1. kindisch
2. kindlich

der Kellner, —s, —
1. der Keller, —s

428

455

377
35% retained after 1 week
we only guarantee they’ll pass the test
assessment focussed on ranking and classifying, not on developing 21st century skills
purposes
purposes

problems
1. purposes
2. problems
3. improvements
how many different purposes of assessment can you think of?
1. rate students
2. rate professor and course
3. motivate students to keep up with work
4. provide feedback on learning to students
5. provide feedback to instructor
6. provide instructional accountability
7. improve teaching and learning
purposes

problems
1 purposes
2 problems

inauthentic tests
what is the meaning/definition of...?
inauthentic problem solving
1 purposes
2 problems
1 purposes
2 problems

problem
outcome
purposes

1. problem

2. solutions

outcome

KNOWN

EDUCACION

1. purposes

2. problems
1 purposes
2 problems

problem solution outcome

UNKNOWN KNOWN
1 purposes

2 problems

- problem
  - solution
  - outcome

- problem

UNKNOWN

KNOWN
1 purposes
2 problems
1. purposes
2. problems
1 purposes

2 problems
On a Saturday afternoon, you pull into a parking lot with un-metered spaces near a shopping area. You circle around, but there are no empty spots. You decide to wait at one end of the lot, where you can see (and command) about 20 spaces.
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How long do you have to wait before someone frees up a space?
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How long do you have to wait before someone frees up a space?

Requires:
Assumptions
Developing a model
Applying that model
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Requires:
Assumptions
Developing a model
Applying that model
On a Saturday afternoon, you pull into a parking lot with un-metered spaces near a shopping area. You circle around, but there are no empty spots. You decide to wait at one end of the lot, where you can see (and command) about 20 spaces. **On average people shop for 2 hours.**

How long do you have to wait before someone frees up a space?

Requires:

Assumptions

Developing a model

Applying that model
On a Saturday afternoon, you pull into a parking lot with un-metered spaces near a shopping area. You circle around, but there are no empty spots. You decide to wait at one end of the lot, where you can see (and command) about 20 spaces. On average people shop for 2 hours.

Assuming people leave at regularly-spaced intervals, how long do you have to wait before someone frees up a space?

Requires:

Assumptions
Developing a model
Applying that model
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Requires:
Assumptions
Developing a model
Applying that model
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How long do you have to wait before someone frees up a space?

\[ t_{\text{wait}} = \frac{T_{\text{shop}}}{N_{\text{spaces}}} \]
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How long do you have to wait before someone frees up a space?

$$t_{\text{wait}} = \frac{T_{\text{shop}}}{N_{\text{spaces}}}$$
computers can do this!

1 purposes
2 problems
1 purposes

2 problems
REAL problem solving
grading incompatible with real problem solving

1 purposes
2 problems
1 purposes
2 problems
isolation

1 purposes
2 problems
We will use spherical coordinates:

\[ 0 \leq \varphi \leq \frac{\pi}{2}, \quad 0 \leq \theta \leq 2\pi, \quad -\pi \leq \varphi \leq \pi. \]

The integral is thus:

\[
\int_{\varphi=0}^{\pi/2} \int_{\theta=0}^{2\pi} \int_{\varrho=0}^{\infty} \varrho^2 \sin \theta \, d\varrho \, d\theta \, d\varphi = 0.
\]
high-stakes examinations promote cramming

1 purposes

2 problems
information stored in short-term memory
1 purposes
2 problems

information stored in short-term memory
no retention
no transfer
grades: measure of standing relative to others
grades: measure of standing relative to others
feedback: reflection on what has been learnt

1 assessment
2 problems
assessment produces a conflict
assessment produces a conflict
coach or judge?
conflict resolved by:

objectivity (fairness, reliability)

1. purposes
2. problems
... but ...
REMEMBERING
UNDERSTANDING
APPLYING
ANALYZING
EVALUATING
CREATING

1 purposes
2 problems
only lowest order thinking skills can be judged objectively
and then there is…

- grade inflation
- cheating
1 purposes
2 problems
3 improvements
mimic real life
open-book exam

1. purposes
2. problems
3. improvements
1 purposes
2 problems
3 improvements
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**Immediate Feedback Assessment Technique (IFAT)**

- **Name:** Team #3
- **Test:** #1
- **Total:** 23

1. **purposes**
2. **problems**
3. **improvements**

SCRATCH OFF COVERING TO EXPOSE ANSWER
1 purposes
2 problems
3 improvements
Session 389314

This is the individual round; work on these questions on your own.

expression question

What is the derivative of $f(x) = 3x^2 - 6x$?

Submit response

Enter an expression, e.g., $x^2$ for $x^2$, $\ln(y)-\sin(x)$ for $\ln y - \sin x$, $x/(y+1)$ for $\frac{x}{y+1}$, $(1/2)x$ for $\frac{1}{2}x$. Do not enter a complete equation.

Current team: Blue team  👥 Change team  ✤ Change seat  ✉️ Send a message to the instructor  ⚡ Join another

1 purposes  2 problems  3 improvements
This is the individual round;

expression question

What is the derivative of $f(x) = 3x^2 - 6x$?

Enter an expression, e.g., $x^2$ for $x^2$, $\ln(y) - \sin(x)$ for $\ln y - \sin x$. 
This is the individual round;

**expression question**

What is the derivative of \( f(x) = 3x^2 - 6x \)?

6x - 6

Submit response

Enter an expression, e.g., \( x^2 \) for \( x^2 \), \( \ln(y) - \sin(x) \) for \( \ln y - \sin x \).
expression question

What is the derivative of \( f(x) = 3x^2 - 6x \)?

Enter an expression, e.g., \( x^2 \) for \( x^2 \), \( \ln(y) - \sin(x) \) for \( \ln y - \sin x \).
1 purposes
2 problems
3 improvements
focus on feedback, not ranking
objective ranking: a myth
Aristotelian thinkers

1 purposes
2 problems
3 improvements
top performers, broad grade distribution

![Graph showing conceptual understanding vs final grade]
objectivity or injustice?

conceptual understanding

final grade

0 10 20 30

80
60
40
20
0

A

C

1 purposes
2 problems
3 improvements
focus on skills, not content
Grant Wiggins and Jay McTighe, *Understanding by Design* (Prentice Hall, 2001)

1. purposes
2. problems
3. improvements
Traditional approach to course planning

1. purposes
2. problems
3. improvements
Traditional approach to course planning

1. purposes
2. problems
3. improvements

course content ➔ assessment
Traditional approach to course planning

1. purposes
2. problems
3. improvements

course determined by content

- course content
- assessment
Backward design

1 purposes
2 problems
3 improvements

desired outcomes
Backward design

1. purposes
2. problems
3. improvements
Backward design

1 purposes
2 problems
3 improvements

instructional approach → acceptable evidence → desired outcomes
Backward design

1. purposes
2. problems
3. improvements

course defined by outcomes

instructional approach
acceptable evidence
desired outcomes
Backward design

1. purposes
2. problems
3. improvements

Course defined by outcomes

Instructional approach → Acceptable evidence → Desired outcomes
resolve coach/judge conflict
use external evaluators
peer- and self-assessment

1. purposes
2. problems
3. improvements
Calibrated Peer Review

cpr.molsci.ucla.edu

1. purposes
2. problems
3. improvements
For a copy of these slides:

ericmazur.com

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