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Standards-Based Assessment in a Developmental Math Course

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Standards-Based Assessment in a Developmental Math Course

Abstract
Learn why we decided to try standards-based instruction in an undergraduate, developmental algebra course and what we learned in the process.

Keywords
educational evaluation, standards, teaching strategies

Disciplines
Higher Education | Mathematics

Comments
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Standards-Based Assessment in a Developmental Math Course

Dr. Valorie Zonnefeld
Michal Huizenga
Aaron Van Beek
Kate Van Weelden
Introductions

Dr. Valorie Zonnelfeld
Michal Huizenga
Aaron Van Beek
Kate Van Weelden
Developmental Math

- Completing a college-level math course is a common roadblock for many students (Topper, 2011).
- The ‘gatekeeper to achieving a college degree’ (Bryk & Treisman, 2010).
- “math should be a gateway, not a gatekeeper, to a successful college education” (p. 1).
Mathematics for College

• Students Enrolled
  ➢ MATH ACT <18
  ➢ 24 students
  ➢ 4 Teacher Assistants

• Must pass Math 100 in their freshmen year
Mathematics for College

Meeting times

• 4 credits
  - Class 3x per week, MWF
    • Learning Style
  - Labs 2x per week, TTh
    • Extra support
    • Standards Quiz
    • Homework help
1.2A) Convert 9 ft to inches

\[
\frac{9 \text{ ft}}{\text{yd}} = \frac{9 \times 36 \text{ in}}{1 \text{ yd}} = 324 \text{ in}
\]

Convert 233 grams to ounces

\[
\frac{233 \text{ g}}{454 \text{ g/oz}} = 0.518 \text{ oz}
\]

2.2C) \(2(w+4) - 1 = 1\)

\[
2w + 8 - 1 = 1
\]

\[
2w + 7 = 1
\]

\[
2w = -6
\]

\[
w = -3
\]

\[
3 - (r - 1) = 2(r + 1) - r
\]

\[
3 - (r - 1) = 2r + 2 - r
\]

\[
3 - r = 2r + 2 - r
\]

\[
3 - r = r
\]

\[
r = 1
\]

2.3C) \(5(m - 1) - 6(m + 3) = 4 - m\)

\[
5m - 5 - 6m - 18 = 4 - m
\]

\[
5m - 5 - 6m = 22 - m
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\[
5m - 5 - 6m = 22 - m
\]

\[
18 + 5
\]

\[
5m - 6m = 22 - m
\]

\[
5m - 6m = 22 - m
\]

\[
5m - 6m = 22 - m
\]

\[
-11m = 27
\]

\[
m = -27
\]
Standards-Based Design

• Selected Standards
• Homework Policy
• Assessment Strategy
• Reassessment Ticket
• Reassessing Limits
In what ways has this course helped to fulfill Dordt’s mission?

Helped me try to keep positive outlook on learning.

It has helped me to gain a more positive outlook on math.

Taught me that you can be good at math when you think you aren’t.

It was the 1st positive math experience I have ever had.
Which course assignments, activities, and/or teaching methods were most helpful for your learning?

The standards and Board work

The Standard Assessments and the use of the smart board in class

I loved the standards; I have never felt more confident in math.

The standards were so helpful. I enjoyed the TA sessions.

Standards

Assignments.
IDEA Ratings of Student Satisfaction

- Progress on Relevant Objectives
- Excellent Teacher
- Excellent Course
- Average
- Summary Evaluation

Traditional Standards
Average Grade Comparison

Quizzes /Standards

$p < .0001$

$p < .0001$

$p < .0001$

$n_{Traditional} = 65$, $n_{Standards} = 11$
### Organizational Strategies

#### Unit 1: Name

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<th>Form A</th>
<th>Form B</th>
<th>Form C</th>
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Questions?