


MINNESOTA STATE UNIVERSITY MANKATO 

Evaluating the Educational Potential of iPad Math Applications

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Big ideas. Real-world thinking.

Agenda

- Introduction
- Method
- Results and Discussion
- Limitations
- Future Research

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Previous Research

- Benefits
 - ❖ Individualized instruction
(Draper-Rodriguez, Strnadova, & Cumming, 2014; Hutchison, Beschoner, & Schmidt-Crawford, 2012)
 - ❖ Interactive instruction
(Larson, 2010; Marsh, 2010; Mayer, 2005; Shank, 2005)
 - ❖ Increase participation and engagement
(Messinger-Willman & Marino, 2010; Means, Toyama, Murphy, Bakia, & Jones, 2010)
 - ❖ Mixed findings
(Means et al., 2010; Hutchison et al., 2012)

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Purpose of Study

- 18-item questionnaire
 - Integration of iPads into the classroom
 - Recommended apps
- Compare apps recommended by teachers to app qualities recommended by research

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Purpose of Study

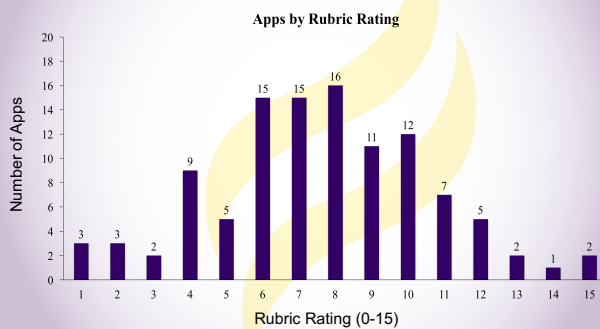
- Rubric
 - Type of skill practice
 - Levels of difficulty
 - Level advancement
 - Type of feedback
 - Ability to collect data
- Hypothesis: positive correlation between an app's number of recommendations and rubric score

Method

	0 Poor Quality	1 Fair Quality	2 Good Quality	3 High Quality
Type of Skill Practice	None	Drill Format	Gaming Format	Problem Solving Format
Adjustable Levels of Difficulty	Only 1 level or multiple levels without increasing difficulty	2-3 levels of increasing difficulty	4 levels of increasing difficulty	5+ levels of increasing difficulty
Level Advancement	None Same level of difficulty throughout	Moves forward with correct and incorrect responses	Moves forward with correct responses only	Moves forward or backwards based on student responses
Feedback	None	Indicates incorrect responses only	Indicates correct and incorrect responses	Indicates correct and incorrect responses and is corrective
Data Collection	None	Percentages/stars only No printing or saving	Number of correct and incorrect responses No printing or saving	Number of correct and incorrect responses with printing or saving

(Cashwell, Skinner, & Smith, 2001; Wigfield et al., 2008; Hromek & Roffey, 2009; O'Brien, Wood, & Hitt, 2015; Brush & Saye, 2002; Granott, 2005; Henning, Verhaegh, & Resing, 2011; Alves de Lima, 2008; Harkin et al., 2016)

Results and Discussion



Results and Discussion

Top 10 Recommended Apps

App Name	Recommendations
IXL – Math and English	66
Lexia	20
Myon	14
Scootpad	10
Flash to Pass	9
Spelling City	9
Tumblebooks on Wheels	9
Educreations Interactive Whiteboard	8
HMH Readers	8
Sushi Monster	8

Top 10 Rated Apps

App Name	Rubric Rating
IXL – Math and English	15
Xtra Math	15
Line em Up	14
abcmouse.com	13
Worlds Worst Pet	13
Pirate Treasure Hunt	12
PreK & Kindergarten Splash Math	12
Reading Eggs	12
Rocket Speller	12
Splash Math – Grades 1 to 5	12

Results and Discussion

- IXL - Math and English
- Positive correlation ($r_{s(108)} = .203, p = .018$)
- Small relationship
 - Variation in recommendation frequency not accounted for by app quality

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Limitations

- Data from survey
 - Limited number of responses
 - Only 2 districts – both in Mankato area
 - Relies on self-reporting

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Future Research

- More responses
- More than just Mankato
- May consider more than self-report data

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Questions?

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