Hypothesis identification article analysis

Hypothesis Identification Article Analysis (I1)Sarah MartinRES 342September 15, 2010Stephen LoroHypothesis Identification Article Analysis (I1)??? The need to understand and be able to use mathematics in everyday life and in the workplace has never been greater and will continue to increase??? (NCTM, 2000, p. 4). Background: The article used for this paper was ??? An Inquiry into Teacher Implementation of NCTM Standards in the Kindergarten through Second Grade Instructional Setting??? written by Greta Harmon Loeber.

The study ??? investigated the relationship between teacher??™s implementation of the National Council of Teachers of Mathematics (NCTM) and student achievement on Exemplars, a performance-based assessment, in a suburban elementary school in the southeastern United States??? (Loeber, 2008). Between 2006 and 2007, the state of Georgia implemented a new curriculum in kindergarten through second grade. They called it Georgia Performance Standards (GPS).

??? The GPS are designed to achieve a balance of concepts, skills, and problem solving, and the rigor and depth of knowledge is far greater than the previous curriculum??? (Loeber, 2008). Research Problem: The problem studied in this research was the need of an efficient way to measure classroom implementation of NCTM standards as well as the influence best practices in instruction have on student achievement. Research Question: The research question in this study is, what is the relationship between teachers??™ implementation of the NCTM standards and student achievement on Exemplars, a performance-based assessment, in a suburban elementary school in the southeastern United StatesHypothesis: Null

HypothesisThere is no relationship between teachers??™ implementation of mathematics and student achievement on Exemplars.

Alternative HypothesisThere is a relationship between teachers??™ implementation of mathematics and student achievement on Exemplars. Significance: The level of significance for this study was p > . 05. The significance was approaching the significant level at p = . 07. Research Design: Greta Loeber followed a process when doing her research.

First, she had to collect and analyze quantitative data using a self-report survey. Next, she had to collect and analyze qualitative data using observation. For the third part of her research, she figured exemplars scores for the quantitative data collected. As a final point, she interpreted the whole analysis. Statistical Package for Social Sciences (SPSS) software was used to calculate descriptive statistics, correlations, ANOVA, and the Scheffe. Limitations: When doing this research, Greta Loeber limited her research to kindergarten through second grade teachers and students.

The test subjects for this research came from an elementary school of approximately 1, 000 students. In addition, it was limited to those who implemented the GPS during 2006-2007. Raw Data: Appendix D Teacher| Standards Implementation Rank| Dim 1 Score| Dim 2 Score| Dim 3 Score| Dim 4 Score| Dim 5 Score| Dim 6 Score| Dim 7 Score| Dim 8 Score| Dim 9 Score| Survey Total| Survey Mean Score| Exemplar Mean| 1| 1| 10| 14| 5| 9| 11| 16| 9| 5| 10| 89| 9.

89| 2. 72| 2| 2| 9| 15| 4| 12| 16| 18| 12| 5| 11| 102| 11. 33| 3. 00| 3| 3| 14| 17| 4| 12| 17| 18| 12| 3| 11| 108| 12. 00| 3. 00| 4| 3| 16| 15| 5| 10| 18| 17| 11| 4| 12| 108| 12.

00| 3. 00| 5| 1| 12| 15| 4| 12| 14| 16| 10| 3| 11| 97| 10. 78| 3. 00| 6| 2| 13| 13| 4| 10| 16| 18| 11| 4| 11| 100| 11. 11| 2. 56| 7| 2| 14| 16| 5| 10| 14| 18| 9| 3| 12| 101| 11. 22| 2.

81| 8| 1| 8| 16| 5| 10| 16| 16| 9| 6| 12| 98| 10. 89| 2. 94| 101| 1| 8| 14| 4| 11| 15| 16| 10| 5| 11| 94| 10. 44| 2. 65| 102| 1| 12| 14| 5| 9| 14| 15| 9| 4| 11| 93| 10. 33| 2. 90| 103| 3| 12| 17| 5| 11| 13| 18| 11| 5| 12| 104| 11.

56| 3. 38| 104| 3| 15| 16| 5| 11| 15| 16| 12| 5| 12| 107| 11. 89| 2. 90| 105| 1| 9| 14| 4| 12| 13| 12| 9| 1| 9| 83| 9. 22| 2. 89| 106| 2| 13| 16| 5| 9| 14| 17| 9| 5| 12| 100| 11. 11| 2.

79| 107| 2| 12| 17| 5| 10| 13| 16| 9| 5| 12| 99| 11. 00| 2. 84| 108| 3| 16| 18| 5| 12| 12| 18| 12| 3| 12| 108| 12.

00| 3. 15| 201| 2| 12| 13| 4| 12| 16| 18| 9| 3| 11| 98| 10. 89| 3. 00| 202| 2| 14| 14| 3| 12| 15| 15| 11| 3| 12| 99| 11.

00| 2. 80| 203| 3| 10| 16| 5| 10| 18| 14| 10| 5| 12| 100| 11. 11| 2. 85| 204| 1| 13| 14| 3| 9| 13| 14| 10| 3| 11| 90| 10. 00| 3.

05| 205| 2| 12| 16| 4| 11| 17| 17| 10| 1| 11| 99| 11. 00| 2. 55| 206| 1| 12| 12| 4| 10| 15| 15| 10| 5| 11| 94| 10. 44| 2. 70| 207| 3| 14| 15| 5| 11| 13| 18| 10| 5| 11| 102| 11.

33| 3. 00| Descriptive Statistics: Self-report surveys were given to 23 teachers for each of the three grades during week one. Once returned, the raw data was entered into an excel spreadsheet. The survey scores positioned the teachers into the range of implementation.

This survey showed slightly different range of scores. Because of this, each grade was treated as separate entities when determining the range of implementation. ??? Kindergarten scores ranged from 89-108, first grade scores ranged from 83-108, and second grade scores ranged from 90-102.

The lowest possible level of implementation was 20, and the highest was 120 (Loeber, 2008). Each teacher administered and graded Exemplars for their class and recorded them on the school database. Table 1 Descriptive Statistics for Implementation| Descriptives| Exemplar| | N| Mean| Standard Deviation| Standard Error| Groups| Low| 8| 2. 86| 0.

15| 0. 05| Medium| 8| 2. 79| 0. 17| 0. 06| High| 7| 3.

04| 0. 18| 0. 07| Total| 23| 2. 89| 0. 19| 0.

04| Table 6 Descriptives Kindergarten| Descriptives| Exemplar| | N| Mean| Standard Deviation| Standard Error| Groups| Low| 3| 2. 88| 0. 15| 0. 09| Medium| 3| 2. 79| 0. 04| 0. 03| High| 2| 3.

00| 0. 24| 0. 14| Total| 8| 2. 88| 0. 16| 0. 06| Table 9 Descriptives First Grade| Descriptives| Exemplar| | N| Mean| Standard Deviation| Standard Error| Groups| Low| 3| 2.

81| 0. 14| 0. 08| Medium| 2| 2.

82| 0. 04| 0. 03| High| 3| 3. 14| 0. 24| 0. 14| Total| 8| 2. 94| 0. 23| 0.

08| Table 12 Descriptives Second Grade| Descriptives| Exemplar| | N| Mean| Standard Deviation| Standard Error| Groups| Low| 2| 2. 88| 0. 25| 0. 18| Medium| 3| 2.

78| 0. 23| 0. 13| High| 2| 2.

93| 0. 11| 0. 08| Total| 7| 2. 85| 0. 18| 0. 07| Table 14 Correlation Matrix for Exemplars and the Nine Dimensions of the Self-Report Survey| Exemplars| | All Grades| Kindergarten| First Grade| Second Grade| Dim 1| 0. 23| -0.

01| 0. 42| 0. 26| Sig. (2 tails)| 0. 30| 0.

99| 0. 30| 0. 57| | | | | Dim 2| 0. 49| 0. 71| 0. 42| 0. 06| Sig.

(2 tails)| 0. 02*| 0. 05*| 0. 30| 0. 90| | | | | Dim 3| 0. 19| -0. 07| 0.

45| 0. 00| Sig. (2 tails)| 0.

38| 0. 87| 0. 26| 1. 00| | | | | Dim 4| 0. 30| 0. 64| 0. 41| -0. 12| Sig.

(2 tails)| 0. 17| 0. 09| 0.

31| 0. 79| | | | | Dim 5| -0. 23| 0. 42| 0. 32| -0. 56| Sig. (2 tails)| 0.

29| 0. 30| 0. 44| 0. 19| | | | | Dim 6| 0. 18| -0. 15| 0. 42| 0. 05| Sig.

(2 tails)| 0. 40| 0. 73| 0. 31| 0. 91| | | | | Dim 7| 0. 30| 0.

29| 0. 45| -0. 32| Sig. (2 tails)| 0. 17| 0.

48| 0. 26| 0. 49| | | | | Dim 8| 0. 08| -0. 06| -0. 09| 0. 36| Sig. (2 tails)| 0.

70| 0. 88| 0. 83| 0. 42| | | | | Dim 9| 0. 22| 0. 11| 0. 47| -0.

09| Sig. (2 tails)| 0. 32| 0. 79| 0. 24| 0. 84| | n = 23| n = 8| n = 8| n = 7| | p = . 02| p = . 05| p > .

05| p > . 05| Statistical Methods: The researcher for this study used Pearson correlation to approach significance, while using ANOVA to reveal significance. Post hoc comparisons using Scheffe was used to reveal a significant difference between medium and high levels of implementation.

??? The Scheffe? was chosen as the post hoc test since it is considered the most cautious of the post hoc tests and requires more evidence to produce significance??? (Gravetter and Wallnau, 2005). Findings: The statistics showed that there were eight teachers in each low and medium level and seven in the high level of implementation. In addition, it showed the mean, standard deviation, and standard error (Table 1). Of the kindergarten teachers, the statistics showed that there were three teachers in each low and medium level and two in the high level of implementation. The mean exemplars do not follow in a linear progression.

It showed that there was no difference between teachers??™ level of implementation and student scores (Table 6). The first grade statistics showed that there were three teachers in each low and high level and two in the medium level of implementation. The mean exemplars show a slight linear progression. It showed that there was no difference between the first grade groups (Table 9). And lastly, the second grade statistics showed that

there were two teachers in each low and high level and three in the medium level of implementation. The mean exemplars do not follow in a linear progression identical to the kindergarten scores. Identical to kindergarten, it showed that there was no difference between the second grade groups (Table 12).

After conducting this study, Greta Loeber accepted the null hypothesis. She decided this because the Pearson did not show a significant difference. ReferenceGravetter, F., & Wallnau, L.

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