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Does Homework Help in Assessment Preparation at the College Level?

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Project Background

- Comparison of assessment data of students who complete all homework, some homework, or no homework
- Comparison of these groups between math and reading intensive courses

Math Intensive Course Background

- Surveying with Soil and Water Applications
- Began with 72 students; 65 remained at end of semester
- Course required weekly assignments of a computational nature
- Three exams and a final

Reading Intensive Course Background

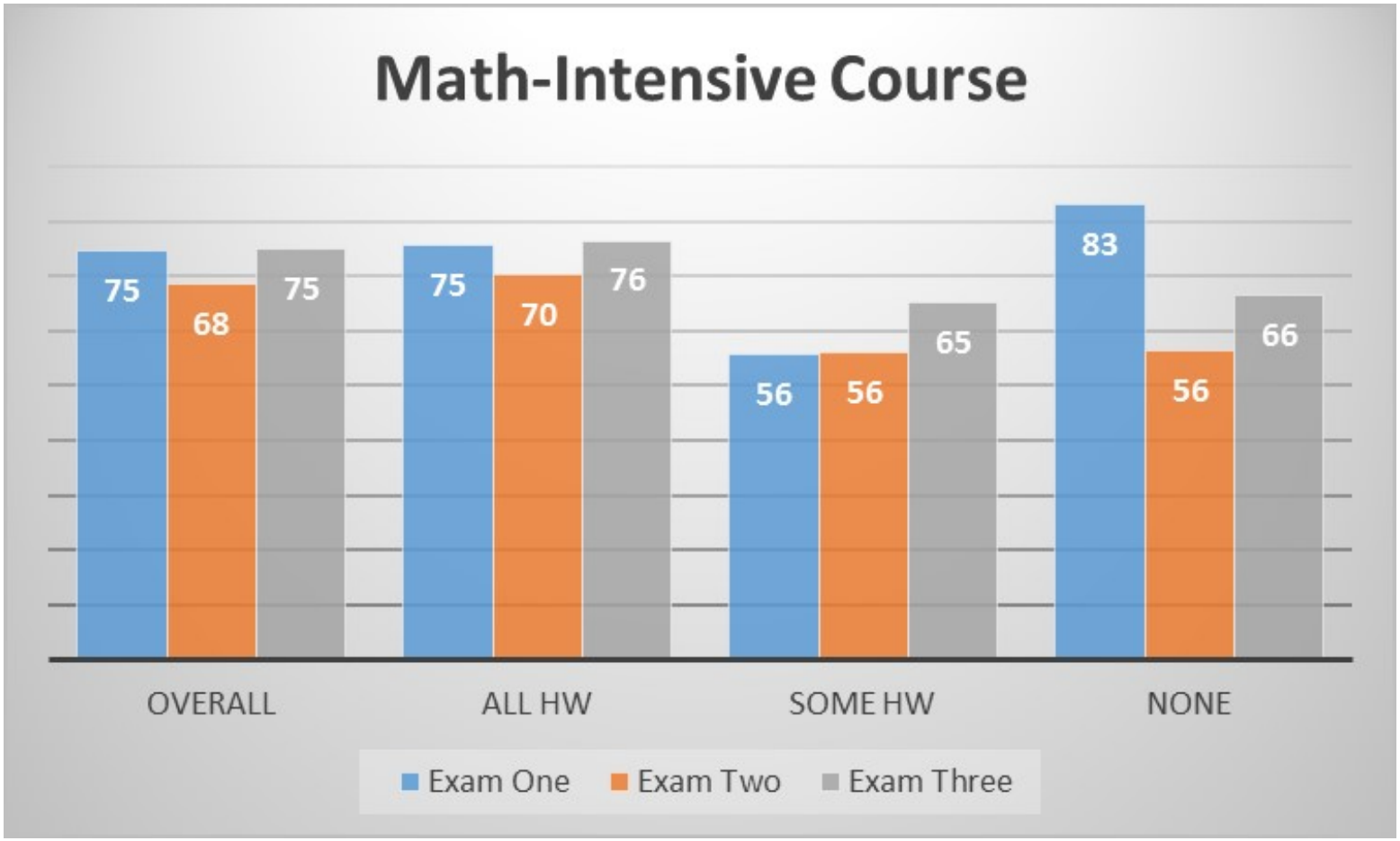
- History of American Agriculture
- Began with 40 students; 35 remained at end of semester
- Course required weekly out of class supplemental readings
- Weekly quizzes to assess reading comprehension
- Two exams (mid term and final)

Existing Literature on Homework and Learning

- Homework has been linked to better test scores in high school and, to a lesser degree, in middle school (Weir, 2016)
- No strong evidence has been found for an association between the homework–achievement link and the outcome measure (grades as opposed to standardized tests) or the subject matter (reading as opposed to math) in a review of research from 1987-2003. (Cooper et al, 2006)
  - Reviewed approximately 68 articles

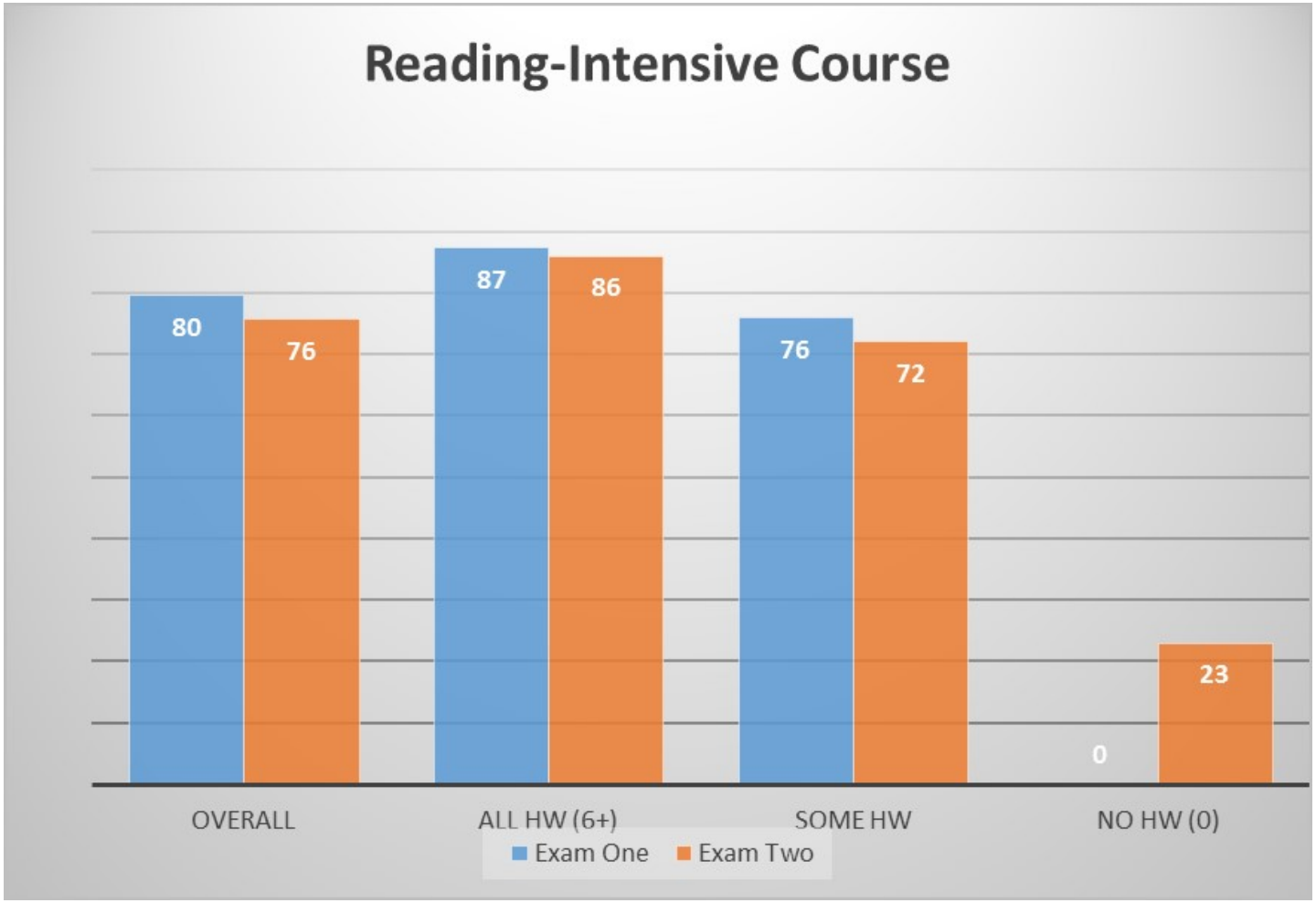
- Inconclusive results in the research.
- In all the studies, future research is recommended.
- None of the research found dealt with college age students

Findings: Math Intensive Course



- * Exam One: Only two students did not complete any homework and one of them scored a 99 on the exam.

Findings: Reading Intensive Course



Findings: Math vs. Reading

- Raw Exam Scores
  - Math course exam scores ranged from 14-19 points difference between those who completed all homework and those who did not
  - Reading course exam scores ranged from 11-63 points difference between those who completed all homework and those who did not
- ANOVA Single Factor Analysis
  - Compared students who had completed each level of assignments
  - Reading Course
    - P=0.868
    - No statistical significance
  - Math Course
    - P=0.444
    - No statistical significance

Conclusions and Implications

- Raw Exam Scores
  - The actual grades indicate completing at least part of the homework can cause an increase in a letter grade on the exam
  - Larger gaps existed in exam scores for reading intensive students versus math intensive students. Possible reasons why:
    - Math intensive content often required conceptualization of a definitive answer (yes/no)
    - Reading intensive content required students to conceptualize content that could be more ambiguous in nature. In other words, there was not always a definitive answer
  - Completing homework was more vital to academic outcomes in reading intensive course rather than math intensive course
- Anova Results
  - The p-values indicate there is no significance between students who completed homework versus those who did not ($p>0.05$)

Recommendations

- Continue giving assignments outside of class
- Encourage students to complete the assignments to prepare them for exams
- Share the information from this study with students early on in class to encourage them to complete assignments

References

- Cooper, Harris, Jorgianne Civey Robinson, and Erika A. Patall. Spring 2006. “Does Homework Improve Academic Achievement? A Synthesis of Research,1987–2003”. *Review of Educational Research, Vol. 76, No. 1, pp. 1–62.*
- Weir, Kirsten. March 2016. “Is homework a necessary evil?”, American Psychological Association, Vol 47, No. 3, page 36.

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Questions?