Daily Homework: A Study-Skills Strategy

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2018 AAPT NATIONAL CONFERENCE, WASHINGTON, DC

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Rational

Often times in science courses homework problems are assigned in block sets that represent content throughout a particular topic. Students are encouraged to look over these problems following each lecture as a study aid for the material presented. More often than not, students wait until the due date for these problems sets to begin their attempts; resulting in a flurry of questions, concerns, and misunderstandings.

As a result of these frustration, I made the switch from these homework blocks to smaller daily assignments that represent content from an individual lecture.

Assignment Strategy

There are several purposes to implementing the daily homework strategy:
- to provide feedback for me, as the instructor, to modify subsequent learning activities and experiences
- to identify and remediate any deficiencies
- to move focus away from achieving grades and onto learning processes, in order to increase self efficacy and reduce the negative impact of extrinsic motivation
- to improve students' metacognitive awareness of how they learn
- frequent, ongoing assessment allows both for fine-tuning of instruction and student focus on progress (formative assessment)
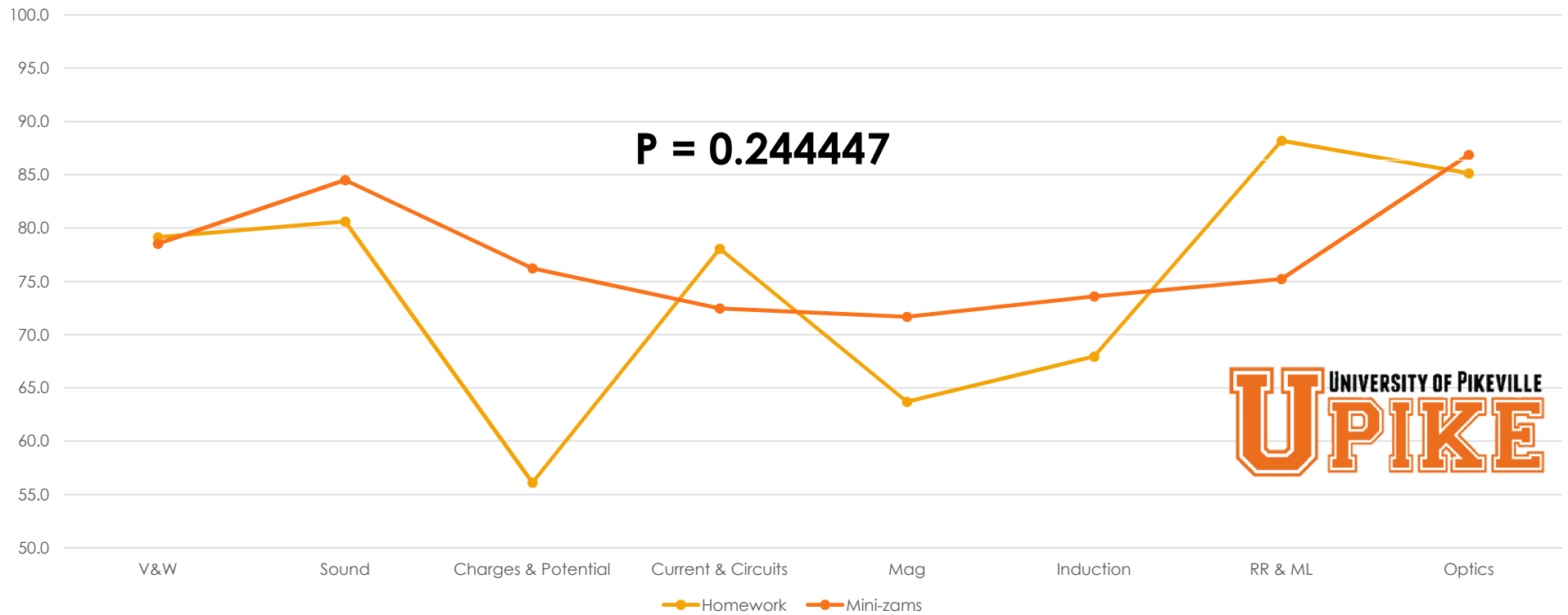
Assignment Format

In order to provide a consistent format with the daily quiz I administer (the Mini-Zam), each of these daily homework assignments is ALWAYS one multiple choice question AND one open response question related to that day's lecture material. They are generally posted in an online system within a few hours following the end of class. The online system permits multiple attempts at a problem with a small deduction for each attempt after the first.
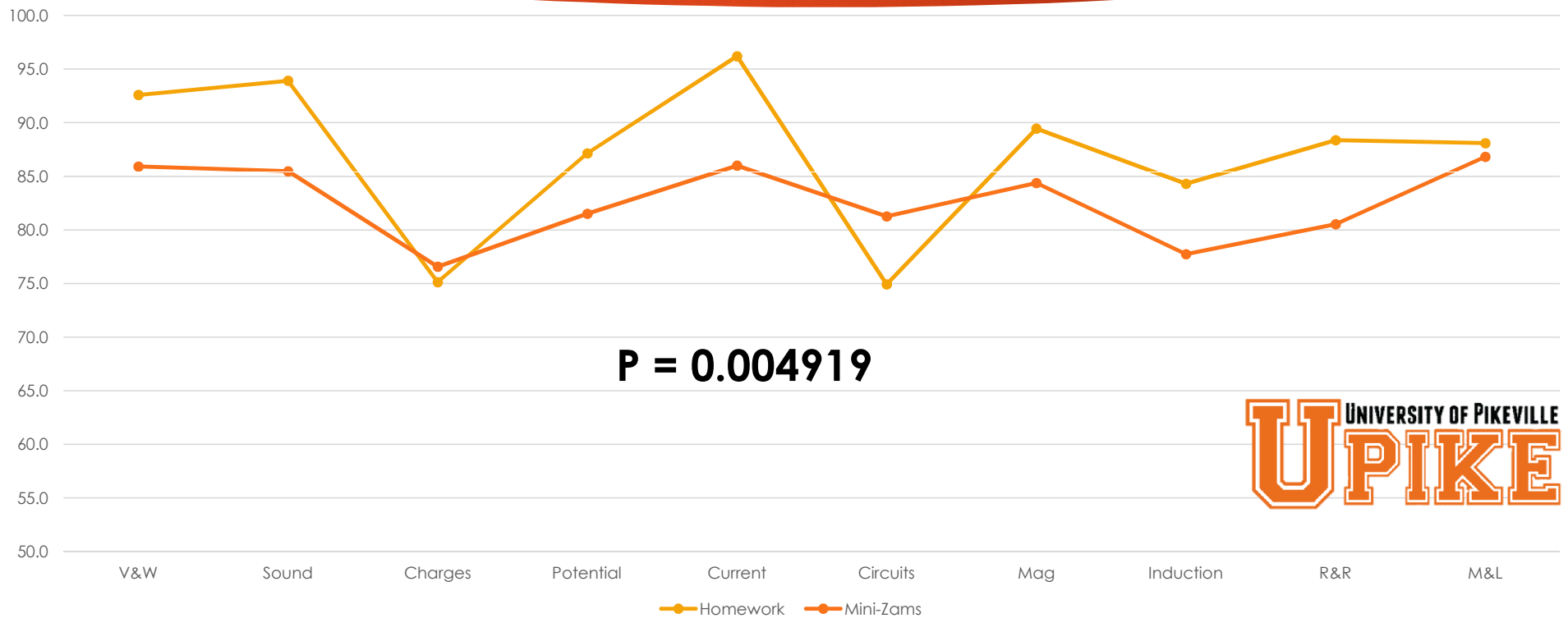
For further consistency with the Mini-Zams:
- Each of the Multiple Choice problems is worth up to 10 points
- Each of the Open Response problems is worth up to 25 points
- As such, EVERY homework assignment is worth up to 35 points.

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A look at a term using block homework

A look at a term using daily homework

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Results

	Block HW	Daily HW
HW Average	74.9%	87.5%
MZ Average	77.4%	82.6%
Mean Difference	-2.5%	4.9% (6.9%)*
Final Exam Average	75.05	70.1%
Final Course Average	80.9%	85.9%
		* = w/o C&C

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Conclusions

➢ **Seems as if there is something interesting in the daily homework with regard to the charges and the circuits material. Inspection of the data shows that about 7% of charges homework was not completed. Removing these zeros does shift the completed HW average to 80.4% which is a +3.8% difference form the Mini-zam.**

> ➢ **Circuits, on the other hand…who knows!**

➢ **Overall though, there does appear to be a distinct advantage to the daily homework in terms of assessment performance.**