

Exploring the Teaching and Learning of Functions

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03/25/2022

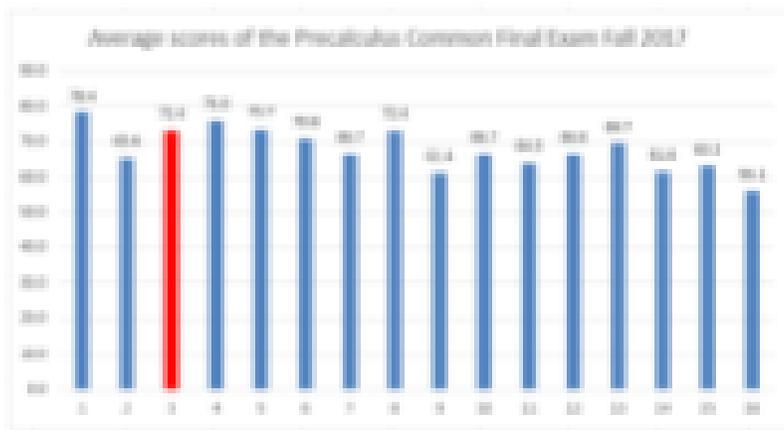
Teaching-experiment

- ✓ Development of Student Notes for Precalculus with emphasis on
 - the concept of function and
 - families of functions
- ✓ Use of a holistic and developmental approach of the teaching and learning of functions
- ✓ A semester-long teaching-experiment was conducted to examine precalculus students' understanding of the concept of function and families of functions to improve their conceptualizations in a holistic and developmental approach.

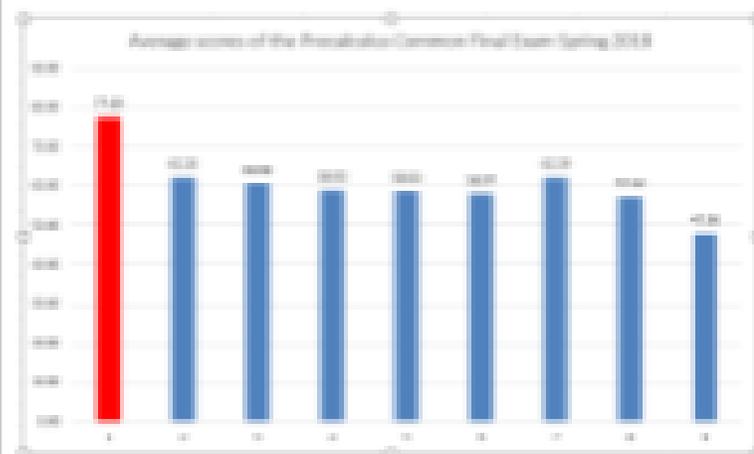
Teaching-learning intervention

- ✓ The project's teaching-learning intervention includes:
 - a. scaffolding of the curriculum through tasks that guide inquiry, reading, interpretation, writing, and reflection; it refocuses the traditional course content to emphasize both the concept of function and the invariances of functions across families as well as problem solving in real-world applications;
 - b. scaffolding students' involvement on their own learning;
 - c. constant academic support for each of the four pretest-test-posttest sequences on each family of functions.

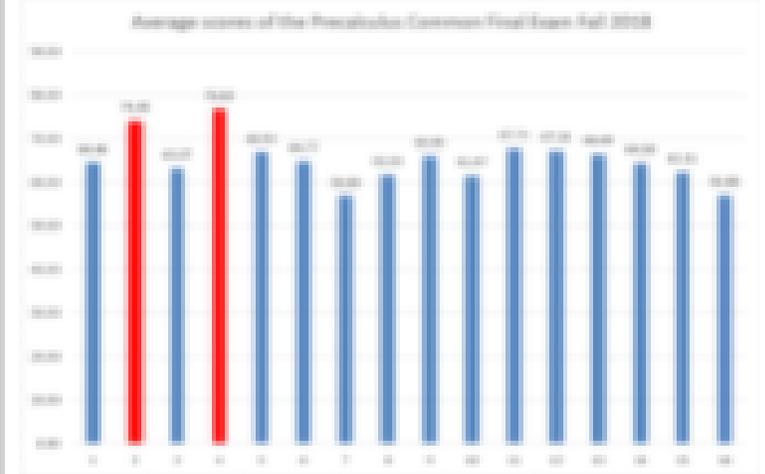
Before the teaching-experiment



FALL 2017

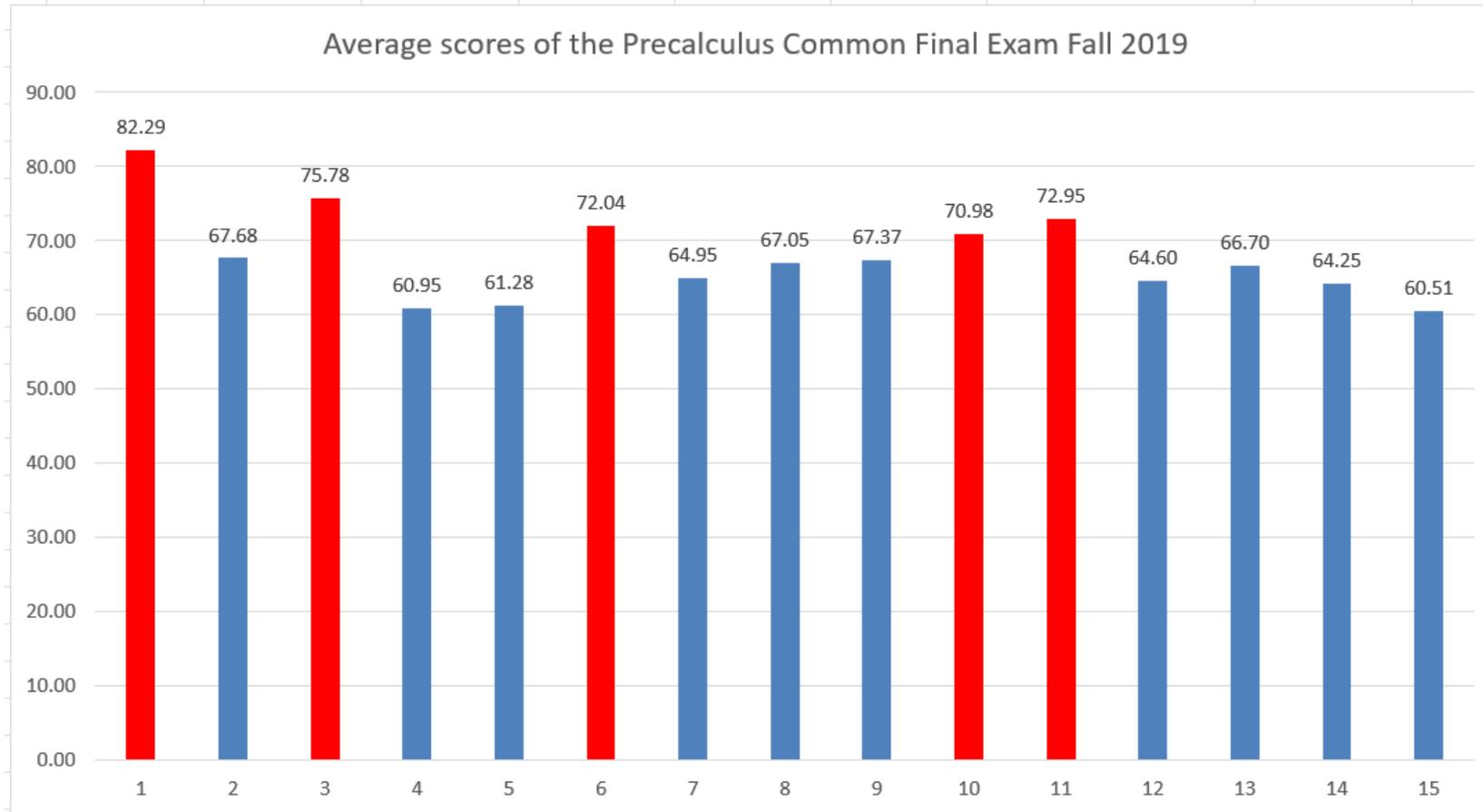


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Effectiveness of teaching-learning intervention



Next steps after the teaching-experiment

✓ Further research study

- Students' performance in Calculus after their participation in the teaching-experiment

✓ Maybe all Precalculus instructors could use the Student Notes which include inquiry-base-designed activities

- to facilitate the emergence of connected meanings of the concept of function and operations with them in functions families and
- to generate connected meanings for inverse and reciprocal functions.

✓ We can provide access to the Student Notes for Precalculus, if you want to see how we represent and connect the concepts in functions