Impacts of Teaching Practices on Student Self-Efficacy in Online Precalculus

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Pop Quiz Question
#1

What is self-efficacy?
Self-Efficacy: belief in one’s ability to learn
Course designed with embedded resources

- Softchalk Lessons
- Desmos Activities (interactive)
- Videos
- Powerpoints
- WebAssign Quizzes/ HW
- Groupwork/Discussion Boards
Can you collect data on student work without permission from students?
No (not if you want to share aggregate data with colleagues by publishing a paper or presenting at a conference). A signed, **informed consent form** is required from all students whose data will be used in the research study. Wake Tech also required an Institutional Review Board (**IRB**) form to be submitted.

https://forms.gle/5rvAwukcpKHEsFW28


• Students who say “I can’t do math.” or “I’m just not a math person.”
A Scale for the Measurement of Self-efficacy for Learning (SEL) at University Jane E. Klobas, Stefano Renzi, Maria Luisa Nigrelli Working Paper No. 2 URL: www.dondena.unibocconi.it/wp2 September 2007, Carlo F. Dondena Centre for Research on Social Dynamics, Università Bocconi

Pre/Post Survey

- Measured the change in student self-efficacy
- Called them: “Early Learning Survey” & “End of Semester Learning Survey”
- [https://forms.gle/esdfPm67t9aJ32Yq8](https://forms.gle/esdfPm67t9aJ32Yq8)
1. What resources (pick the top 3 and rank them) are most helping you to learn the course concepts? (Softchalk lessons/videos, Desmos Activities, powerpoints, groups in Teams (DB’s), WebAssign Quizzes, Lab Manual)

2. How are these helpful or not helpful in your learning process?

3. What are possible resources that could help but you haven't taken advantage of yet?

4. How can I help to better support you in learning course material?

3 Reflective Journals (after tests)

- Students identified resources they used and how they did/did not support their learning

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Pre/post Survey Findings
Survey Results

Increase in self-efficacy shown by all students for at least 1 survey question. Several students increased for this survey #5:

I am __________ able to relate the notes I have taken during a posted video, softchalk/Desmos lesson, or powerpoint to problems that I do in WebAssign. (from sometimes to often or always)

https://docs.google.com/spreadsheets/d/1GhmpT_XsmQGTx7_rhw9o-csmuO2OMgh9tcyOwfrJT_/edit?usp=sharing
Feedback from Reflective Journals

- A combination of resources is most helpful and Desmos Activities are preferred by most.
- Students like to have options to choose from. Some were overwhelmed by too many options.
- Students value the opportunity to give feedback and consider their own learning & adjustments they may need to make
- Groupwork is helpful to some students and an annoyance to others.
Pop quiz #3

What body systems work together to increase flexibility?
Answer

#3

- Your nervous system works with your muscular and skeletal system
- Both the emotional and physical work together
- SoTL (researching your own teaching and learning) requires flexibility
Ideas on how to extend this research....
Q&A
Feel free to contact me!

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