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Self-regulated learning: Understanding students' use of learning strategies in their transition to medical school

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> Disclosure

- We have no conflicts of interest
- This study was determined to be exempt from MSU IRB



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> Background

- Self-regulated learning
 - proactive processes that students use to acquire academic skill, including the cognitive, metacognitive, motivational, behavioral, and emotional aspects of learning (Zimmerman, 1986)
 - Important for learning success as well as life-long learning (White et al., 2013)



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> Background

- Competency-based medical education curriculum
 - Rely a lot on students' independent learning
 - We are too reliant on the assumption that students know how to self-direct their learning (Brydges et al., 2009).



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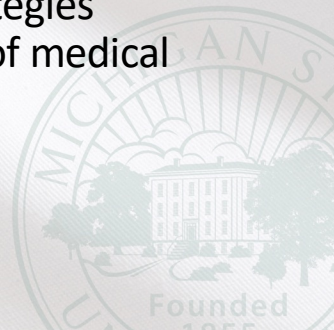
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➤ Purpose of this study

- In what ways did students' learning strategies change in their first year of medical school?
- What factors impacted students to change their learning strategies throughout the first year of medical school?



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➤ Method

- MSU New curriculum
 - Competency-based, integrated curriculum
 - Flipped classroom model
 - Curriculum integrated around patients' chief complaints and concerns



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➤ Data Collection and Analysis

- 18 first-year medical students interviewed in Feb 2019
- 30-minute semi-structured interview focusing on how students learn at the beginning and end of their first year
 - Use of planning, monitoring and reflecting strategies (Zimmerman, 2000)
 - Factors contributing to the changes



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➤ Data Collection and Analysis

- Self-regulated learning strategies (adopted and modified from Zimmerman, 2000)

Stages	Learning strategies
Planning	<ul style="list-style-type: none"> • Goal setting • Task analysis
Monitoring	<ul style="list-style-type: none"> • Elaboration • Organization • Making connections • Self-questioning
Reflecting	<ul style="list-style-type: none"> • In-class reflection • Self-evaluation • Course evaluation

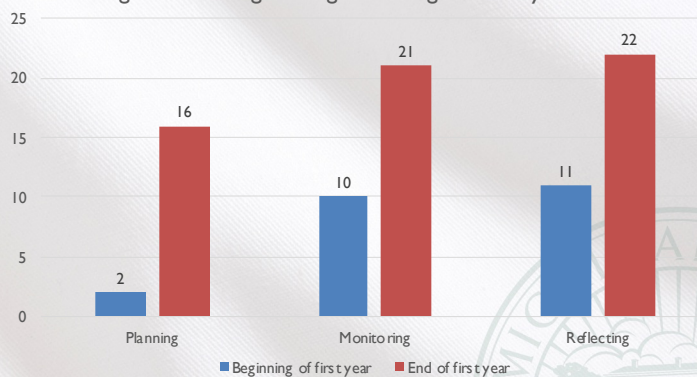


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Results

Changes in learning strategies throughout the year



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Results

• Changes in planning

Beginning of first year	End of first year
No planning; just read everything that is provided in WLM	Goal setting: use learning objectives to guide learning
	Task analysis: skim to estimate the workload and have a general idea of where the week is going; make day-by-day plans; space out readings based on class schedule instead of preparing everything on weekends



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Results

- Changes in monitoring

Beginning of first year	End of first year
Coping and pasting things; Go through everything and take notes	Active note-taking (Organization): organize by chief complaints rather than weeks; make diagram or pictures instead of taking notes; use bullet points and colors to remember
Read only WLM	Elaboration: use outside resources to reinforce learning and check understanding



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Results

- Changes in reflection

Beginning of first year	End of first year
Weekly formative assessment (from the curriculum)	Use flashcard to quiz herself (also go beyond what the flashcards says by asking herself more things related to that topic); Go to classes like PCG (post- clinical group) to see whether she can keep up with everybody.



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Results

• Changes in reflection

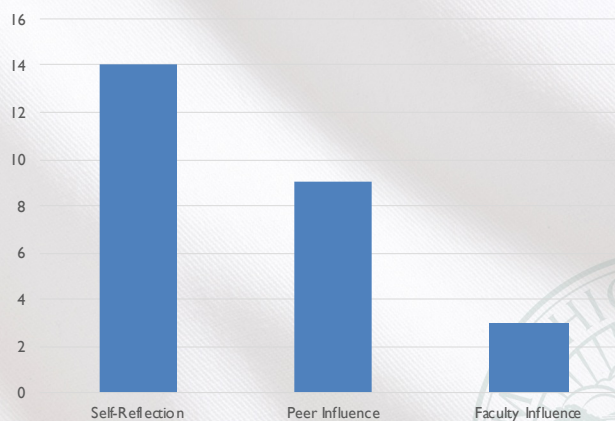
- Delayed multiple testing
- “at the end of the week I like to review...And **then the following week, (as well as) after the following week**, I’d go back with the USMLE rx...so that’d be like my third pass...It does give you an idea of how much you know. You might think you know but you don’t really know it...But **if you are testing yourself, you can actually see how much you know.**”



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Contributing factors



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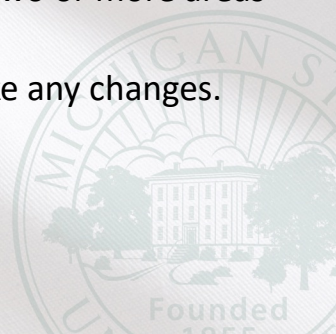
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Discussion

- Students significantly change their learning strategies in the 1st year of medical school.
 - 15/18 students changed in two or more areas of SRL.
 - Only 2 students did not make any changes.



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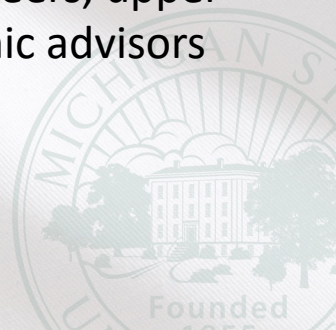
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- While constantly reflecting on their own learning is crucial (14/18 students), getting support from other sources, such as peers, upper classmates, and academic advisors are also important.



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Next Steps/ Implications

- Collaboration with another institution
- Supporting self-reflection around learning habits and strategies early in the first year or medical school



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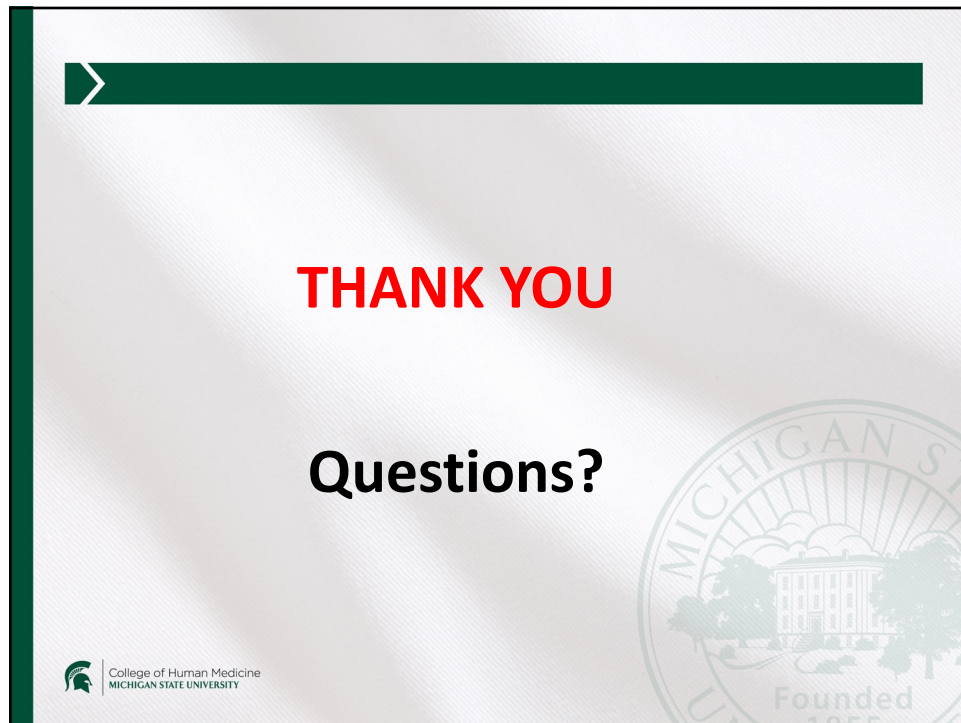
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THANK YOU

Questions?

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