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Investigating the Relationship between Learning Styles and Teaching Methods for Enhanced Retention of STEM Course Information Among University Students

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How to Enhance College Level Education: **Pay Attention** to **Kinesthetic** Learners

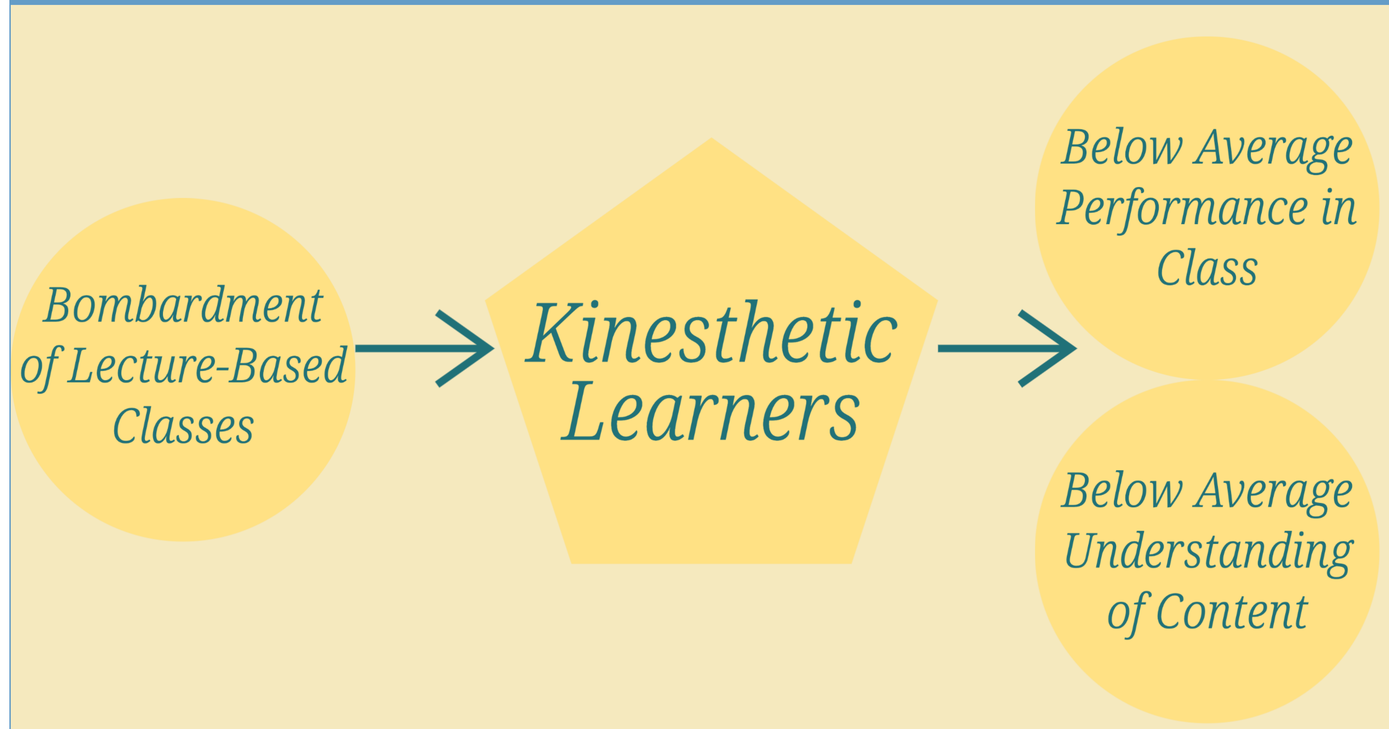
INTRODUCTION: Exploring the link between **learning styles** and **teaching methods** is critical for maximizing STEM education retention among university students. Our Research Question is as follows: How does individual learning styles impact a student's STEM course based on their instructor's teaching methods? In order to improve college education, it is important to best assimilate to student's needs, some of which can be found with this research.

METHODS

1. Qualtrics Survey – collected demographics and learning preference through O'Brien's modality questionnaire
    1. Likert scale (never, sometimes, often)
    2. Convenience Sampling of Binghamton University undergrad students
2. A multinomial logistical regression was used to test/analyze data

SIGNIFICANT FINDINGS:

- The higher preference of kinesthetic learning, the greater odds of reported below average understanding of content, and performance in the STEM class
- 77.8% of students reported experiences based on Lecture-Style Classes
- Among the three learning styles (kinesthetic, visual, auditory), students averaged highest in the kinesthetic category



Learning Styles Logistic Regression – Below Average

Understanding	B	Std. Error	Wald	df	Sig	Exp(B)
Kinesthetic	1.493	.678	4.847	1	.028	4.450
Auditory	1.681	.730	5.305	1	.021	5.372

Performance	B	Std. Error	Wald	df	Sig	Exp(B)
Kinesthetic	.971	.395	6.035	1	.014	2.641
Auditory	-.148	.303	.237	1	.627	.863

Take our poster with you!

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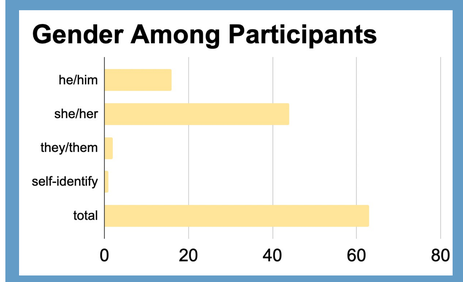

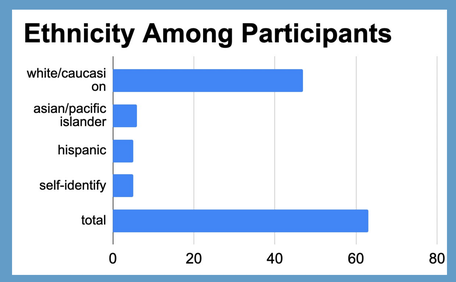

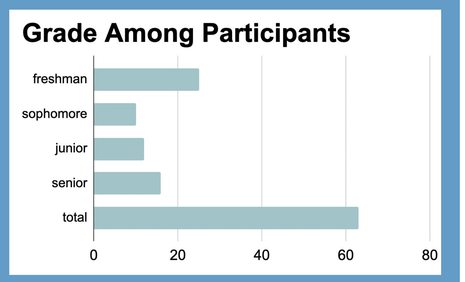

DISCUSSION:

- Considering the students being studied have a higher preference for kinesthetic learning, **an effect of lecture-based classes is poor understanding of content and poor performance in class**.
- Lecture classes are visually based, leaving much to be desired by the majority of students
- We must focus on putting **efforts towards kinesthetic centered course material**
    - Labs, hands-on activities, and environmental practices
- Also, continuing down this road will only lower the prestige of esteemed colleges like Binghamton University

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