Motivations and Learning Strategies of Medical Laboratory Sciences Students

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Project Research Questions

What is the profile of a typical student entering the UMN MLS program, if any? How can this profile inform teaching design?

*This study was approved by the Institutional Review Board (STUDY00011096)

Literature Review / Background

- Motivated Strategies for Learning Questionnaire (MSLQ)
  - Subsections/subscales
  - Validation
  - Use in studies
- Limited study of Allied Health student motivations

Materials & Methods

- Survey of MLS program students
  - MLSP 5012 course assignment
    - 2017
    - 2018
- Data output and manipulation
  - Excel
- Statistical analysis
  - SPSS® Statistics Software (IBM)

Results

Demographic Category	2017 Cohort n (%)	2018 Cohort n (%)	Combined n (%)
Gender			
Female	35 (69)	29 (66)	63 (67)
Male	16 (31)	15 (34)	31 (33)
Age Grouping			
18-25	35 (68)	35 (80)	70 (75)
25-30	11 (22)	5 (11)	15 (16)
31-40	3 (6)	4 (9)	7 (7)
41-50	2 (4)	N/A	2 (2)
Cumulative GPA			
2.5-3.0	6 (12)	4 (9)	10 (11)
3.0-3.5	28 (55)	23 (52)	51 (54)
3.5-4.0	17 (33)	17 (39)	33 (35)
Ethnic Background			
White	23 (45)	30 (70)	53 (56)
Asian or Pacific Islander	17 (33)	7 (16)	24 (26)
Black or African American	6 (12)	5 (12)	11 (12)
Other/More than one	5 (10)	1 (2)	6 (6)
English as First Language?			
Yes	29 (57)	35 (79)	63 (67)
No	22 (43)	9 (21)	31 (33)

Results

Motivation Subscales	2017 Mean	2018 Mean	Combined Mean
Intrinsic Goal Orientation	5.18	5.47	5.31
Extrinsic Goal Orientation	5.36	4.69	5.04
Task Value	5.71	5.88	5.78
Control Beliefs	5.67	5.66	5.65
Self-Efficacy for Learning and Performance	5.56	5.48	5.51
Test Anxiety	4.26	4.28	4.27
Learning Strategies Subscales	**2017 Mean**	**2018 Mean**	**Combined Mean**
Rehearsal	5.14	4.97	5.06
Elaboration	5.00	5.22	5.10
Organization	5.32	5.15	5.24
Critical Thinking	4.49	4.77	4.62
Metacognitive Self-Regulation	4.79	4.97	4.88
Time and Study Environment	5.28	5.29	5.28
Effort Regulation	4.28	4.28	4.28
Peer Learning	3.82	3.96	3.88
Help Seeking	4.28	4.37	4.32

Results

Learning Strategies Subscales	Combined Mean	ANOVA df	ANOVA F	ANOVA Sig	Tukey Mean Difference	Tukey Sig
Rehearsal	5.06	93	3.438	.020	0.68892	0.032
Elaboration	5.10	93	3.565	.017	0.59640	0.043
Organization	5.24	93	2.968	.036	0.79190	0.036
Critical Thinking	4.62	93	5.581	.001	0.76415	0.020

Discussion / Conclusion

- UMN MLS student profile
- Low Scores
  - Peer Learning
  - Help Seeking
- Areas to Address
  - Critical Thinking
  - Metacognitive Self-Regulation
  - Effort Regulation
  - Test Anxiety

Study Limitations / Next Steps

- Limitations
  - Limited to UMN students
  - Students self-report
  - Incoming students
  - Data anonymized
- Next steps
  - More cohorts
  - Put results into practice
  - Pre vs post program results
  - Motivation vs Learning Strategies

References

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ). National Center for Research to Improve Postsecondary Teaching and Learning.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & Mckeachie, W. J. (1993). Reliability and Predictive Validity of the Motivated Strategies for Learning Questionnaire (Mslq). Educational and Psychological Measurement, 53(3), 801–813. https://doi.org/10.1177/0013164493053003024

Questions?