

Metacognitive Awareness and Academic Motivation Among Occupational Therapy Students

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Article History

Received: 03.03.2025

Revised: 20.03.2025

Accepted: 15.04.2025

Published: 10.05.2025

Abstract: To determine the relationship between academic motivation and metacognitive awareness among occupational therapy students. To determine the demographic data with the outcome measures. To find the relationship of metacognitive awareness and academic motivation among occupational therapy students. Statistical analyses have been done to find the correlations. The project is a qualitative descriptive type of research design. The sample size of 80 students selected based on inclusion criteria and exclusion criteria. The sampling method used here is a simple random sampling method. Surveys for the occupational therapy students on metacognitive awareness and academic motivation are screened by using Metacognitive Awareness Inventory (MAI) and Academic Intrinsic Motivation Scale (AIMS). In the present study shows that the occupational therapy students in Fourth year are more likely to be metacognitive aware and they are likely to be more significant in academic motivation rather than the First year students. In this study, the Metacognitive Awareness Inventory and Academic Intrinsic Motivation scale are used to identify the Metacognitive Awareness and Academic Motivation among occupational therapy students. This study proves that there is a significant positive relationship between Metacognition Awareness and Academic Motivation. Hence This study concludes that the Fourth-year occupational therapy students are more likely to be Metacognitive Aware and Academic Motivated rather than the First-year students.

Keywords: Metacognitive Awareness Inventory, Academic Intrinsic Motivation, Occupational Therapy Students.

INTRODUCTION

The goal of education in the twenty-first century is to equip students with a huge amount of knowledge and information, but it's also to get them ready to learn effectively and independently, to develop self-control abilities, and to succeed both in school, college and in life.

The rapid advancement of research has had a positive impact on education quality (Darling-Hammond et al., 2019). This circumstance (quality of education) facilitated the change from, The traditional view of education has been completely altered from one that is teacher- centered to one that is student-centered (Kasim and Aini, 2012). Additionally, the essential elements of a student-centered education are found in the study techniques, where students apply their metacognitive awareness, selfregulate their study techniques, and are motivated.

"Metacognition was originally referred to as the knowledge about and regulation of one's own cognitive activities in learning processes" (Flavell, 1979; Brown, 1978). "Metacognition involves awareness of how they learn, an evaluation of their learning needs, generating strategies to meet these needs and then implementing the strategies" (Hacker, 2009). Some terminology related to metacognition include metacognitive awareness, metacognitive experiences, metacognitive knowledge, metacognitive beliefs, metacognitive talents, high-level

skills, and higher memory (Veenman et al., 2006; Yesilyurt, 2013).

"The persons who have the cognitive, metacognitive abilities as well as motivational beliefs required to understand, monitor, and direct their own learning," according to Wolters (2003), are self-regulated learners. According to Boekaerts and Corno (2005), students need to be actively involved in their education. In relation to their attitudes and behaviors, students should be able to plan, monitor, regulate, and control their cognitive processes. Therefore, in order to participate fully in their education and succeed, students need to have strong metacognition abilities.

Motivation can be defined as the process responsible for the initiation, intensity, and persistence of behavior. Motives are causes that produce certain effects or actions (including inaction). The source of a person's motivation may be intrinsic, derived from internal processes, and or extrinsic, the result of external forces. (Ellen L.usher, 2012). Academic intrinsic motivation, which is crucial to both the learning process and human behaviors, provides the foundation for achieving success in academic performance.

Students that are college age can benefit from employing tactics listed under metacognition strategies. Additionally, students can understand metacognitive skills to improve their learning (Fisher et al., 2015; Barenberg and Dutke, 2019). According to Pintrich,

students are more likely to implement different types of strategies of learning, problem-solving, and thinking processes.

The importance of this study is to provide the insights about the factors which impacts upon the academic motivation of the students. Firstly, the exploration of the concepts related to the metacognition will help the literature in the settings of educational institutes. Secondly, this study adds value to the literature on motivation as the concept of intrinsic and extrinsic motivation among the students is also the focus of this study and in exploring the significance in students educational journey.

The project is a qualitative descriptive type of research design. The sample size of 80 students selected based on inclusion criteria and exclusion criteria. The Sampling method used here is simple random sampling method. Survey for the occupational therapy students on metacognitive awareness and academic motivation are screened by using Metacognitive Awareness Inventory (MAI) and Academic Intrinsic Motivation Scale (AIMS).

The students in occupational therapy who met the selection criteria were selected for the study and study has been explained to the students and the scale is administrated and the data is collected from the students. the students were given information packs explaining the purpose of the study, extent of involvement including length of time for completing. overall screening of 80 students are came under the inclusion criteria.

Individuals first reported basic demographic information and then participated in MAI and AIMS. The individuals where given the questionnaire form in which the MAI scale consist of 52 items and AIMS consist of 60 items. The study is administrated for the undergraduate students in occupational therapy. The study was carried out eight weeks. The administration duration for the questionnaire took approximately 30 minutes to complete, all participants gave full informed consent.

DATA ANALYSIS

In Data Analysis procedure SPSS software Version 20 was to analyze the data.

STATISTICAL ANALYSIS

Topic: Metacognitive awareness and academic motivation among occupational therapy students

Table.1: Represents the Age category among the students.

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	20	25.0	25.0	25.0
	19	9	11.3	11.3	36.3
	20	15	18.8	18.8	55.0
	21	27	33.8	33.8	88.8
	22	9	11.3	11.3	100.0
Total		80	100.0	100.0	

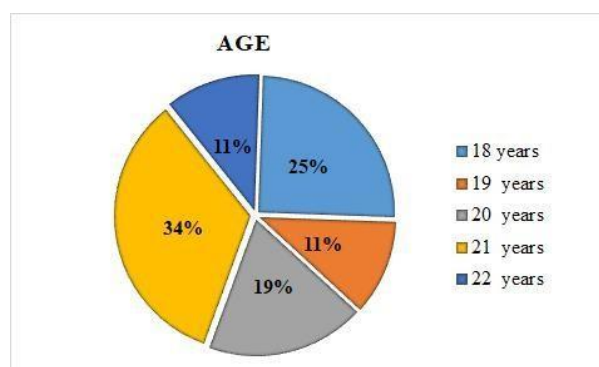


Fig.4: Pie-diagram description of students age.

Table.1 and Fig.4: A frequency distribution of age in occupational therapy students are highly presented in 21 years of age group with 34% are shown in pie-diagram.

Table.2: Represents the frequency distribution of gender in the population

GENDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	54	67.5	67.5	67.5

	Male	26	32.5	32.5	100.0
	Total	80	100.0	100.0	

GENDER

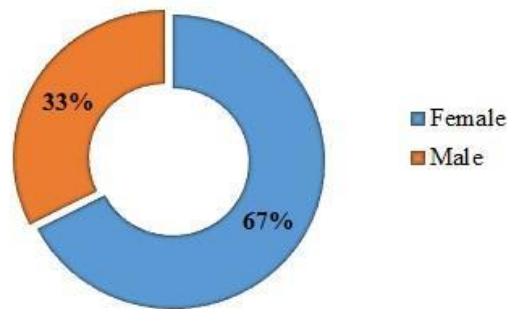


Fig.5: Pie-diagram of gender difference in population.

Table.2 and Fig.5: A frequency distribution of gender in occupational therapy students are highly presented in 54 females in gender with 67% are shown in pie-diagram.

Table.3: Represents the year of studying of the occupational therapy students

YEAR OF STUDYING					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1st Year	29	36.3	36.3	36.3
	2nd Year	10	12.5	12.5	48.8
	3rd Year	13	16.3	16.3	65.0
	4th Year	28	35.0	35.0	100.0
	Total	80	100.0	100.0	

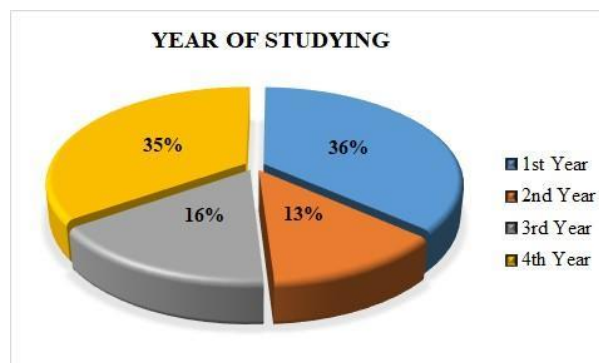


Fig.6: shows the year of studying of the students

Table.3 and Fig.6: A frequency distribution of year of studying in occupational therapy students are most presented in 4th years students with 35% from overall year of studying are shown in pie-diagram.

Table.4: Metacognitive awareness students

Descriptives							
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	Minimum	Maximum

						Lower Bound	Upper Bound		
Declarative	1st Year	29	4.76	1.618	.300	4.14	5.37	2	8
	2nd Year	10	5.40	2.366	.748	3.71	7.09	2	8
	3rd Year	13	3.92	1.847	.512	2.81	5.04	1	6
	4th Year	28	6.79	1.228	.232	6.31	7.26	4	8
	Total	80	5.41	1.947	.218	4.98	5.85	1	8
Procedural	1st Year	29	2.34	1.143	.212	1.91	2.78	1	4
	2nd Year	10	3.20	.789	.249	2.64	3.76	2	4
	3rd Year	13	2.54	.877	.243	2.01	3.07	1	4
	4th Year	28	3.29	.659	.124	3.03	3.54	2	4
	Total	80	2.81	.995	.111	2.59	3.03	1	4
Conditional	1st Year	29	3.14	1.274	.237	2.65	3.62	1	5
	2nd Year	10	3.60	1.265	.400	2.70	4.50	1	5
	3rd Year	13	3.08	.760	.211	2.62	3.54	2	4
	4th Year	28	4.21	.995	.188	3.83	4.60	1	5
	Total	80	3.56	1.200	.134	3.30	3.83	1	5
Planning	1st Year	29	4.14	1.432	.266	3.59	4.68	1	6
	2nd Year	10	5.00	1.700	.537	3.78	6.22	2	7
	3rd Year	13	4.15	1.281	.355	3.38	4.93	2	6
	4th Year	28	5.75	1.266	.239	5.26	6.24	2	7
	Total	80	4.81	1.552	.173	4.47	5.16	1	7
Comprehension Monitoring	1st Year	29	4.17	1.365	.253	3.65	4.69	1	6
	2nd Year	10	5.70	1.252	.396	4.80	6.60	4	7
	3rd Year	13	5.08	1.038	.288	4.45	5.70	4	7
	4th Year	28	5.96	.922	.174	5.61	6.32	3	7
	Total	80	5.14	1.385	.155	4.83	5.45	1	7

Information Management Strategies	1st Year	29	6.07	1.907	.354	5.34	6.79	2	9
	2nd Year	10	7.10	1.595	.504	5.96	8.24	5	9
	3rd Year	13	5.38	2.103	.583	4.11	6.66	2	8
	4th Year	28	8.04	1.551	.293	7.43	8.64	4	10
	Total	80	6.78	2.037	.228	6.32	7.23	2	10
Debugging Strategies	1st Year	29	3.28	1.437	.267	2.73	3.82	1	5
	2nd Year	10	3.10	1.287	.407	2.18	4.02	1	5
	3rd Year	13	2.69	1.316	.365	1.90	3.49	1	5
	4th Year	28	4.11	1.100	.208	3.68	4.53	1	5
	Total	80	3.45	1.368	.153	3.15	3.75	1	5
Evaluation	1st Year	29	3.17	1.167	.217	2.73	3.62	1	6
	2nd Year	10	4.50	1.716	.543	3.27	5.73	2	6
	3rd Year	13	3.54	1.198	.332	2.81	4.26	2	6
	4th Year	28	4.61	.994	.188	4.22	4.99	3	6
	Total	80	3.90	1.346	.151	3.60	4.20	1	6

Table.4: In descriptive statistics table of Metacognitive Awareness Inventory, the overall mean value is higher in 4 th years students are Declarative, Procedural, Conditional, Planning, Comprehension Monitoring, Information Management Strategies, Debugging Strategies and Evaluation.

Table.5: ANOVA of MAI

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Declarative knowledge	Between Groups	94.040	3	31.347	11.601	.000
	Within Groups	205.348	76	2.702		
	Total	299.388	79			
Procedural knowledge	Between Groups	15.091	3	5.030	6.059	.001
	Within Groups	63.097	76	.830		
	Total	78.188	79			
Conditional knowledge	Between Groups	20.202	3	6.734	5.474	.002
	Within Groups	93.486	76	1.230		
	Total	113.688	79			
Planning	Between Groups	43.797	3	14.599	7.579	.000
	Within Groups	146.391	76	1.926		
	Total	190.188	79			

Comprehension Monitoring	Between Groups	49.362	3	16.454	12.245	.000
	Within Groups	102.125	76	1.344		
	Total	151.488	79			
Information Management Strategies	Between Groups	85.147	3	28.382	8.884	.000
	Within Groups	242.803	76	3.195		
	Total	327.950	79			
Debugging Strategies	Between Groups	21.659	3	7.220	4.350	.007
	Within Groups	126.141	76	1.660		
	Total	147.800	79			
evaluation	Between Groups	34.653	3	11.551	8.087	.000
	Within Groups	108.547	76	1.428		
	Total	143.200	79			

Table.5: We observe that the ANOVA table, The probability values are less than 0.05 (i.e., $p < 0.05$). So, we reject the null hypothesis that all the population means are equal. Therefore, the Metacognitive awareness students are performed differently in occupational therapy. The differences between our mean weights ranging from 2 to 8 scorings are statistically significant.

Table.6: Academic Intrinsic Motivation

Descriptives									
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
MAS	1st Year	29	47.03	6.684	1.241	44.49	49.58	34	64
	2nd Year	10	44.40	6.586	2.083	39.69	49.11	34	55
	3rd Year	13	49.92	8.770	2.432	44.62	55.22	37	63
	4th Year	28	54.75	9.762	1.845	50.96	58.54	28	68
	Total	80	49.88	8.956	1.001	47.88	51.87	28	68
NEED	1st Year	29	49.72	7.727	1.435	46.78	52.66	35	65
	2nd Year	10	44.40	14.300	4.522	34.17	54.63	11	57
	3rd Year	13	48.46	9.632	2.671	42.64	54.28	27	62
	4th Year	28	55.50	8.302	1.569	52.28	58.72	30	69
	Total	80	50.88	9.820	1.098	48.69	53.06	11	69

	1st Year	29	96.76	13.519	2.510	91.62	101.90	73	129
TOTALINTRINSIC MOTIVATON	2nd Year	10	88.80	19.228	6.081	75.04	102.56	51	112
	3rd Year	13	98.38	17.552	4.868	87.78	108.99	70	124
	4th Year	28	110.25	15.990	3.022	104.05	116.45	78	134
	Total	80	100.75	17.260	1.930	96.91	104.59	51	134
AUTH	1st Year	29	43.24	7.467	1.387	40.40	46.08	32	64
	2nd Year	10	36.80	5.613	1.775	32.78	40.82	28	43
	3rd Year	13	37.31	10.570	2.932	30.92	43.70	15	51
	4th Year	28	25.82	8.646	1.634	22.47	29.17	12	47
	Total	80	35.38	11.037	1.234	32.92	37.83	12	64
PEER	1st Year	29	47.52	9.579	1.779	43.87	51.16	33	74
	2nd Year	10	47.60	7.604	2.405	42.16	53.04	33	56
	3rd Year	13	45.85	13.849	3.841	37.48	54.22	17	60
	4th Year	28	31.93	8.898	1.682	28.48	35.38	15	49
	Total	80	41.80	12.198	1.364	39.09	44.51	15	74
POW	1st Year	29	44.55	7.169	1.331	41.82	47.28	33	60
	2nd Year	10	44.20	8.080	2.555	38.42	49.98	31	54
	3rd Year	13	39.23	10.386	2.880	32.95	45.51	21	58
	4th Year	28	26.71	8.524	1.611	23.41	30.02	16	53
	Total	80	37.40	11.512	1.287	34.84	39.96	16	60

FEAR	1st Year	29	45.00	7.569	1.405	42.12	47.88	31	60
	2nd Year	10	45.00	12.138	3.838	36.32	53.68	33	63
	3rd Year	13	41.62	11.064	3.069	34.93	48.30	15	55
	4th Year	28	31.71	7.840	1.482	28.67	34.75	21	50
	Total	80	39.80	10.666	1.192	37.43	42.17	15	63
TOTAL EXTRINSIC MOTIVATION	1st Year	29	180.62	23.056	4.281	171.85	189.39	143	231
	2nd Year	10	173.60	26.273	8.308	154.81	192.39	130	206
	3rd Year	13	164.08	40.775	11.309	139.44	188.72	68	223
	4th Year	28	115.04	28.257	5.340	104.08	125.99	82	166
	Total	80	154.10	40.695	4.550	145.04	163.16	68	231

Table.6: In the descriptive statistics table of Academic Intrinsic Motivation, the Intrinsic Motivation mean value is higher in 4 th years students and the Extrinsic Motivation mean values are higher in 1 st year students compared with other class groups.

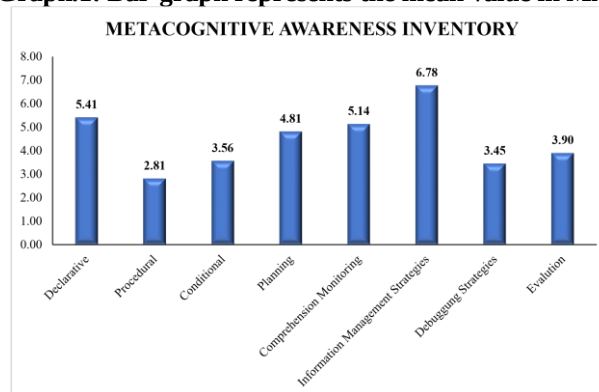
Table.7: ANOVA of AIMS

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
MAS	Between Groups	1199.211	3	399.737	5.913	.001
	Within Groups	5137.539	76	67.599		
	Total	6336.750	79			
NEED	Between Groups	1132.326	3	377.442	4.422	.006
	Within Groups	6486.424	76	85.348		
	Total	7618.750	79			
TOTAL INTRINSIC MOTIVATION	Between Groups	4489.763	3	1496.588	5.972	.001
	Within Groups	19045.237	76	250.595		
	Total	23535.000	79			
AUTH	Between Groups	4418.963	3	1472.988	21.513	.000
	Within Groups	5203.787	76	68.471		
	Total	9622.750	79			
PEER	Between Groups	4225.609	3	1408.536	14.218	.000
	Within Groups	7529.191	76	99.068		
	Total	11754.800	79			
POW	Between	5186.406	3	1728.802	24.871	.000

	Groups					
	Within Groups	5282.794	76	69.510		
	Total	10469.200	79			
FEAR	Between Groups	2928.009	3	976.003	12.243	.000
	Within Groups	6058.791	76	79.721		
	Total	8986.800	79			
TOTALEXTRINSIC MOTIVATION	Between Groups	68222.085	3	22740.695	27.605	.000
	Within Groups	62607.115	76	823.778		
	Total	130829.200	79			

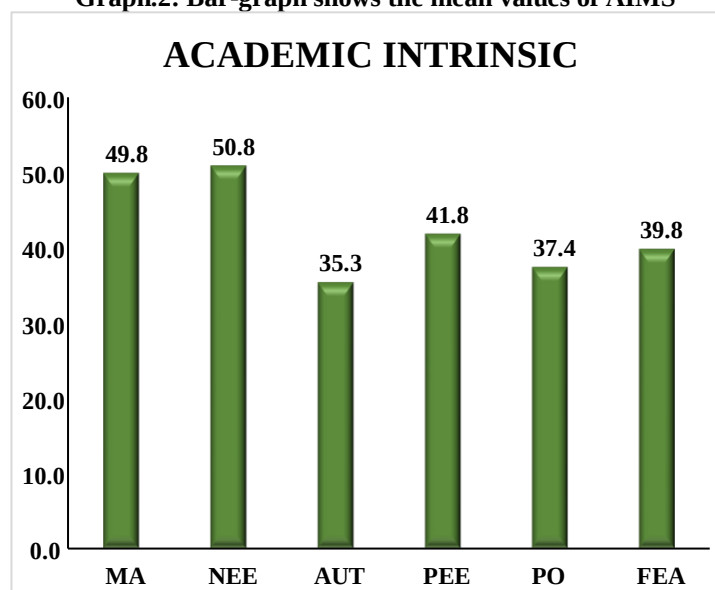
Table.7: We observe that the ANOVA table, The probability values are less than 0.05 (i.e., $p < 0.05$). So, we reject the null hypothesis that all the population means are equal. Therefore, the Academic Intrinsic Motivation students are performed differently in occupational therapy. The differences between our mean weights ranging from 47 to 55 scorings in Intrinsic Motivation and 25 to 46 in Extrinsic Motivation are statistically significant.

Graph.1: Bar-graph represents the mean value in MAI.



From the above bar graph, the highest mean score bar is presented in Information Management Strategies in Metacognitive Awareness Inventory among occupational therapy students.

Graph.2: Bar-graph shows the mean values of AIMS



From the above bar graph, the highest mean score bar is presented in NEED in Academic Intrinsic Motivation among in occupational therapy students.

CONCLUSION

In this study, the Metacognitive Awareness Inventory and Academic Intrinsic Motivation scale are used to identify the Metacognitive Awareness and Academic Motivation among occupational therapy students. This study proves that there is a significant positive relationship between Metacognition Awareness and Academic Motivation. Hence This study concludes that the Fourth year occupational therapy students are more likely to be Metacognitive Aware and Academic Motivated rather than the First year student.

LIMITATIONS

- The present study was done with a very small sample size.
- Study was done on a restricted age group 18 to 23.
- This study focuses only on occupational therapy students in MAHER.

RECOMMENDATIONS

- A larger sample size could be considered.
- Longer duration of survey study could be considered. The present study can be done in a different location
- Study can be done on different age group
- Completing similar studies by using post-graduates students and school students.

DECLARATION: The authors have no conflict of interest

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