Meta-Cognitive Skills: An Empirical Study on Undergraduate Students of Kashmir Valley

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Meta-Cognitive Skills: An Empirical Study on Undergraduate Students of Kashmir Valley.

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Abstract

It is important to enhance meta-cognitive skills that control one's learning process to acquire a desired level of learning. Students with good meta-cognitive skills can concentrate his or her attention on learning unit; make a contrast between essential and irrelevant information; use the strategies that are effective to keep the information and recall it when needed. Even students can change their meta-cognitive skills as the learning is completed. The present study was undertaken to study the meta-cognitive skills of undergraduate students of kashmir valley. The sample consisted of 600 undergraduate students that were selected through random sampling technique. Meta-Cognitive Skills Scale developed by Gupta, M. & Suman (2017) was used. Descriptive as well as inferential statistics were used for analyzing the data. The results revealed that there was a significant difference betweeen male and female undergarduate students of kashmir valley. The results further stated that first generation and non-first generation students showed significant difference on certain dimensions of meta-cognitive skills.

Keywords: Meta-Cognitive Skills; First and Non-first Generation Students.

I.   Introduction

The traditional view of learning has been changed by constructivism i.e, knowledge absorption into a view of learning i.e, active knowledge construction. Learning is considered as a constructive, cumulative, self-regulated, goal-oriented, situated collaborative and individually different process of knowledge building and meaning construction (Cort, 2000). The purpose of instruction, no matter how it happens, is to support the learning process (Briggs and Wager, 1998). The world of future will be a world of VUCA which is formed by the words of Volatile, Uncertain, Complex and filled with Ambiguity. It has become very important to make students aware about how to learn new information and how this learning will enable them to be more successful. To make students aware about one's own cognitive process and how to execute information in learning is called meta-cognition.

The term meta-cognitive skill was first introduced by Flavell and others in 1970 while working on children's memory processes. Meta-cognition includes two components:

a) **Knowledge about cognition and**

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b) **Regulation of cognition (Flavell, 1979).**

Knowledge about cognition includes knowledge about oneself as a learner and about the factors that might impact performance (declarative), knowledge about strategies (procedural) and knowledge about when and why to use strategies (Conditional). Regulation of cognition is the monitoring of one's cognition and includes planning activities, monitoring or awareness of comprehension and task performance and evaluation of the efficacy of monitoring processes and strategies. These regulatory activities associated with solving problems are called meta-cognitive skills (Brown, 1978). The research studies showed that younger children were poor in aspect of meta-cognitive skills (Flavell, 1979 & Inoue, 2000). In another research the investigator found, significant differences in meta-cognitive knowledge among groups while differences in meta-cognitive skills were only found in the performance, with a low effect size García, Cueli, Rodríguez, et al. (2015). Researchers examined university students and found higher levels of meta-cognitive thinking ability together with their, 'thinking skill, reflective thinking skill intended for problem solving, decision making skill, alternative evaluation' sub dimensions. There has been an increase in the level of meta-cognitive thinking skill as well as the increase in the class level (Yemliha, 2018). Thus, these skills are important organizers of all of the tasks that we perform.

II.   Rationale

Generally, students do not know about their capacity of learning new skills and strategies. They lack the inherent urge to learn new information. Our curriculum is framed in such a manner that supports rote learning. There is an urgency to help students in knowing which learning skills are effective, planning an approach to learning task and using effective learning strategies to process and this role can be played by none other than their teachers. While going through the literature review, the investigator found that no study was conducted on meta-cognitive skills of undergraduate students of Kashmir valley. So, the investigator tried to objectively assess the meta-cognitive skills of undergraduate students.

III.   Objectives

1. To study the meta-cognitive skills of undergraduate students of Kashmir valley.
2. To compare the male and female undergraduate students on meta-cognitive skills.
3. To compare the first generation and non-first generation undergraduate students on meta-cognitive skills.

IV.   Hypotheses

1. There is no significant difference between male and female undergraduate students on meta-cognitive skills.
2. There is no significant difference between first generation and non-first generation undergraduate students on meta-cognitive skills.

V. Operational Definitions of the Variables

1. *Meta-Cognitive Skills*: Meta-Cognition is set of skills that involve "thinking about thinking." It involves two main components:

a) *Knowledge about cognition and*

b) *Regulation of cognition (Flavell, 1979).*

In the present study, meta-cognitive skills are defined as *"the scores obtained on meta-cognitive skills scale" developed by Gupta, M. & Suman (2017).*

2. *First Generation Students*: The students whose parents have never attended school and are illiterate.

3. *Non-first Generation Students*: The students whose parents have attended the school and have passed 10th grade examination.

VI. Sample

The present study consisted sample of 600 undergraduate students selected through random sampling technique.

VII. Tools Used

Meta-Cognitive Skills Scale: Meta-Cognitive Skills Scale developed by Gupta, M. & Suman (2017) was used for data collection. The scale consisted of 42 items representing four (4) dimensions viz. a) Planning, b) Implementation, c) Monitoring, and d) Evaluation.

VIII. Statistical Techniques

The data was analyzed by using Mean, Standard deviation and t-test.

IX. Analysis, Interpretation and Discussion

Table 1: Shows percentage of undergraduate students on different levels of Meta-Cognitive Skills

Levels of Meta-Cognitive Skills	N	%
Very High	03	0.5%
High	67	11.2%
Above Average	284	47.3%
Average	218	36.3%
Below Average	22	3.7%
Low	06	1%
Very Low	0	0
Total	600	100
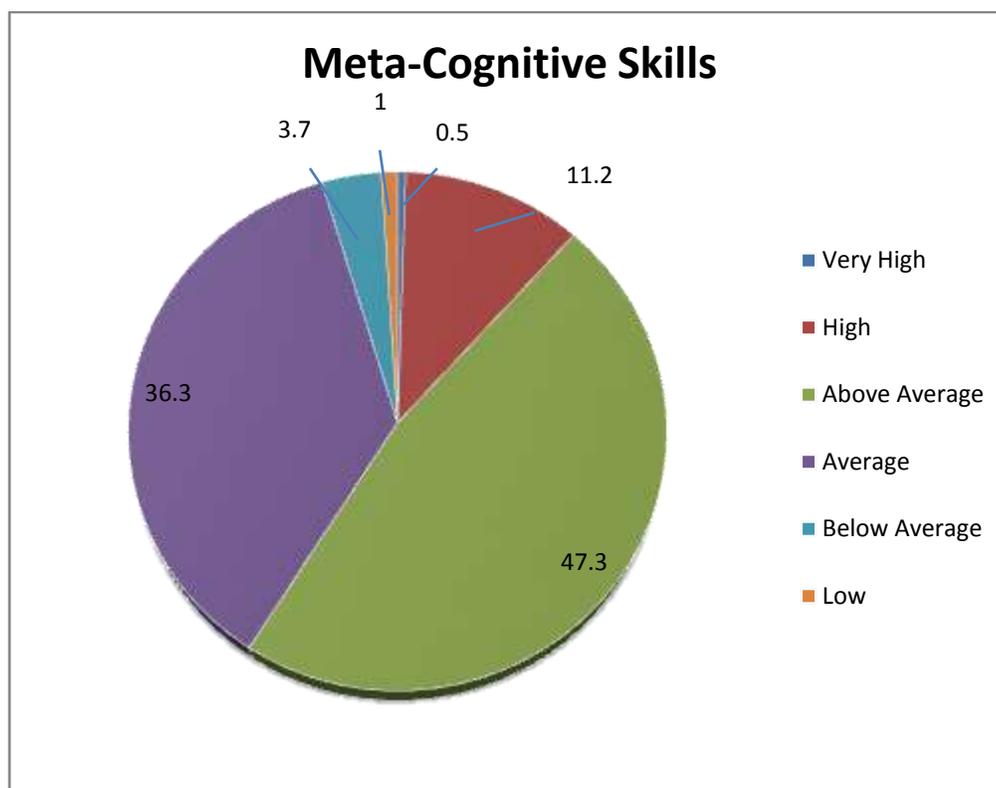
Figure 1: Showing diagrammatical representation of undergraduate students on different levels of meta-cognitive skills.

The data in the **Table 1** shows us the percentage distribution of undergraduate students on different levels of meta-cognitive skills. Highest percentage of students (43.7%) has above average level of meta-cognitive skills followed by average level (36.3%). 11.2% of students have high level of meta-cognitive skills followed by below average (3.7%). 1% of students have low level of meta-cognitive skills and only 0.5% of students have very high level of meta-cognitive skills. None of the students have low level of meta-cognitive skills.

Table 2: Shows mean difference between male and female undergraduate students on dimensions of Meta-Cognitive Skills

Dimensions	Gender	Mean	S.D	N	t-value	Remarks
Planning	Female	47.19	5.779	291	2.98	Significant at 0.01
	Male	45.60	7.208	309		
Implementation	Female	36.10	4.327	291	3.39	Significant at 0.01
	Male	34.77	5.207	309		
Monitoring	Female	42.81	5.258	291	3.04	Significant at 0.01
	Male	41.35	6.463	309		
Evaluation	Female	37.52	5.122	291	1.77	Not Significant
	Male	36.72	5.825	309		
Meta-Cognitive Skills Total	Female	163.63	17.363	291	3.32	Significant at 0.01
	Male	158.44	20.614	309		

The data presented in **Table 2** reveals that there is a significant mean different between male (M= 45.60) and female (M= 45.60) undergraduate students on planning dimension of meta-cognitive skills. The calculated t-value which comes out to be 2.98 is significant at 0.01 level (> 2.56). On implementation dimension of meta-cognitive skills, female students have higher mean value (M= 36.10) than male students (M= 34.77). The calculated t-value which comes out to be 3.39 is significant at 0.01 level (>2.56). Significant difference was found between male (M= 41.35) and female (M= 42.81) on monitoring dimension of meta-cognitive skills. The calculated t-value which comes out to be 3.04 is significant at 0.01 level (>2.56). There is insignificant difference between male (M= 36.72) and female (M= 37.52) students on evaluation dimension of meta-cognitive skills. The calculated t-value which comes out to be 1.77 is insignificant at 0.05 level (<1.96). On the composite score of meta-cognitive skills, significant difference is found between male (M= 158.44) and female (M= 163.63) undergraduate students. The calculated t-value which comes out to be 3.32 is significant at 0.01 level (>2.56).

Table 3: Shows mean difference between First and Non-first generation undergraduate students on dimensions of Meta-Cognitive Skills.

Dimensions	Generation	Mean	S.D	N	t-value	Remarks
Planning	Non First Generation	47.25	7.29	334	1.02	Not Significant
	First Generation	46.68	6.23	266		
Implementation	Non First Generation	36.38	5.79	334	2.14	Significant at 0.05
	First Generation	42.92	4.65	266		
Monitoring	Non First Generation	42.32	6.88	334	1.11	Not Significant
	First Generation	42.32	6.11	266		
Evaluation	Non First Generation	38.30	6.41	334	3.02	Significant at 0.01
	First Generation	36.81	5.39	266		
Meta-Cognitive Skills (Total)	Non First Generation	164.84	21.70	334	2.13	Significant at 0.05
	First Generation	161.30	19.01	266		

The data presented in **Table 3** shows that there is insignificant mean difference between first generation (M= 46.68) and non-first generation (M= 47.25) students on planning dimension of meta-cognitive skills. The calculated t-value which comes out to be 1.02 is insignificant (<1.96). The first generation (M= 42.92) and non-first generation (M= 36.38) students showed significant mean difference on implementation dimension of meta-cognitive skills. The calculated t-value which comes out to be 2.14 is significant at 0.05 level (>1.96). On monitoring dimension of meta-cognitive skills, there is no mean difference between first generation (M= 42.32) and non-first generation (M= 42.32) students. The calculated t-value which comes out to be 1.11 is insignificant (<1.96). The table further depicted that there is a significant mean difference between first generation (M= 38.30) and non-first generation (M= 36.81) students on evaluation dimension of meta-cognitive skills. The obtained t-value which comes out to be 3.02 is significant at 0.01 level (>2.56). On comparing the composite mean scores of first generation (M= 161.30) and non-first generation (M= 164.84) students, there is a significant mean difference between the first and non-first generation students. The t-value which comes out to be 2.13 is significant at 0.05 level (>1.96).

Discussion

The present study was conducted to compare the undergraduate students on the basis of gender and generation. The results revealed that there is a significant difference between male and female undergraduate students on meta-cognitive skills. While going through the **Table 2**, it is

observed that females are higher on planning, implementation and monitoring dimensions. The male and female undergraduate students were equal on evaluation dimension of meta-cognitive skills. On composite score, females have higher meta-cognitive skills than males. Researchers have observed that females have higher level of meta-cognitive skills as compared to males (Higgins & Babara, 2000). It has been also observed that meta-cognitive skills used by students could improve academic performance of students (Tabaran, Rynearson & Kerr, 2000). Meta-cognitive skills enable planning, setting goals, initiating work, sustaining future oriented problem solving activities, monitoring and managing progress on tasks to detect and correct errors and keeping track of the effect of one's behaviour on others Gupta & Suman (2000). Therefore, the objective no. 2 which states that *"to compare male and female undergraduate students on meta-cognitive skills"* has been achieved and the hypothesis no.1 which states that "*there is no significant difference between male and female undergraduate students on meta-cognitive skills"* has been rejected and realised thereof.

The results further revealed that there is a significant difference between first generation and non-first generation undergraduate students on certain dimensions of meta-cognitive skills **(Table 3)**. The results revealed that first generation students are higher on implementation dimension of meta-cognitive skills while as non-first generation students are higher on evaluation dimension of meta-cognitive skills. On composite score, non-first generation students have higher meta-cognitive skills than first generation students. Costello, Ballin, Diamond & Gao (2018) revealed that first-generation student perceived a greater number of obstacles in their college experience than non-first-generation students. Obstacles to academic performance for first generation students included lack of time to study due to work and family responsibilities, financial struggles, and unhelpful faculty relationships. Facilitators were helpful faculty and peer relationships. Lack of mental health support was cited as a barrier to both of students. Therefore, the objective no. 3 which states that *"to compare first generation and non-first generation students on meta-cognitive skills"* has been achieved and hypothesis no. 2 which states *"that there is no significant difference between first generation and non-first generation students on meta-cognitive skills"* has been partially rejected and hence realised.

Conclusion

Using meta-cognitive strategies by the students, they become skilled and gain confidence. This in turn helps them to become independent learners. Independent learning helps the students to become efficient and make them realize that they have the potential to achieve their intellectual goals. The responsibility of educators is to acknowledge, cultivate, exploit and enhance the meta-cognitive capabilities of all learners. One of the main characteristic of meta-cognition is the periodic appraisal of one's thinking. It is important for students as well as for teachers because it

reflects the dynamics of teaching and learning, the foundation of education and an important initial step to revise one's approach.

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