



ORIGINAL RESEARCH PAPER

Education

CONSTRUCTION AND STANDARDIZATION OF METACOGNITION SCALE (MCS) FOR NINTH STANDARD STUDENTS

KEY WORDS:

Seetharaman D

M.Ed. Student, Tamil Nadu Teachers Education University, Chennai, Tamil Nadu, India.

Dr. C. E. Jayanthi

Assistant Professor, Department Of Educational Planning And Administration, Tamil Nadu Teachers Education University, Chennai, Tamil Nadu, India

ABSTRACT

The metacognition scale (MCS) has been constructed and standardized to measure the ninth standard student's metacognition level. The items were constructed based on the Likert's five- point scale. Initially, the scale consists of forty-two items. The pilot study was conducted with one hundred ninth standard students who are studying higher secondary schools located in Attur taluk of Salem District. The sample for pilot study were selected randomly. The responses collected were analyzed by using statistical techniques. The scores of the item that satisfies 't' value alone were taken for the main study. Out of forty-two items, twenty items were not selected and twenty- two items were selected for the main study.

INTRODUCTION

Metacognition, or the awareness and regulation of one's own cognitive process, is a crucial skill for effective learning and problem-solving. Several studies have examined metacognition in relation to factors like gender, personality traits, and foreign language performance. However, there is a need for a standardized tool to measure metacognition specifically in ninth standard students.

Metacognition Scale

According to Flavell (1979) One 's knowledge concerning one's own cognitive processes. Brown (1987) defined that Knowledge and awareness one have of his own thinking processes and strategies and the ability to evaluate and regulate one's own thinking processes. It is learning to think about the how and why of what one does. Awareness of one's own cognitive functioning and application of one's cognitive resources for learning (Fisher, 1998). Awareness of one's own thinking, awareness of the context of one's conceptions, an active monitoring of one's cognitive process, an attempt to regulate one's cognitive process in relationship to further learning (Hartmann, 2001). Pintrich (2004) defined that Higher order thinking which involves active control over the cognitive processes engaged in learning.

Review Of Related Literature

Meera and Krishna (2020) examined the metacognition with regard to adolescents' residential area and their gender. A sample three hundred students from Hisar district of Haryana were selected for the study. The population area was purposively divided into rural and urban area. Hisar city was chosen as the urban area and Kharia, Dhobi, and Kirtan were the three villages chosen as urban area. 25 boys and 25 girls belonging to the age group of 14-16 years from each school were selected from each school. The results showed that male respondents had moderate levels of procedural knowledge and conditional knowledge whereas female had moderate level of declarative knowledge. It also showed that a greater number of urban students had higher metacognition than rural students.

Ozturk (2021) conducted an analytic survey with a sample of 244 participants, to examine the relation between metacognition and personality traits and their interaction with foreign language performance. Turkish Metacognitive Awareness Inventory was used to measure the metacognition and Personality Traits Inventory was used to assess personality traits and 47 foreign language performance records were gathered. Spearman's rank correlation and multiple linear regression techniques were used to analyse the collected data. The output of correlation analysis showed that metacognitive knowledge and metacognitive regulation

were positively correlated with reading performance. The output of regression analysis showed that foreign-language performance was predicted only by personality traits and it was not predicted by metacognition.

Main Objective Of The Study

To construct and standardize the metacognition scale to measure the level of metacognition of the ninth standard students.

Sample Of The Study

One hundred ninth standard students were selected randomly who are studying in higher secondary school at Attur taluk in Salem district as sample for the study.

Pilot Study

Metacognition scale for ninth standard students has been constructed and validated by the investigator and the research supervisor. Relevant literatures related to metacognition and test construction procedures were analyzed for the tool construction. The metacognition scale was constructed after having discussion with research supervisor and experts in the field of education. Based on Likert's five-point rating scale, the tool has been framed. Initially, the items were constructed in both Tamil and English language. Scoring procedure for positive items: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree are given as 5,4,3,2,1 respectively. For negative items: Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree are given as 1,2,3,4,5 respectively. The minimum score for the tool is Forty-Two and maximum score for the tool is Two hundred and Ten.

Item Analysis

The pilot study tool consists of forty-two items. There are thirty-seven items were positive and five negative items. As per Likert's five-point scale, every item has been responses namely Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree. Out of these forty-two items, only twenty-two items were taken for the main study.

Table: 01 Scoring Procedure of Metacognition Scale (MCS)

Alternatives	Positive Scoring	Negative Scoring
Strongly Agree	5	1
Agree	4	2
Undecided	3	3
Disagree	2	4
Strongly Disagree	1	5

't' Values of the item

Item Number	't' Value	Item Status
Item 1	0.255	Not Selected
Item 2	1.382	Not Selected
Item 3	3.039	Selected
Item 4	2.992	Selected
Item 5	3.014	Selected
Item 6	2.213	Selected
Item 7	2.988	Selected
Item 8	3.785	Selected
Item 9	2.054	Selected
Item 10	4.498	Selected
Item 11	1.998	Selected
Item 12	0.448	Not Selected
Item 13	2.287	Selected
Item 14	1.749	Not Selected
Item 15	2.031	Selected
Item 16	2.231	Selected
Item 17	2.018	Selected
Item 18	1.048	Not Selected
Item 19	3.524	Selected
Item 20	0.926	Not Selected
Item 21	1.666	Not Selected
Item 22	3.298	Selected
Item 23	2.531	Selected
Item 24	0.891	Not Selected
Item 25	1.802	Not Selected
Item 26	1.628	Not Selected
Item 27	2.092	Selected
Item 28	0.668	Not Selected
Item 29	1.02	Not Selected
Item 30	2.079	Selected
Item 31	1.884	Not Selected
Item 32	1.186	Not Selected
Item 33	2.827	Selected
Item 34	1.086	Not Selected
Item 35	0.863	Not Selected
Item 36	0.94	Not Selected
Item 37	4.175	Selected
Item 38	0.99	Not Selected
Item 39	4.079	Selected
Item 40	2.884	Selected
Item 41	1.864	Not Selected
Item 42	1.754	Not Selected

REFERENCES

1. Brown, A. (1987). Metacognition, executive control, self-regulation and other more mysterious mechanisms. Hillsdale, NJ: Erlbaum, 66.
2. Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *American Psychologist*, 34(2), 906.
3. Ozturk, N. (2021). The Relation of Metacognition, Personality, and Foreign Language Performance. *International Journal of Psychology and Education Studies*, 8(3), 103–115. <https://doi.org/10.52380/ijpes.2021.8.3.329>
4. Meera, R., & Krishna, D. (2020). Metacognition of adolescents in relation to their gender and residential area. *Indian Journal of Health & Well Being*, 2020, 11(1), 30–34.

Description OfThe Final Tool

The final draft of the metacognition scale consists of twenty-two items. Out of twenty-two items, nineteen positive items and three negative items. The minimum score for the tool is One hundred and ten and maximum score for the tool is twenty-two.

Validity OfThe Tool

The metacognition scale was validated by using content validity method. The draft tool was given to the supervisor and experts in the field of education for evaluating the worthiness of the items to the present study. Based on the suggestions received from experts and supervisor, some of the items were modified for the present study.

Reliability OfThe Tool

The reliability of the tool was established by using Chronbach Alpha test. The reliability of the metacognition scale was founded to be 0.93, which is consider to be highly reliable.

CONCLUSION

The investigator used the metacognition scale would be help to measure the level of metacognition of ninth standard students. Hence, the constructed metacognition scale will be very useful for the investigator to find out the level of metacognition.