

ASSESSMENT OF DEVELOPMENT OF STUDENT MATHEMATICAL COMPETENCE TEST

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ABSTRACT

This tool standardized to find out College students' Mathematical Competence in J&K. This tool consists of 17 questions covering the necessary Components of a Mathematical Competence Test. To validate this tool a pre-test out study was conducted among a random sample of 200 of students of G G M Science College, J&K, India. The results of the analyses reported have consistently shown that the developed questionnaire is having reliability and validity at 0.05 to 0.001 levels of significance.

Key words: Mathematical, Test and College Students.

INTRODUCTION:

Chomsky (1965) introduced the notion of Mathematical competence to explain exactly of what the simple math puzzle is presented. This notion of Mathematical linguistic competence is an important contribution to understand math subject. But it has been less well received by philosophers than it should have been, in part because of certain false things Chomsky said (1965) about it. In particular, he said that the mathematical options of a language, considered as a theory of competence, is an idealization, and that speakers know the rules of the correct grammar of their language.

The Items in the Questionnaire are related to:

- i. Identification of errors in BODMAS.
- ii. Identification of errors in Math sentences.
- iii. Giving multiples
- iv. Words combining
- v. Market daily purchasing
- vi. Odd maths marks identification

- vii. Suitable sign. identification
- viii. Identifying the math structure
- ix. Sentence completion

For all the questions marks are suitably divided and the total marks for all the question is 100.
The distribution of marks for each questions are given below.

Table No. 1.
Distribution of Marks

Q#	Marks	Q.#	Marks
I.	2.5	II.	2.5
III.	2.5	IV.	2.5
V.	2.5	VI.	2.5
VII.	5	VIII.	5
IX.	5	X.	5
XI.	5	XII.	10
XIII.	10	XIV.	10
XV.	10	XVI.	10
XVII.	10	Total	100

To validate this tool a pre-test out study was conducted among a random sample of 200 of students of G G M Science College, J&K, India

Split-half method was adopted to find out the Reliability and validity of the items. By calculating Test significance, items are selected. The details of calculated values are given in Table No.2 and 2.

TableNo.2

The reliability co-efficient and test of significance for items of Mathematical Competence Test

S.#	Items	N	Reliability Coefficient	Test of significance	Level of significance
1.	X1	200	0.112	1.996	0.01

2.	X2	200	0.125	1.986	0.01
3.	X3	200	0.069	1.975	0.01
4	X4	200	0.217	3.204	0.05
5	X5	200	0.205	3.011	0.05
6	X6	200	0.07	1.989	0.01
7	X7	200	0.11	1.966	0.01
8	X8	200	0.24	3.583	0.05
9	X9	200	0.29	4.455	0.05
10	X10	200	0.365	5.925	0.05
11	X11	200	0.134	1.990	0.01
12	X12	200	0.236	3.516	0.05
13	X13	200	0.206	3.027	0.05
14	X14	200	0.266	4.027	0.05
15	X15	200	0.242	3.617	0.05
16	X16	200	0.208	3.059	0.05
17	X17	200	0.203	2.979	0.01
	Total	200	0.208	3.059	0.05

X- Represents questions in the tool

Calculated reliability values and test of significance shows that the statements are having reliability.

Table No.3

The validity co-efficient and test of significance for the items used in the study

S.#	Items	N	Validity Coefficient	Test of significance	Level of significance
1.	X1	200	0.334	5.210	0.05
2.	X2	200	0.353	5.612	0.05

3.	X3	200	0.262	3.923	0.01
4	X4	200	0.465	8.210	0.001
5	X5	200	0.452	7.939	0.001
6	X6	200	0.264	3.923	0.01
7	X7	200	0.331	5.210	0.05
8	X8	200	0.489	8.776	0.001
9	X9	200	0.538	10.37	0.001
10	X10	200	0.604	13.19	0.001
11	X11	200	0.366	5.819	0.05
12	X12	200	0.485	8.776	0.001
13	X13	200	0.453	7.939	0.001
14	X14	200	0.515	9.699	0.001
15	X15	200	0.491	9.073	0.001
16	X16	200	0.456	7.939	0.001
17	X17	200	0.450	7.175	0.001
	Total	200	0.456	7.677	0.001

X- Represents questions in the tool

Calculated validity values and test of significance shows that the statements are having validity.

On the basis of test significance, all the items are retained.

Percentile Norm-

Norms have been worked out for the Test.

The Percentile norm in respect of the entire sample and its sub sample were computed for the Test.

Table No.4

Percentile Norm for Linguistic Competence Test

Percentile	Score Range	Norm
Below P ₃₅	0-35	Poor
P ₃₅ -P ₇₀	36-70	moderate
Above P ₇₀	71-100	High

CONCLUSION:

The results of the analyses reported have consistently shown that the developed questionnaire is having reliability and validity at 0.05 to 0.001 levels of significance. Hence this can be used for testing Mathematical Competence.

References

Hecht, Lawrence W. 1980. Validation of the New Jersey College Basic Skills Placement Test. Unpublished Report. Princeton, N.J.: Educational Testing Service.

Edwards, L. Allen, (1957). Techniques of Attitude Inventory Construction. Vakils Feffer and Simons, Bombay.

Henry E. Garrett, (1961). Statistics in Psychology and Education. Paragon International Publishers, New Delhi..

http://en.wikipedia.org/wiki/Questionnaire#Basic_rules_for_questionnaire_item_construction.

Tienson, John, "Linguistic Competence" (1983). Transactions of the Nebraska Academy of Sciences and Affiliated Societies. Paper 259.

<http://digitalcommons.unl.edu/tnas/259>

http://www.academia.edu/1255974/Universal_Grammar_and_Language_Acquisition_Device