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To measure and showcase EQ (emotional quotient) & IQ (intelligent quotient) using MAB (multidimensional aptitude battery).

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***Abstract* - This project presents Intelligence and intellectual abilities represent hypothetical constructs inferred from a wide variety of observational, psychometric, laboratory, and field studies. As such, this construct system cannot be observed directly, but rather is inferred by observing the set of behavioral exemplars bearing on these constructs. In this respect intelligence is little different from constructs used to interpret physical events, such as temperature or electromagnetic fields. A very wide variety of intellectual processes enter into intelligent behavior. These processes can be tapped by test contents and formats of enormous diversity. The correlations between tests and the appearance of group factors will be a function of the extent to which similar processes are elicited in different intellectual tasks. The great majority of measures of cognitive abilities have been found to relate positively, therefore it is useful to describe intelligent behavior in terms of a general factor, together with a set of intellective and non- intellective group factors**

Keywords: Ability, Cognitive, Enormous, Diversity, Intelligence, Intellectual Task, Group Factor, MAB, Percentile, Psychometric, Quotien

1. INTRODUCTION

The first large-scale implementation of modern group cognitive ability testing was by the psychologists who developed the U.S. Army's personnel classification battery which contained both group and performance sub-tests. In fact, standardized intelligence scales have become the criterion against which we appraise intellectual functioning. However, there is at least one serious drawback in applying certain multi-scale intelligence tests even more widely, namely, that they require individual administration and scoring by a specially-trained professional. It is true that on certain occasions, clinical observations of a respondent's test-taking behavior are helpful. As well, the mentally challenged and some psychotic patients require individual administration. But for the majority of examine for whom one requires estimates of intellectual functioning, individual administration is costly and unnecessary. Indeed, when group tests of intellectual ability have been compared with the Wechsler scales for predicting such criteria as academic achievement, individually administered tests have, in general, shown no advantage in yielding higher predictive validities. This then leads to the question of whether it is possible to incorporate some of the widely acknowledged positive features of individually administered multi-scale tests into a structured for mat permitting group administration, automated administration, and convenient hand or machine scores. It was the author's intent in designing the MAB to evaluate the degree to which this was possible. The online IQ test is designed as a convenient, objectively- scorable measure of intelligence. The features include reusable item booklets, hand scorable answer sheets and easy to administer. The manual provides scale descriptions and suggests occupations that may be relevant to high scores on each sub-scale.

II. Headings and Footnotes

•***Age Group Norms***

Subtest raw score means and standard deviations were computed for each age group. Because the mean education level for the three older age samples (55-64, 65-69 and 70-74) was somewhat elevated over the population education mean, the raw score means of these three groups were adjusted using a regression modification that took into consideration the population education mean, the sample education mean, and the correlation between subtest scores and education level. The subtest means and standard deviations for each group were then plotted and smoothed using a least squares criterion. The resulting means and standard deviations were used to calculate the scaled score (a standardized score with a mean of 50 and a standard deviation of 10) and percentile equivalents of raw scores presented. These scaled score equivalents should be used for comparing a respondent's scores to his or her age group only. They should not be used for converting raw scores to scaled scores in the calculation of Verbal, Performance, and Full Scale battery scores.

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Rather, the Scaled Score Conversion Chart contained in the MABII Record form should be used.

• Scaled Score Conversion Norms

Subtest raw score means and standard deviations were also computed for the entire norming sample. Again, scores in the three older age samples were adjusted for education using the regression modification described above. The subtest means and standard deviations for the entire sample were also plotted and smoothed using a least squares criterion. The resulting means and standard deviations were used to produce the scaled score equivalents of raw scores found on the MAB-II Record Form.

•Verbal, Performance and Full Scale Battery Norms

Verbal, Performance, and Full Scale scores were calculated for each age group sample using the means and standard deviations described in the previous section. These scores were used to compute means and standard deviations for each age group, which were smoothed as reported above and used to produce the IQ, standard scores, and percentile tables.

• Reliability

• Internal Consistency Reliability

The concept of reliability applied to a test of intellectual ability has reference to the dependability of measurement the degree to which scores administered at a given time or with a given set of items will generalize over occasions or over other items drawn from the same item population. A number of other issues are relevant to estimating the dependability of scores including, for example, the degree to which scores are influenced by variations in time limits. Reliabilities were computed separately for 230 males and 285 female adolescents ranging in age from 15 to 20. These are presented in Table 4-1. It should be noted that, because individual subtests are timed, the Kuder Richardson Formula 20 will overestimate lower bound internal consistency reliabilities. However, because Verbal, Performance, and Full Scale scores are comprised of separately-timed composites of different subtests, they are not subject to that interpretation. As will be noted from Table 4-1, these reliabilities range in different age groups from .94 to .97 for the Verbal Scale, .95 to .98 for the Performance Scale, and .96 to .98 for the Full Scale

•Test-Retest Reliability

It is of considerable interest in cognitive assessment to establish the degree to which measures taken at a given time are stable and generalizable over future occasions. Evidence of stability is necessary for the confident use of a test for predicting future behavior. It was decided to evaluate the stability of scores in a psychiatric hospital setting. Although it was recognized that other populations might yield higher stability, this setting was chosen because it is a typical clinical application and because stringent evaluation of test-retest reliability.

• Effects of Time Limits

One objective in test construction was to develop a test which combined speed and power, one with sufficiently difficult content as to challenge the gifted, and one which would reward not only quality of performance but, as well, quantity in a given unit of time. These two aspects of performance are related, but it is important to establish that performance on timed tests is not overly determined by a speediness factor. Two studies were conducted to evaluate the effects of varying time limits. In the first of these, respondents were asked to draw a line on their answer sheets after items completed on eac h subtest during a seven-minute time period; they were then permitted to work for an additional three minutes. Table 4-4 presents a comparison of means and standard deviations between the seven and ten-minute time limits and Table 4-5 presents the corresponding correlation matrix. The Verbal Scale cognate subtest correlations are uniformly very high, ranging from .91 to .96, while the Performance Scale values were somewhat lower, ranging from .78 to .92. Verbal, Performance, and Full Scale correlations were .97, .94, and .96, respectively. It is clear that the rankings of respondents are highly similar on Verbal, Performance, and Full Scale scores between the seven and ten-minute time limits. On the basis of these findings it was decided to employ the seven-minute time limit as the standard for each subscale.

• Scale Interco relations and Factor Analyses

Perusal of these correlations reveals a tendency for Verbal scales to be more highly associated with other Verbal scales and Performance scales to be more highly correlated with Performance scales, a trend also revealed in the factor analytic results A principal components factor analysis was undertaken for the sample of 3,121 male and female high school students based on the correlations reported in Table 4-6. Two factors were

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retained, corresponding to the two factors whose associated eigenvalues exceeded unity.

III. ILLUSTRATIONS OR PICTURES:

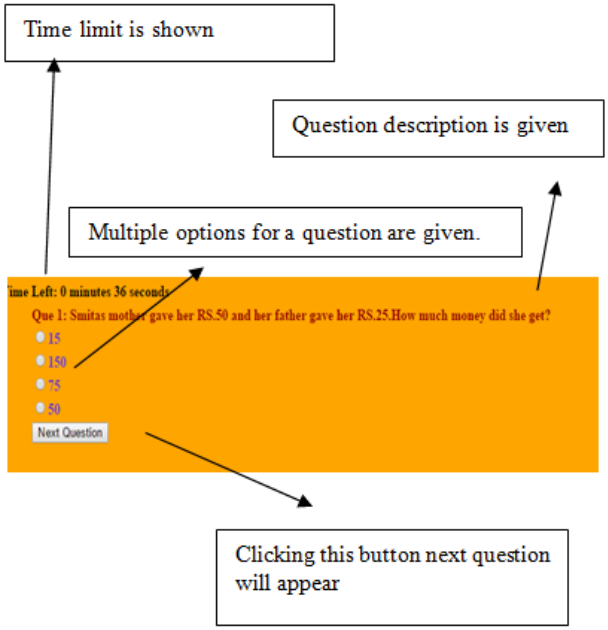

Fig.4. 3 : Question Page

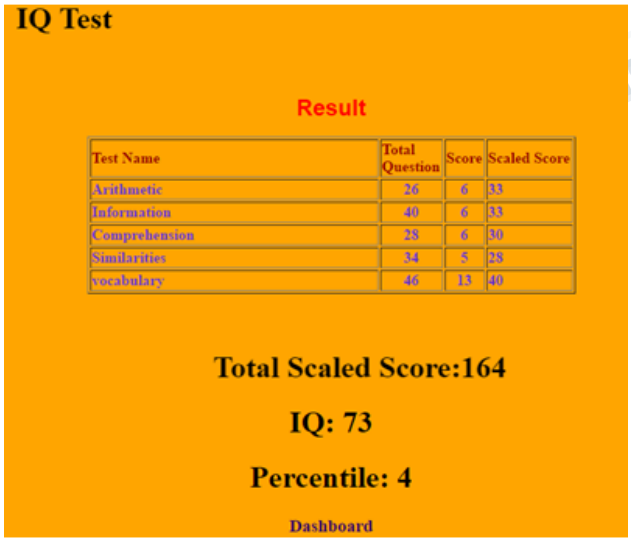

Fig.4. 5: Result page

IV. TABLES, FIGURES AND EQUATIONS:

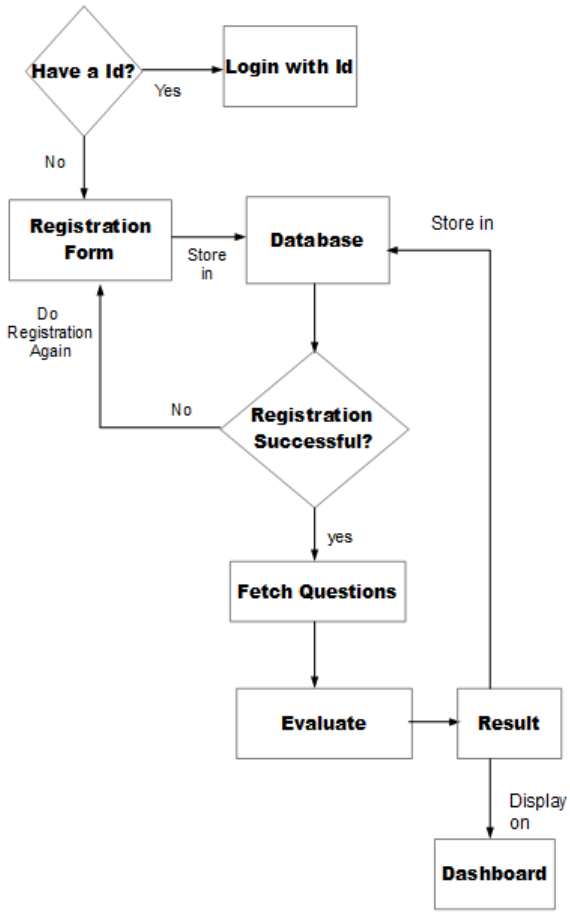

Fig. flow diagram of IQ and EQ test.

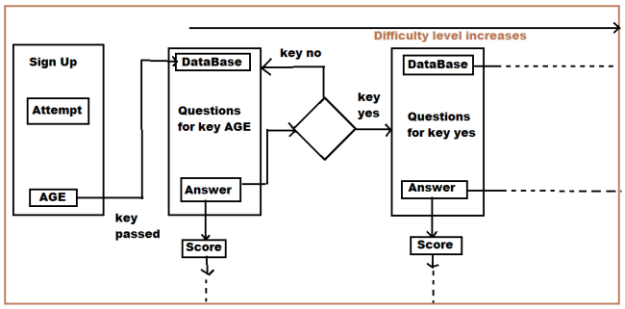

Fig. flow diagram of fetching questions.

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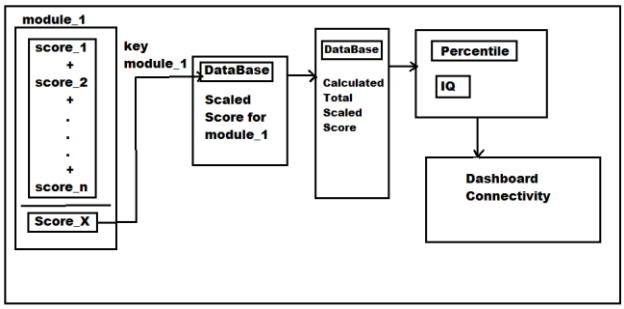

Fig. flow diagram of fetching result.

V. EQUATIONS:

• ***Marks Calculation:***
• The user has been allotted 1 marks for each correctly answered question and they are stored in the session array ($_SESSION ['marks']). Now before displaying marks to the user, we need to calculate the total marks, this is done by iterating through the array and counting 1's (1 was given for correct answer) in the array. So, this count will indicate the total marks of the candidate.
• ***Raw_score to Scaled_score conversion:***
• The total marks calculated in the mst. score table is now converted into its corresponding scaled score by using the data stored in the mst. result table.
• By using the scaled score the IQ score and percentile can be calculated.

Results page will display:
1) Total marks obtained
2) No of questions answered correctly
3) No of questions which are wrong.
4) Total scaled score
5) IQ score
6) Percentile

VI. CONCLUSIONS

• The online IQ test is designed successfully and is also tested on its different parameters.
• It will be helpful for admin to calculate the scaled score of the candidate as per the marks obtained by the candidate in the test.
• People appearing for examination will experience a user friendly user interface and can attempt test in an easy way.
• The questions and answers are correctly evaluated and marks are given as per marking scheme.
• It can also be used in future for any other quiz/test since we only have to change questions in database.

REFERENCES

[1] Liu Feng, Yong Shi. The Search Engine IQ Test based on the Internet IQ Evaluation Algorithm, Proceedings of the Secondi. International Conference on Information Technology and Quantitative Management, Procedia Computer Science, Volume 31, 2014, Pages 1066-1073.

[2] Liu Feng, Yong Shi, and Bo Wang. World Search Engine IQ Test Based on the Internet IQ Evaluation Algorithms. International Journal of Information Technology & Decision Making.2015 3(1)

[3] Y. Aguiar, M. Vieira, E. Galy, J. Mercantini, and C. Santoni, "Refining a user behavior model based on the observation of emotional states," in Proc. COGNITIVE, 2011, pp. 36–40.

[4] R. Dickerson, E. Gorlin, and J. Stankovic, "Empath: A continuous remote emotional health monitoring system for depressive illness," in Proc. Wireless Health, 2011.

[6] Bar-On, R. (2006), "The Bar-On model of emotional-social intelligence (ESI)," Psicothema, 18, supl., 13-25.