

The Use of "Psychological Tests" for Early Childhood

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Abstract—It is natural that parents who have early childhood want to know more about their child's psychological condition. Presumably, early childhood teachers are the "most appropriate" to know the psychological condition of their students, as well as other experts such as psychologists, psychiatrists and counselors. These "experts" should not be rash to use psychological tests and the results, moreover those tests that are not yet standardized or simply adopted, and not scientifically adapted in order to adapt to the conditions of early childhood and local culture. Even if it has been adapted, and it has been long enough and unsuitable with current conditions, it needs to be re-standardized. Based on preliminary studies in research and development in 2017, it is known that re-standardization is needed especially in the conversion of raw scores into standardized scores (weighted scores), including in the use of the results. This article presents the exposure of preliminary data and psychological test re-standardization procedures that scientifically then "appropriate" to use for early childhood.

Keywords—*psychological test; early childhood; standardized test;*

I. INTRODUCTION

Psychological instruments are considered "wow" and "luxury" items, whose truth is "absolute"; especially for the "common people" [1]. Presumably, if there is information conveyed by "experts" (which is not necessarily true) about the psychological state (read: mental) of a low child (read: idiot), his parents will be more restless to the stress level than if his son had a physical disorder [2]–[5]. Misuse, misunderstanding and misperceive of psychological tests need to be addressed primarily by people who care about the welfare of the community, including early childhood [6]–[8]. In this regard, early childhood education experts and practitioners are parties who should really devote attention to psychological tests (instruments) and their use.

Many instruments are circulating in a society whose the truth is in doubt. Parents already use and assume that the instrument is "right" and organized by the party who feel "experts", such as the tests that based on face shape, hand line and brain hemisphere [9]–[11]. Many conditions must be met in order to use psychological tests, so that to be "experts", in addition to the "truth" of instruments used, which related to

the validity, reliability, predictive power, differentiation, norms and other good instrument requirements [12]–[17].

In reality, if the result of using a good instrument, not necessarily "right", the child or other users feel "up", otherwise if the result is bad the user feels "down". The impact of it all will occur in the course of the child and the placement, including labeling is not appropriate in children [9]. In fact the children, especially early childhood is still in development stage which may not be predictable based on current condition [18]–[26].

Responding to all of these facts, it all required at least two attempts. First, adaptation (not adoption) in the context of adjusting psychological tests to the child's condition including norms based on age and local culture [27]–[30], [30]–[32]. The results of preliminary research and development studies [33] concluded that the need for re-standardization, especially in the conversion of raw score into standardized scores (weighted score), including in the use of the results. Secondly, although the instruments that used are "correct" (already adapted and/or developed in accordance with scientific procedures), it requires special understanding and skills to use them, thus becoming the "expert" user [30]–[32]. How the procedures for adaptation and the use of the correct instruments are scientifically presented for discussion in this article.

II. METHODOLOGY

This research is the preliminary studies in collecting data for the development research purpose, in order to develop the existing psychological test. This study aims to find a pattern, order/systematic, change, or tendency about something by using conceptually and controlled design [34] which in this case is the re-standardization of psychological tests. Data were collected through random sampling of the existing data, and completed with literature studies on psychological tests that were widely circulated among the community, including psychological tests for early childhood. Data is analyzed by simple statistics using computer program (Microsoft Excel).

III. RESULT AND DISCUSSION

From the results of data analysis found various factors that weaken the validity, reliability, and discrimination function of the results of psychological tests. Among these factors are the

norms that are "too rough", so for the sake of selection it is difficult to distinguish the psychological condition (level of ability, personality and performance) of one test with another when they get the same raw score [35]–[37]. For example, a test norm with a weighted score (in this case is Percentile Point-PP) or classification is the same for a raw score; which is probably caused by "victims of statistical grouping". Normalized and standardized (new percentile point-PP and old percentile point-PP) views are shown in Table 1.

TABLE I. THE CHANGE OF RAW SCORE TO PERCENTILE POINT

No	Raw Score	Percentile Point (Old Version)	Percentile Point (New Version)
1	76	99	98.3
2	75	99	98.2
3	74	99	98.1
4	73	99	98
5	72	99	97.9
6	71	99	97.8
7	70	99	97.7

Table 1 shows the respondents with different raw scores but the conversion to the percentile point yields the same interpretation; of respondents with a raw score of 70 to 78 has a percentile point of 99. This is contrary to one of the requirements of good tests, which a good test is a test that can distinguish the ability of one testee and another [38]–[40]. Conversion of the raw score value to more detailed rigid percentile points (as in Table 1) is one of the efforts to alleviate this problem, which is preceded by the process of re-standardizing the psychological tests on the test-taking part. An in-depth study of the conversion process also needs to be done to avoid mistakes and statistical "victims" that can occur.

Presumably in the test results of any study the condition of "victims" statistics, which is "forced" to be sacrificed, as this also happens, for example grouping the position of student scores based on the scores obtained or the level of mastery as listed in Table 2.

TABLE II. RANGE AND CONVERSION VALUE OF LEARNING RESULTS

Score	Quality Value	Quality Score
85-100	A	4
80-84	A-	3.6
75-79	B+	3.3
70-74	B	3
65-69	B-	2.6
60-64	C+	2.3
55-59	C	2
50-54	C-	1.6
40-49	D	1
≤ 39	E	0

Interpretation of the quality of learning outcomes tested in Table 2 is another example of the condition of "casualties" in statistical value groupings. Roughly classified values are responsible for the disadvantage of students/respondents. If analyzed further, if the student/respondent get raw score 79.44 then it will be interpreted to have quality value of B+ and quality score equal to 3.3, whereas if student/respondent get acquisition raw score equal to 80.02 then assumed have quality value A- and quality score equal to 3.6. This is an example of one of the disadvantages in the normality and raw roughness of the raw score that can ultimately hurt the student/respondent and wrong in the interpretation/treatment. When in fact the purpose of the use of psychological tests on testee especially in relation to education in general is to help (not harming or bring benefit) testee/ student [12], [13], [16], [22], [38], [39], [41]–[43]. Specifically, the purpose of psychological testing is for classification (selection, screening, diagnostics, certification, placement), improving self-understanding correctly, prediction, preparation and modification of programs/treatment, evaluation, and research [38]–[40].

In order to achieve the purpose of using psychological tests, both in general and in particular and avoiding the occurrence of errors, a weighted equalization and equalization effort is required for each data with due regard to their respective achievements; including in interpretation and its use. The process is one of them achieved by re-standardization of psychological tests by taking into account all the components, attributes and specific things attached to the testee/person who took the test. All such endeavors, whether the procedures for administering, scoring, interpretation, interpretation and interpretation and their use (individually and in groups) should be contained in a manual book. In this connection, the user (tester) must learn and understand in depth and guided the manual book before administrating psychological tests [44]–[47].

In addition, the re-standardized process also takes the demographic conditions of the population and the standard of norms. The demographic conditions are (1) social status, (2) local culture, (3) age, (4) origin of area [48], (5) gender. The need for adaptation that is appropriate to the condition of the population, especially the local culture is to avoid bias so that it can be detrimental to testi [49].

Another alternative in re-standardizing the measuring tool is by applying the Rasch Model calculation, so it can be seen the accuracy of the problem and the condition of the respondent/ testee to the items. The description of the model can be seen in Table 3.

Table 3 is the result of an analysis of the raw score of a psychological test using a sample of 60 people, but in this article only shows 10 respondent data for further analysis. Each of these respondents can be classified in detail and depth through the logit value; if the logit value is higher, it can mean the respondent/testee is at a high level of ability exceeds the other testee in the population, and vice versa if the logit value shows the negative gain can be concluded that the level of ability of the respondent/testee is in low position.

TABLE III. SUMMARY OF LOGIT ITEM RESULTS WITH RASCH MODEL

No	Respondent's Sort Number	Value of Respondents Logit
1	5	4.36
2	1	3.14
3	26	2.87
4	37	2.62
5	55	2.39
6	49	2.18
7	41	1.99
8	59	0.28
9	30	-0.13
10	60	-0.26

Respondent/testee at number 5 is the respondent/testee with the highest logit value (4.36 logit) and is the only one with the acquisition, on the contrary the respondent with the sequence number 60 is the respondent with the smallest acquisition (-0.26 logit). This scale is one of the adequate alternatives for grouping of respondents based on their level of ability to answer questions while keeping in mind the difficulty level of the problem.

TABLE IV. TABLE 4 EXAMPLE OF CONVERSION OF RAW SCORE BY AGE ON GOODENOUGH DRAW A PERSON TEST

Raw Score	Mental Age	Raw Score	Mental Age
1	3-3	41	13-3
2	3-6	42	13-6
3	3-9	43	13-9
4	4-0	44	14-0
5	4-3	45	14-3
6	4-6	46	14-6
7	4-9	47	14-9
8	5-0	48	15-0
9	5-3	49	15-3
10	5-6	50	15-6
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From Table 4 it is known how important it is to compile a test norm according to the age level of the test. In the table it is seen that mental testes (mental age-MA) 3.3 years should receive a score of 1 for a test; testee is mentally 15.6 years old the raw score is 50. Example in the test of ability (intelligence), if 4-year chronological test (CA) and get a raw score with mental age 4.3, then the corresponding (testee) ability level is 107,5; but if MA is equal to CA then the testee ability level is 100 (average/normal).

In relation to the measurement or assessment of psychological conditions (early childhood ability, emotional, social development, personality), the prudence from the tester is required. Especially if it is associated with the condition of early childhood which is at a stage of rapid development [18]–[26]. Likewise when associated with the tempo and rhythm of unequal development among early childhood [18], [50]–[53]; according to the principle of individual differences [18], [54], [55]. In this case the data cannot be interpreted immediately and necessarily treat the data as one (not the only) information about the condition of early childhood [56]–[60].

IV. CONCLUSION

Psychological tests are often regarded as a "wow" and "luxury" goods, whose truth is "absolute"; especially for the "common people". Though not necessarily all psychological tests are used, especially by certain elements in relation to the business has not qualified as a good test. Sometimes it happens (especially with deliberate) errors that can harm various parties (testee, parents, teachers and others); such as testee being "down" or "up", mislabeled and wrong in giving testee treatment. Such errors can occur in the instruments used, the administrative process, the scores, the norms, the interpretation / interpretation, the use and management of the indications.

In an effort to anticipate all the errors and impacts of the use of psychological tests, standard tests are required and always re-standardize the tests, so they are suitable and appropriately used in accordance with test conditions; including age, gender, culture, and testicular developmental levels. This needs to be done to testee all ages, especially the early childhood who is still in the stage of rapid development and has a tempo/rhythm of varied development

In addition, test users (tester) need to be careful and always guided by the manual book in using psychological tests. So also stakeholders should not be reckless, too "down" and despair, give a label / stamp is not good or too "up" and pride them in interpreting the results of tests that ultimately can harm various parties, such as wrong in treating the early childhood children.

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