Analysis of The National Character Senior High School Students by Using Rasch Model

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Abstract. The Indonesian educational ministry has moved to emphasize the national character education as an integrated element in the 2013 curriculum. Character is nurtured through a continuous process with character education. The result of which, is the development of students' characters, which fits the general community's aspirations. The study objectifies to describe the national characters of students of upper middle school in southern Sulawesi Province, using the national character inventory (IKB). The analysis of data for the study is of quantitative manner, and is be done using the Rasch model of measurement. The result of the study points to the students' characters leans towards religiosity and appreciating performance and skews away from creativity.

Keywords: Character Achievement of Students and The National Character Inventory.

1 Introduction

Character is exclusive to humans. Lickona defined character as conscience, emotion, and action [1]. Character is developed from a value system that is formed by the individual [2]. Value functions as Confidence, standard, guide and motif that develops character [3], [4]. The process to develop and mold a person's character is called character education [5], [6].

A study done by Kibler et al[7], pointed to the lack of character strength as a reason for juvenile delinquencies to happen. Furthermore, Josephnson [8]mentioned that 82% of students admitted that they have lied to their parents and 60% of the students have lied in tests. Consequently, Hart and Carlo [9]contended 75% of juvenile delinquencies is caused by a weak character.

Competency and character is a symbiotic union that is dependent on each other [10], [11]. A student having the characteristic qualities of: honesty, hardwork, religious, appreciative of learning opportunities and discipline, has a better chance of achieving high academic performance than a student having little or absent of such qualities [12], [13]. A study by Berkowitz and Hoppe[14] found out that students with high self-esteem are better facing stress and making independent decisions than students who has low self-esteem. In lieu of this, Indonesia is placed in 115 out of 139 countries on the Global Creativity Index (GCI) for 2015 [28]. This survey is done by the Martin Prosperity Institute, in evaluating the creativity index of a country [28]. Thus, this points to a lack of creativity, which may have its roots in the strength of character of Indonesian youth

Character Education is an integral component for the development of a nation and its people. The loss or weakening of the character of a community will lead to the loss of the character that defines a group of people. Character plays an important role in driving and

determining the strength of a group of people and holding it steadfast. Character must be nurtured and developed to produce a strong and dignified people as it is not something that develops on its own [15]. Character development in Indonesia must be focused on three factors which are: nurturing and strengthening national identity, strengthening Indonesia as a unified country, and Indonesians having positive virtues and a dignified people [16].

Individual character is not hereditary, in fact, it is developed continuously through thoughts and actions on a daily basis, which consequently means that, character development is a continuous and conscious effort. students' character is an outcome of a learning experience [17]. This entails that character is a product of an educational process, and thus needs to measured [18]. Hence, the development of a measuring mechanism that is valid and reliable is imperative.

One of the major theoretical approach used in character measurement is the theory of character precedence and strength. The theory has 6-character precedence values and 24 character strength values. Wahyu Hidayat[19] in his study, merged a few theories and developed a national character inventory or Inventori karakter bangsa (IKB). The inventory unifies the theory of character precedence and strength and essential values from religions and the 'Pancasila' (the core values of the Indonesian nation). The IKB has 18-character values which are: religiosity, honesty, tolerance, discipline, hard work, creative, independent, democratic, inquisitive, national pride, love of country, appreciation of performance, friendship or communicative, love, peace, love of reading, love of environment, socially conscious, and responsibility.

Inventory is one of the instruments that has been used repeatedly in identifying and measuring the structure of character, personality, thought process, emotion, and actions [20]. Hence, the character inventory used, can illustrate the traits of individuals on their characters, with the objective of individuals having a deeper understanding of themselves, from an objective point of view.

2 Research method

2.1 Participants

The study was administered on 550 samples. The sample can be broken down to 300 females (54.55%) and 250 males (45.45%). The religion break down is 300 Muslims (54.55%) and 250 Christians (45.45%). The ethnics involved are Bugis 300 (54.55%) and 250 (45.45%) Tanah Toraja (Tator). The type of schools involved are 300 students (54.55%) from the middle schools and 250 students (45.45%) are from technical middle Schools.

2.2 Measures

The inventory used (IKB) consist of 81 items and 18-character values, with alpha Cronbach value of (KR-20) 0.78.

2.3 Statistical analysis

The study applied the Rasch Model Analysis as its statistical tool. The Rasch Model Analysis is a measurement model the evaluates the values of items in the instrument developed based on certain criteria. The models can change raw data to interval data of the equal values

between unit to another [21]. The model can calculate how the items and respondents interact, that is illustrated concurrently, in an analysis that shows the ability of the students and the difficulty of item, using the same linear scale [22], [23].

3 Results

The item measure for IKB is represented in Table 1.

Table 1. Item measure for IKB.

No	Logits	Items
1	1.23	Having a lot of ideas
2	1.16	Inclination Towards creating something that is new and different
3	1.16	Having the initiative to answer teachers' questions
4	1.12	Inclination Towards creating something that is new
5	1.09	Giving Ideas when asked for
6	0.89	Having ideas that are creative and innovative
7	0.44	Congratulate friends
8	0.27	Avoidance of slander in all matters
9	0.27	Visits sick friend
10	0.22	Avoidance of hoaxing in taking exam matters
11	0.22	A person of his/her words
12	0.15	Fully focused when learning
13	0.14	Utter Salam to friends in and out of schools
14	0.13	Equal treatment to all regardless of who they are
15	0.13	Provides Equal workload to al team members
16	0.12	Does not mind with littered garbage although he/she is able to clean it
17	0.12	Prioritize the Indonesian language within the school compound
18	0.09	Maintaining teamwork with all team members when doing the assigned task
19	0.06	Nonchalance attitude when seeing people vandalizing public park
20	0.06	A strong belief in self
21	0.05	Prioritize local products than imports
22	0.05	Pride of being born in Indonesia
23	0.05	Giving critique to friends
24	0.04	Routinely reads the holy scripture
25	0.04	Hard to give help to others
26	0.03	Always returns borrowed goods
27	0.03	Does not give up in understanding hard subjects when learning
28	0.01	A tendency to defend the diverse language, culture, and etnics of Indonesia
29	0.01	Rarely gives donations although more than capable
30	0.00	Reliable in entrusting care of friends' goods
31	0.00	Willing to sacrifice for the Good of Indonesians
32	-0.01	Let the needs of the many outweighs the needs of self
33	-0.01	Always strife to find extra information on subjects learned
34	-0.03	involved in maintaining the unity of Indonesians
35	-0.03	Easy to give when faced with obstacles in learning
36	-0.03	Always seek apology when commit something wrong
37	-0.04	Respects other religion prayers and practices
38	-0.04	Learned the history of the region
39	-0.05	Having interest in new elements in academia
40	-0.06	Likes to fool around than read

41	-0.07	Friends irregardless of different religions
42	-0.07	Do not like to litter
43	-0.08	Respectful of other peoples' ideas in a discussion
44	-0.10	Avoids littering
45	-0.10	Always self-reliant
46	-0.11	Difference of opinions with friends does not entail hostility
47	-0.11	Accepts ideas of friends in explaining something new
48	-0.11	Appreciative of friends' ideas although they may be on the contrary to his/her ideas
49	-0.11	Accepts the risk of the decision made
50	-0.12	Reading is a hobby
51	-0.13	Does not belittle others of different ethnic, culture and language
52	-0.13	Comes to school early before the bell rings
53	-0.14	Respectful of cultures from other regions
54	-0.16	Always discusses each class problem with classmates
55	-0.16	Let problem faced be as it is, without trying to find solutions
56	-0.17	Say things as it is although risky
57	-0.19	Avoid carving and sticking things on trees
58	-0.19	Avoid fighting in school
59	-0.19	Finding more detailed information, although already explained by the teacher
60	-0.20	Routinely goes to the library to read
61	-0.20	Open minded and easy to talk to
62	-0.21	Dependable in holding positions
63	-0.21	Always think of the best solutions in facing learning problems
64	-0.21	A tendency of being Aggressive and rough in conversations
65	-0.22	Performs prayers without being told
66	-0.22	watches Indonesia sports game, even when favorite shows are on at the same time
67	-0.23	Law abiding in school
68	-0.24	Always ungrateful
69	-0.24	Forces self to read everyday
70	-0.26	Tries to do his/her job without the help of others
71	-0.27	Always violates the traffic light regulation
72	-0.30	Always contributes to people who ask for alms
73	-0.30	Always gives up on things that is doable
74	-0.31	Never plays truant
75	-0.32	Likes telling humorous stories
76	-0.34	Starts doing anything with prayers
77	-0.35	Prays out of own belief
78	-0.38	Always says thanks to god
79	-0.39	Always copy paste in doing assignments
80	-0.46	Always put in effort in doing that is beneficial to others
81	-0.79	Always behaves in manners that does not hurt others' feelings

Based on Table 1, the highest logits values show strong disagreement, while the lowest logits values point to strong agreement.The result of the analysis showed that the lowest agreement for charater traits of the students is "Having lots of ideas" (1.23 logit). Meanwhile the character trait that shows strong agreement by the students is "Always behaves in manners that does not hurt others' feelings".

The other five characters that the students showed strong disagreement in having are: "Having a lot of ideas" (1,23 logit), "Inclination Towards creating something that is new and different" (1.16 logit), "Having the initiative to answer teachers' questions" (1.16 logit), "Inclination Towards creating something that is new" (1.12 logit), and "Giving Ideas when asked for" (1.09 logit). Meanwhile, the five character traits that the students showed strong

agreement to is : "Prays out of own belief" (-0.35 logit), "Always says thanks to god" (-0.38 logit), "Always copy paste in doing assignments" (-0.39 logit), "Always put in effort in doing that is beneficial to others" (-0.46 logit), and "Always behaves in manners that does not hurt others' feelings" (-0.79 logit). The average of the character traits values is shown in Table 2

Table 2. Average of item measure values for national characters.

No	Constructs	Difficulty average (Logit)
1	Religosity	-0.25
2	Honesty	+0.05
3	Tolerance	-0.08
4	Observance of Nature	-0.01
5	Discipline	-0.23
6	Democratic	+0.005
7	Love of Nation	+0.005
8	Patriotism	-0.008
9	Creativity	+1.108
10	Inquistive	-0.09
11	Love of Reading	-0.155
12	Hardwork	-0.09
13	Self Reliant	-0.010
14	Socially Aware	+0.07
15	Love of Peace	-0.127
16	Friendship	-0.143
17	Appreciation of Performance	-0.267
18	Responsibility	0.003

Result of the analysis showed that the students have the qualities of: Creativity (+1.18 logit), Honesty (+0.05 logit), and Socially Aware (+0.07 logit) the least. The national character the students showed strong agreement to are: Religiosity (-0.248), Appreciation of Performance (-0.267 logit), Discipline (-0.226), Friendship (-0.143 logit), Love of Peace (-0.127 logit), Love of reading (-0.155 logit), and Inquisitive (-0.09 logit).

4 Item and respondent reliability in IKB

The acepted item reliability index for this study is over 0.70 as it is considered a sufficient value [24], [25].Table 3 details the item reliabilty in the study:

Table 3. Item dan person reliability.

	Reliability		Cronbach Alpha (KR-20)
	Item	Person	
Real RMSE	0.97	0.79	
Model RMSE	0.97	0.80	0.80
Separation	3.33	2.74	

The result of the item reliability analysis showed that reliability level is at 0.97 which is very high and nearing the maximum value of 1[26]. The persons' reliability is at 0.80, which is

at a good level. Furthermore, the Cronbach Alpha (KR-20) is at 0.80. this value points a respondent consistency in using different items but testing the same construct [27]. The number of samples involved in the study is also shown to be sufficient by these results, in developing the instrument to gauge the Indonesian national character.

The item separation index of the study is at 3.33, which leads to the items being divided to three different levels of: high, medium, and low. A separation index that is above two is accepted as valid. Figure 1 shows students' character tendency according to the 18 characters proposed
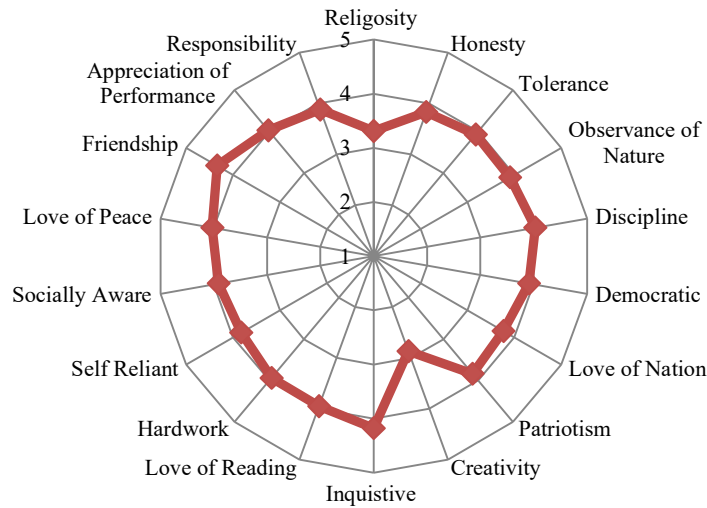
Fig. 1. Character tendency of the national characters of students.

Female students exhibit a higher tendency towards religious, honesty, inquisitive, and responsibility characters than male students. The male students meanwhile, showed a tendency to characters such as friendship, tolerance, hard work, and patriotism

Figure 2 illustrates the tendencies of the 18 characters of Senior High School students according to their religious backgrounds of Islam and Christianity.
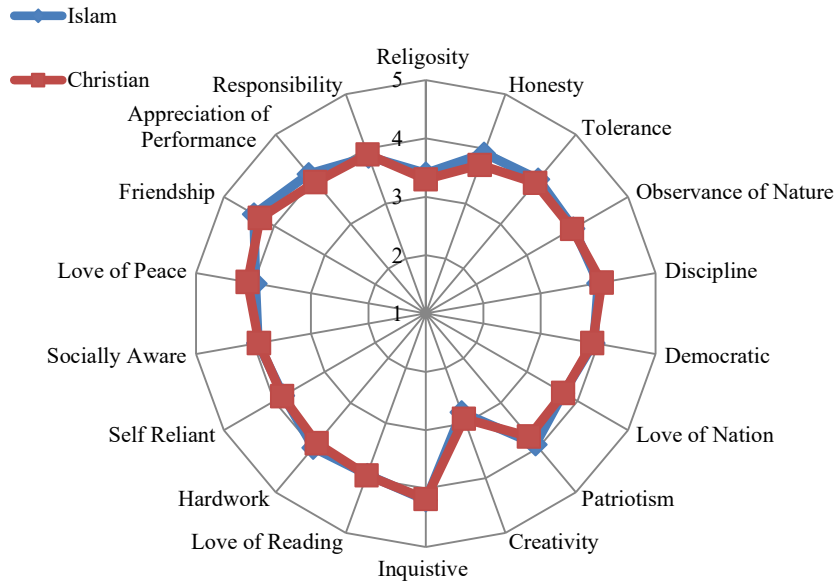
Fig. 2. Character tendencies according to religious backgrounds.

Figure 2 illustrates all the characters have the same tendencies irrespective of their religious backgrounds. There are minimal differences to the religious and honesty characteristics, with relative differences.

5 Discussion

The result of the study points to the fact that the character which the students have weak affiliation to is "having a lot of ideas", which supports a few researches done that contended to the low level of creativity among Indonesian students [28]. Contrastingly, this research also contradicts findings of Linley and Harrington [29], which states that men have stronger tendency to creativity than woman.

A study by Shimai et al. [30] mentioned that there are character differences because of tendencies towards religion. Similarly, this study found that female students have stronger tendencies than men for characters: Religious, Honesty, Discipline, being inquisitive, and responsibility. One of the hallmarks of the religious character is being thankful, and in Linley & Harrington [29] study, it is concluded that women have stronger tendency than men to feel thankful, similar to this study. This study also concluded that men and women have equal level of tendency in being socially conscious. This is different from findings of Linley & Harrington [29], which states that women have stronger tendency than men in being socially conscious. Men on the other hand have strong tendency to be creative [30]. It is largely believed that the

strength of character is largely influenced by the spiritual and religious strength of a respondent [30].

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