

# Developing an Emotional Intelligence Instrument for Teacher Student

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**Abstract**—The purpose of this study was to develop the valid and reliable emotional intelligence instrument for teacher student. The benefits of this development were the availability of emotional intelligence instrument teacher candidates that can be used to educational institutions. This research followed the Gable method. The construct of emotional intelligence instrument was judgment by seven experts. Pilot phase carried out on 630 teacher students on Bengkulu University. Data were analyzed by using content validity, CFA, IRT PCM, concurrent validity, convergent validity, and reliability coefficient. The result showed that emotional intelligence instrument has content validity index of 0.814. The instrument has a goodness of fit statistics the instrument of emotional intelligence eligible partial credit model. The concurrent validity of 0.366. The convergent validity of emotional intelligence was 0.806. The reliability coefficient of 0.699. Thus, emotional intelligence instrument has qualified content validity, concurrent validity, and convergent validity, and reliability coefficient.

**Keywords**—*emotional intelligence, content validity, CFA, concurrent validity, convergent validity, reliability coefficient*

## I. INTRODUCTION

National Education serves to develop the ability and character development and civilization of the nation's dignity in the context of the intellectual life of the nation. It is aimed at developing students' potentials to become a man of faith and devoted to God Almighty, noble, healthy, knowledgeable, skilled, creative, independent and become citizens of a democratic and accountable. To achieve this it is necessary that education personnel are able to realize these very laws. The law of teachers and lecturers number 14 2005 article 7, paragraph 1, point a demanding their specific requirements including the talents, interests, calls the soul and ideals. Professorship is noble, in which teachers are required to set an example, patience, empathy, place to gain knowledge, a place to complain problems, both academic and non-academic for learners. Thus the teaching profession is not limited to office, but it is a noble task that demands a calling to serve learners in all matters relating to education.

A comprehensive model classroom character education is described in term of nine component : the teacher as caregiver, model and mentor; creating a caring classroom environment; moral discipline; creating a democratic classroom environment; teaching through the curriculum; the conscience of the craft; ethical reflection; and teaching conflict resolution [1]. The influence of teacher toward education process and result has not hesitate [2,3]. The

influence of teacher character toward pupil growing and the success is very significant [4,5,6,7,8,9,10]. While it is clear that teacher's emotional competence plays a significant role in effective teaching [11]. The emotional abilities can be developed among teachers and may prepare them better for the complicated journey of being a teacher. It is recommended to add and focus on emotional training for pre-service teachers and practicing teachers in order to improve teachers and students' wellbeing and performance in school [12]. In Indonesia, the emotional intelligence instrument for teacher not available yet. This research aim to develop the instrument. The problem of this research are how the content validity of the instrument? How the construct of the instrument? How the reliability of the instrument?

The results of the study reveal that the respondents have high level of Emotional Intelligence. Two domains : Self-Emotion Appraisal and Understanding of Emotion of the Emotional Intelligence investigated are found to be significantly and positively associated with the respondents' academic achievement. The findings of the study hold important implications on the value of Emotional Intelligence and their relationships to students' academic performance especially among pre-service teachers [13]. The findings of this empirical study found that all the four dimensions of emotional intelligence :self-emotional appraisal, others' emotional appraisal, use of emotion, and regulation of emotion, were positively significant associated with job performance [14]. Ki Hadjar Dewatara state that three teacher role in education are *Ing Ngarso Sung Tulodho, Ing Madyo Mangun Karso, and Tut Wuri Handayani* [15,16]. The three of role require high emotional intelligence, but the developing of student teacher emotional intelligence has not seriously. In Indonesia, the emotional intelligence for student teacher has not available yet, and it is very important to develop it.

Emotional intelligence is a hot intelligence that includes social intelligence, personal intelligence. Goleman's emotional intelligence is akin to the personal intelligences posted in multiple intelligences theory [17,18]. The construct of emotional intelligence consist of five factors, there are self-emotion understanding, self-emotion management, self-motivation, empathy, and social skills. [19,20,21,22]. Emotional intelligence refers to an ability to recognize the meanings of emotions and their relationships, and to reason and problem-solve on the basis of them. Emotional intelligence is involved in the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them [23].

The teacher is authentic person who is genuine, self-aware and able to behave in accordance with his or her true feelings. The teacher sees all people as worthy of unconditional positive regard and treat them with dignity and respect. The teacher is emphatic person who understand the feeling of students and respond appropriately to those feeling [24]. Emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands [17].

In education, emotional intelligence consists of four dimensions: two intrapersonal self-awareness, self-management and two interpersonal social awareness, relationship management. It seems that emotionally intelligent teachers may function more effectively as leaders by perceiving and managing their own and their students' emotions, dealing effectively with feelings of anger or frustration, and adapting their behaviour to different situations accordingly [25].

Teacher-child closeness was positively linked with children's academic performance, as well as teachers' ratings of school liking and self-directedness. The findings highlight the importance of considering various features of children's relationships with classroom teachers when examining young children's school adjustment [26]. When a teacher is a bully and is having a negative effect on the environment, the entire work environment for the majority of the teachers is made needlessly hostile and vulnerable children suffer significant trauma, often with attendant learning and psychiatric problems. Non-bullying teachers are often forced into an avoidant, by standing role for fear of retaliation from unions, colleagues and conflicting loyalties [27]. Teachers expressed generally negative attitudes towards bullying and bullies, and were generally sympathetic towards victims, although sympathy diminished with increasing length of service [28]. Teacher caring was also positively related to students' affect toward the course and the teacher. This study demonstrates that teachers should maintain appropriate classroom behavior and communicate caring towards students to preserve their credibility and affect in the classroom [29]. Teacher's interpersonal skills are the basic skills required. Without the skills, lecturers will not able to achieve effective teaching [30,31].

The rest of this paper is organized as follow: Section II describes proposed research method. Section III presents the obtained results and following by discussion. Finally, Section IV concludes this work.

## II. RESEARCH METHOD

The development of this instrument refers to a method developed by Gable, there are consist of 15 phases, i.e. conceptual definition developing, operational definition formulas, scaling method, conceptual review, instrument formatting, determine sampling, first trial, first trial analysis, instrument revision, last trial, instrument finalizing, criteria related validity, manual instrument [32].

The construct emotional intelligence instrument consist of five factors. The each factor was translated to eight items, thus the instrument consist of 40 items. The instrument

item of emotional intelligence followed Guttman scale model [33,34]. The each item of instrument was followed by three options with gradation scoring. The each statement was followed by three possible answers graded by random to avoid choosing origin. The draft instrument that has been validated by seven experts, there were linguist, psychologist, education expert, and educational measurement expert. The analysis used the content validity formula [35,36]. Instrument legibility trials conducted to 3 undergraduate students of Mathematics, Physics, and Culinary Art at Yogyakarta State University. The participant was teacher student University of Bengkulu. The number of participant that can be used as samples are 630 people representing all of student undergraduate. The construct of teacher aptitude instrument was analysed by confirmatory factor analysis [37,38] and using LISREL software [39]. Item analysis of instruments used IRT PCM formula [40], and using the QUEST software [41]. The validity of the criteria used instruments Edward personal preference and schedule. The correlation between emotional intelligence score and EPPS score be compute by product moment formula, and the convergent validity using multi-trait multimethod matrix method [42].

## III. RESULT AND DISCUSSION

The items consist of narratives cases seen daily, followed by 4 option. The option is graded statements, four options are arranged randomly, so it is not easy to guess the score. The experts advise 4 options becomes 3 options, because of transform and construct four graded options is very difficult. The sample of instrument item empathy factor, before validation and after validation expert can be presented following.

You met student who has capable below average. How do you feel looking at him/her?

- 1) *I think reasonable, there are less students or smart.*
- 2) *I felt sorry, he needed help.*
- 3) *I want to help, but do not know how.*
- 4) *I am trying to help him/his best.*

You met student who has capable below average, you are not known him/his. How do you feel looking at him/her?

- 1) *I want to help, but do not know how to help him.*
- 2) *I feel sorry for, he needed help.*
- 3) *I am trying to help him/his best.*

The result score of expert judgment emotional intelligence construct and instrument item can be presented as following.

TABLE I. THE CONTENT VALIDITY INDEX OF EMOTIONAL INTELLIGENCE

	Factor	Validity index	p
Emotional intelligence	self-emotion understanding	0.851	0.050
	Self-emotion management	0.821	0.030
	Self-motivation	0.821	0.030
	Empathy	0.821	0.030
	Social skills	0.821	0.030
	Average V.I.	0.814	0.013

Table I shows the content validity index of self-emotion understanding was 0.851 and p value was 0.050 equal to maximum probability of error was 0.05, and the factors of self-emotion management, self-motivation, empathy, social skill was 0.821 and p value was 0.030. There by construct validity of the instrument meets the good contents.

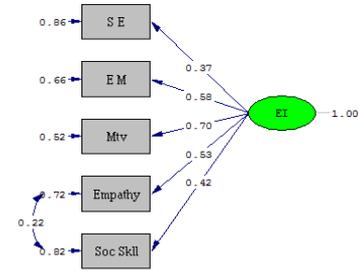
Table II below shows the emotional intelligence instrument consists of 40 items.

TABLE II. THE ALL OF ITEM CONTENT VALIDITY INDEX (VI)

No	VI	p value
1	0.855	0.006
2	0.855	0.006
3	0.855	0.006
4	0.819	0.012
5	0.819	0.012
6	0.785	0.023
7	0.785	0.023
8	0.820	0.012
9	0.856	0.006
10	0.892	0.003
11	0.856	0.006
12	0.856	0.006
13	0.820	0.012
14	0.928	0.001
15	0.820	0.012
16	0.856	0.006
17	0.856	0.006
18	0.892	0.003
19	0.820	0.012
20	0.856	0.006
21	0.820	0.012
22	0.856	0.006
23	0.892	0.003
24	0.856	0.006
25	0.892	0.003
26	0.892	0.003
27	0.856	0.006
28	0.856	0.006
29	0.892	0.003
30	0.856	0.006
31	0.856	0.006
32	0.856	0.006
33	0.856	0.006
34	0.820	0.012
35	0.856	0.006
36	0.820	0.012
37	0.856	0.006
38	0.856	0.006
39	0.820	0.012
40	0.856	0.006
average	0.851	0.006

There are 33 items, or 82% with validity index amounted to 1, while 9 items or 18% with validity index was 0.86. Overall average emotional intelligence validity index was 0.852, and p value was 0.006. Thus emotional intelligence have good content validity index, so it's worth doing trials in the field.

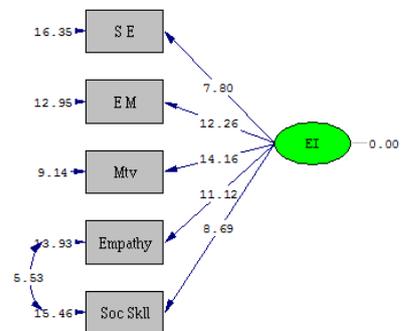
Figure 1 shows that result of CFA the Chi-square of 4.63, degree of freedom of 4. Its mean that chi-square value smaller than 2df.



Chi-Square=4.63, df=4, P-value=0.32747, RMSEA=0.016

Fig. 1. CFA standardized of Construct EI

The p value of 0.32747 > 0.05, and RMSEA < 0.08. There were means the emotional intelligence construct is goodness of fit statistics [39,43]. Each loading factor 0.37, 0.58, 0.70, 0.53, and 0.42 larger than 0.30, it means that all the factors are valid as EI component. Guideline for practical significance, which factor in the loading factor range ±0.3 to ±0.4 are considered to meet the minimal level for interpretation of structure. Loading ±0.5 or greater are considered practically significant. Loading exceeding ±0.7 are considered indicative of well-define structure and are the goal of any factor analysis [44,45]. The relationship between empathy and social skill is +0.22, it means that the higher empathy the higher social skill too.



Chi-Square=4.63, df=4, P-value=0.32747, RMSEA=0.016

Fig. 2. CFA t of Construct EI

Figure 2 shows that all of t value higher than 1.96, it means that self-emotion understanding, emotion management, self-motivation, empathy, and social skill are valid as of emotional intelligence construct. Five factors proved to be a valid emotional intelligence construct.

Figure 3 shows that the limit of infit mean square value is 0.77 up to 1.33. the infit mean square value of all grains instruments emotional intelligence are in that range, so that all items are eligible partial credit model as a valid item. The number item 40 approaching the limit invite square, while the other items are approaching infit 1.

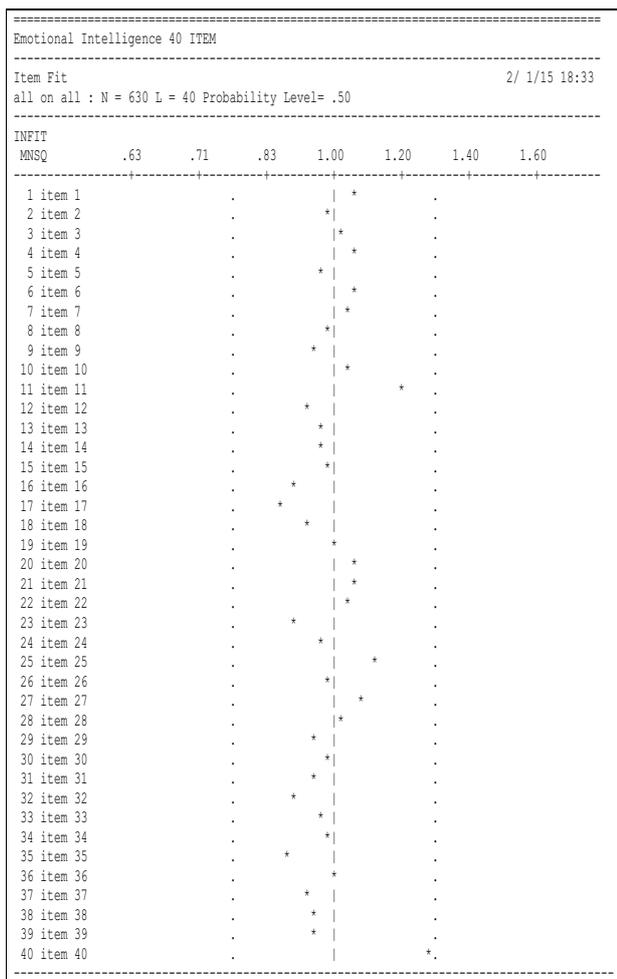


Fig. 3. Plot of infit mean square all of item

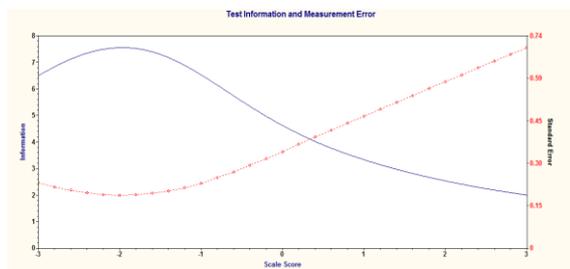


Fig. 4. Information function

Based on Figure 4, it is known that emotional intelligence inventory provides information respondents with the ability up to +0.4. From Tables III and IV, this means that tests the emotional intelligence is more appropriate in respondents with the ability up to +0.4.

TABLE III. THE INFIT OF MEAN SQUARE, STANDARD DEVIATION, AND RELIABILITY COEFFICIENT

No	Statistics	Item Estimation	Examinee Estimation
1.	Mean	0.00	0.86
2.	Standard deviation	0.59	0.45
3.	Standard deviation adjusted	0.56	0.37
4.	Reliability coefficient	0.90	0.69
5.	Infit mean square & standard deviation	0.99 ± 0.08	1.00 ± 0.04
6.	Outfit mean square & standard deviation	0.97 ± 0.16	0.97 ± 0.03
7.	Infit t	0.19 ± 1.01	0.04 ± 1.11
8.	Outfit t	-0.08 ± 1.06	-0.01 ± 0.99

TABLE IV. THE INDEX CONCURRENT VALIDITY

No	Variabel	N	EPPS
1.	Emotional intelligence	33	0.459
	<i>p</i>		0.009

TABLE VI. THE CONVERGENT VALIDITY INDEX

Inventory	observation					
	F1	F2	F3	F4	F5	TO
F1	<b>0.698</b>	0.293	0.209	0.039	-0.368	0.358
F2		<b>0.768</b>	0.305	0.262	-0.326	0.494
F3			<b>0.743</b>	0.414	-0.367	0.599
F4				<b>0.736</b>	-0.142	0.627
F5					<b>0.692</b>	0.333
TI						<b>0.806</b>

- F1 = self-emotion understanding
- F2 = self-emotion management
- F3 = self-motivation
- F4 = Empathy
- F5 = social skill

#### IV. CONCLUSION

The emotional intelligence construct is eligible goodness of fit statistics. The all of instrument item qualified IRT PCM, with a reliability index of 0.699 (see Table VI) and the value of information index of +0.4. The concurrent validity of 0.459, while the convergent validity of 0.806. Thus the instrument of emotional intelligence has good criteria for teacher student.

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