

## The Construction of the Malaysian Educators Selection Inventory (MEdSI) for the Selection of Bachelor of Education Students in Public University in Malaysia

By

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### Abstract

*Sebagai negara kecil dan berkembang, pendidikan telah lama menjadi bagian yang sangat penting dalam pembangunan sosial negara. Sebelum Kemerdekaan, sistem pendidikan telah digunakan untuk memisahkan lebih lanjut etnis yang berbeda dan kelompok sosial. Pasca-kemerdekaan, sistem telah menjadi alat penting dalam menyatukan kelompok-kelompok ini dan mengurangi perbedaan-perbedaan antara berbagai ras yang membentuk keragaman populasi Malaysia. Malaysia adalah poised untuk menjadi bangsa yang sepenuhnya dikembangkan pada tahun 2020, pendidikan adalah lagi di garis terdepan. Pembangunan suatu negara bergantung pada pengembangan orang-orangnya, sehingga peran sekolah dan guru yang bermain di fase awal ini pengembangan sumber daya manusia adalah sangat penting. Kebijakan yang terbaik dan kurikulum dapat ditarik ke atas, tetapi jika guru terbaik direkrut, hal ini mungkin semua datang ke sia-sia. Oleh karena itu, dalam rangka untuk membuat sebaik mungkin menggunakan keahlian dan fasilitas yang sudah ada dalam berbagai program pelatihan guru di universitas-universitas publik, kebijakan-kebijakan baru yang telah disusun dalam proses seleksi peserta pelatihan guru. Selain skolastik memenuhi persyaratan dan melewati proses wawancara, para kandidat sekarang juga disaring dengan tes psikometri, Malaysian Educators Selection Inventory (MEdSI).*

*Keywords : education, social development, Malaysian, Teacher Training, MEdSI.*



## INTRODUCTION

Given the large number of applicants who meet this academic criterion, and as interviewing is a very labourious and time-consuming process, another screening test is deemed necessary before the applicants are short-listed for the interview. But what kind of screening test? Academic qualifications alone are not a guarantee of a capable teacher. Thus, we go back on the personality and career aptitude frameworks in designing the instrument. The objective is not simply to decrease the number of candidates to be interviewed. We want an instrument that will really filter out less suitable teacher trainee candidates that is not only based on sound theoretical background but one that will also have psychometric properties of a valid and reliable instrument.

## THEORETICAL BACKGROUND

The match between a person's characteristics and his career is essential in the person's motivation, work satisfaction, achievement, productivity and stability in his career (Holland, 1998). This is also similar to Parson's (1908) view that a career well-chosen is like fitting the square peg into a square hole and a round peg to a round hole, and not the other way around. This essentially means there is a need to choose the right person for the right job, and on this premise, our teacher trainee candidates have to have some intrinsic qualities in them that with the training given will make them into very capable teachers.

The intrinsic qualities that we measured in MEdSI fall under 4 components: Personality, Career Aptitude, Integrity and Emotional Intelligence.

Incompatibility between personality, interest and career choice may be manifested not just in unsatisfactory performance during training, but it may also be shown on the job through excessive sick leave taken, job truancy, insufficient commitment etc. (Carmeli & Gefan, 2005). As teachers, this should be taken seriously as there may be damaging ramifications to the pupils' performance and self-development when teachers are under performing or prone to truancy – either



physically or psychologically. Thus, personality and career aptitude are two of the major components in MEdSI.

Matching individual characteristics with the needs of training and career choices through psychometric test is not new. For example, the Vocational Preference Inventory (VPI), Self-Directed Search (SDS), Strong-Campbell Interest Inventory (SCII) are among some of the tests that have been widely used in the United States in the hiring and also in student admission processes. What is common among these tests is the concept of Person-Environment Fit (P-E Fit) (Sekiguchi, 2004). Instead of taking any one of these tests wholesale, it was decided that the cultural differences between Malaysia and the United States, plus the societal needs of Malaysia are pertinent enough to mandate a homegrown instrument, while still relying on well-established psychological and psychometric principles.

Integrity Scale is a unique contribution to this teacher trainee candidate's selection process as it takes into account the current problems that have plagued the Malaysian schools vis-à-vis the teachers. The items were basically designed to discriminate between those who think teaching is an easy half-day job and the ones who have strong interest in teaching. Integrity here subsumes positive values that can be measured within the confines of knowledge, behavior and attitude. Integrity is a projection of teacher professionalism regarding discipline, diligence, responsibility, optimism, leadership, patience and perseverance, creativity and innovation.

Emotional Intelligence is considered a necessary component of a teacher's persona as teachers are constantly dealing with students. Teachers who can understand and manage their emotional life and the emotion of their students are better off in handling conflicts that arise in classrooms. These teachers who are competent and able to solve such problems and demonstrated good planning skills while managing daily tasks generally are more effective in classroom management.

#### **ADMINISTRATION OF MEdSI**

MEdSI is a 300-item instrument designed to capture 4 intrinsic qualities i.e., Personality, Career Interest, Integrity and Emotional Quotient. Personality was



adapted from Sidek's Personality Inventory, Career Interest was modeled upon Holland's SDS and Emotional Intelligence was adapted from EQMap. The Integrity dimension was drawn up based on the spirit of the National Philosophy of Education, the 5 pillars of nationhood and the Malaysian Educators Code of Ethics.

Given the number of applicants and the high stakes nature of the assessment, ease of administration and scoring is also important. Hence, MEdSI is a paper-and-pencil multiple-choice test with a time-limit of 60 minutes.

### PSYCHOMETRIC PROPERTIES: RELIABILITY AND VALIDITY

The finalized version was administered on 1000 students currently undertaking education courses in 3 universities for establishing reliability and norms. The data presented here came from this norm group.

Table 1 shows the number of items and internal consistency of each dimension as measured through the Cronbach alpha.

Table 1. Reliability Measures of the MEdSI

Dimension	Number of items	Cronbach alpha
Personality	110	.834
Career interest	60	.886
Integrity	70	.825
Emotional Quotient	60	.890
Total	300	.901



## PERSONALITY

In MEdSI, the personality items were presented as a yes-no statement. The applicant is required to answer whether the item describes them or not. Included in the Personality dimension is a Lie Scale. This Lie Scale is very important to the entire test as applicants who fail the Lie Scale (a minimum answer of 4 out of the 10 items) are discarded from the pool of applicants. The Lie Scale is made up of items which applicants should not be expected to truthfully answer 'yes' but in the hope to appear good they would answer 'yes.'

Example of a Lie Scale item is:

*'I never disagree with my parents'.*

The personality model is taken from Cattell. Apart from the Lie Scale, the sub-scales are Assertive, Analytical, Autonomous, Extrovert, Intellectual, Resistance, Self-Criticism, Leadership, Helping and Achievement.

Factor analysis was done on all the 11 sub-scales of the Personality dimension of MEdSI to determine the number of factors produced. For this purpose, the 11 x 11 correlation matrices were analyzed using the varimax rotation. Using this approach, the factors that are maintained for further processing are those that produced a high percentage value in terms of the variance and have eigenvalue more than one. In terms of variance, Edwards and Whitney (1972) has proposed variance of 75% or higher. Results show that the factor analysis produced seven factors (see Table 2). These seven main factors with eigenvalues more than one were produced; four of these are single factors, while the other three are combined factors.

An inspection of the factors show that Factor 1 has 2 variables with loading more than .50 i.e., Intellectual (.76) and Analytical (.66). While Factor 3 has 2 variables with loadings more than .50 i.e. Extrovert (.56) and Helping (.57).

Table 2: Factor Analysis Results of Personality Cluster, MEdSI

Personality Trait	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Communality
Intellectual	.76*	.30	.23	.12	.32	.25	.22	.65
Analytical	.66*	.17	.25	.27	.31	.32	.19	.56
Persistence	.17	.67*	.11	.16	.21	.28	.31	.61
Extrovert	.44	.23	.56*	.33	.39	.13	.31	.54
Helping	.37	.28	.57*	.41	.32	.19	.17	.57
Achievement	.19	.26	.33	.61*	.26	.21	.24	.57
Assertive	.11	.23	.19	.54*	.15	.19	.29	.71
Leadership	.20	.18	.12	.56*	.21	.13	.21	.43
Autonomy	.17	.14	.36	.37	.57*	.18	.22	.72
Self-Critic	.37	.32	.21	.28	.10	.54*	.19	.51
Honesty	.23	.19	.29	.34	.26	.36	.56*	.59

Nota:

h2 - Communality

\* - Variables with loadings > .50

### CAREER INTEREST

Career interest is measured through a yes-no checklist of interests pertinent to each particular construct.

Examples

Factor analysis was done on the 6 subscales in the Career Interest Dimension of MEdSI. The 6x6 correlational matrices with varimax rotation were used. The results are displayed in Table 3.

Jadual 3: Result of varimax rotation factor analysis on Career Interest

Variables	Factor 1	Factor 2	Factor 3	h2
Realistic	.83*	.30	.12	.78
Investigative	.68*	.19	.29	.59
Conventional	.18	.75*	.08	.60
Enterprising	.17	.64*	.39	.58
Social	.11	.23	.63*	.47
Artistic	.21	-.00	.57*	.37



Nota:  $h^2$  = communality  
\* = variables with loading  $> .50$

An examination of Factor 1 revealed that only 2 of the factors have loadings of more than .50 i.e., Realistic (.83) and Investigative (.68). Factor 2 has 2 variables with loadings more than .50 i.e. Conventional (.75) and Enterprising (.64). While Factor 3 has 2 variables with loadings more than .50 i.e., Social (.63) and Enterprising (.64). Although the results is different from Holland's findings of 6 separate factors (1997), it is still compatible with his theoretical leanings.

### **Integrity**

The Integrity Scale is made up of 3 sub-scales i.e., Trustworthiness, Honesty and Wisdom. Table 4 shows the reliability coefficient of each of these subscales as measured through the Cronbach alpha.

Jadual 4. Reliability Coefficient of Integrity Subscales

Bil.	Cluster	Cronbach alpha
1.	Trustworthiness	.856
2.	Honesty	.848
3.	Wisdom	.852

## **EMOTIONAL INTELLIGENCE**

The internal reliability of the Emotional Intelligence subscales was done and the result as manifested through the Cronbach alpha is shown in Table 5.

Table 5. Internal Reliability of Emotional Intelligence subscales

Bil.	Sub-scale	Reliability coefficient
1.	Emotional self-awareness	.875
2.	Emotional expression	.825
3.	Other People's Emotional Awareness	.925
4.	Resilience	.825
5.	Interpersonal Relationship	.800
6.	Relationship Quotient	.767

### **Norms**



Table 6 to Table 9 display the means, standard deviations and the 50<sup>th</sup> percentile score for all the Dimensions of MEdSI.

Table 6: Mean, standard deviation and percentile scores for Personality

Bil.	Personality Trait	Mean	SD	50 <sup>th</sup> Percentile
1.	Asertive	5.83	1.74	6.0
2.	Analytical	7.10	2.22	7.0
3.	Autonomy	7.37	1.73	7.0
4.	Extrovert	6.84	2.22	7.0
5.	Intellectual	5.21	2.23	5.0
6.	Persistence	7.06	1.92	7.0
7.	Self-Critic	5.58	1.90	6.0
8.	Leadership	4.88	2.64	5.0
9.	Helping	8.43	1.47	9.0
10.	Achievement	7.75	1.62	8.0
11.	Honesty	3.58	2.12	3.0

Table 7. Mean, standard deviation and percentile scores for Career Interest

Bil.	Career Interest	Mean	SD	50 <sup>th</sup> Percentile
1.	Realistic	2.53	2.80	1.0
2.	Investigative	4.30	3.01	4.0
3.	Artistic	5.55	2.57	5.0
4.	Social	7.48	1.89	8.0
5.	Enterprising	4.44	2.65	4.0
6.	Conventional	4.06	2.71	4.0

Table 8. Mean, standard deviation and percentile scores for Integrity

Bil.	Integrity	Mean	SD	50 <sup>th</sup> Percentile
1.	Honesty	88.54	5.15	89.0
2.	Being Clean	66.91	4.20	67.0
3.	Being Wise	38.79	2.49	39.0

Table 9. Mean, standard deviation and percentile scores for Emotional Intelligence

Bil.	Emotional Intelligence	Mean	SD	50 <sup>th</sup> Percentile
1.	Emotional Self Awareness	31.78	3.00	31.0
2.	Emotional Expression	23.89	2.59	24.0
3.	Emotional Awareness toward Others	35.14	3.77	35.0
4.	Resilience	36.94	3.62	37.0
5.	Interpersonal Relationship	27.55	2.58	28.0





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6.	Relationship Quotient	22.02	2.71	22.0
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## CONCLUSION

In general, the MEdSI instrument constructed has been able to achieve the aims. The reliability and validity analyses show that the psychometric properties of good measurement are not compromised even with a large-scale and high-stake instrument such as this. Follow-up studies of teacher trainee cohorts who were given admittance to teacher training programmes in the various Malaysian public universities showed encouraging results. Preliminary observations from several universities indicated that the new cohorts demonstrated a more committed personality and seemed to be more motivated as compared to previous cohorts who did not undergo MEdSI.

Since this instrument is being used by the Ministry of Higher Education of Malaysia in its goal of selecting better qualified and more suitable teachers' candidates for entering Malaysian public universities, its importance, relevance and usefulness needs to be addressed. Its psychometric properties at this point has been shown to be strong with high validity and reliability. The team of researchers that constructed MEdSI are now in the process of conducting more work in the form of building newer and better items for future cohorts and continually try to further improve and validate the instrument.

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