

# Talent Identification for Students in Pekalongan and Magelang, Indonesia: Psychological Approach

1<sup>st</sup> Donny Wira Yudha Kusuma  
Physical Education Department  
Universitas Negeri Semarang  
Semarang, Indonesia

[donnywirayudhakusuma@mail.unnes.ac.id](mailto:donnywirayudhakusuma@mail.unnes.ac.id)

2<sup>nd</sup> Andry Akhiruyanto  
Physical Education Department  
Universitas Negeri Semarang  
Semarang, Indonesia

[andryakhiruyanto@mail.unnes.ac.id](mailto:andryakhiruyanto@mail.unnes.ac.id)

**Abstract**—High sports performance is inseparable from coaching that is carried out as early as possible through talent search and monitoring, nurseries, sports education and training based on science and technology more effectively. Scouting talent can be seen from physical, skill, and psychological tests. Making accurate and valid predictions about an athlete's long-term success in professional sports is probably a difficult aspect. But until now, personality profiles as general psychological indicators have not yet become a calculation in this evaluative process; and thus, their predictive utility in the talent identification process has not been adequately tested (A. Aidman, 2007). This study describes a personality profile for talent identification for primary and secondary school students in Magelang and Pekalongan. Myers Briggs Type Indicator (MBTI) was used to measure psychometric personality. This consists of 4 main components, namely: focus attention, get information, decision making, and assessment of the outside world. The sample in this study were 354 students in Magelang and 324 students in Pekalongan.

**Keywords**—talent identification, personality, student

## I. INTRODUCTION

Knowing talented athlete from an early age has many advantages. From an economic perspective, the success of the national sports industry relies heavily on identifying successful sports talent. In Indonesia, especially Central Java, the physical activity status of high school students is very low. This data shows that less than 1% of all athletes participating in schools will continue in college, even fewer athletes have the ability to become professional athletes [1]. The studies has had a positive impact on sports participation in improving kinesthetic skills, social development, and academic results [2]–[5]. Other studies show that exercise is a solution to prevention of obesity among young people [6], [7]

In an effort to improve the quality of human resources the development of sports is one of the efforts that continue to be a concern of the Indonesia government. Sport is not only seen as a way to improve physical and spiritual health, but sports can be seen as a way to get achievements where sports achievements are expected to develop love of the country [8]. The sports system in Indonesia is based on physical education, sports organizations, and sports training systems [9], [10].

In realizing national sports, Indonesia is looking for talented individuals to advance elite athletes. Consequently, there is a permanent need for conservation and future elite athletes to get results in high-level competition. However, there are still major problems that arise. Is it talented? How can it be

seen in the near future? Over the last decades, there has been a shift from the early specialization perspective to the multidimensional talent model. The traditional view of skills has been approved with competencies or intelligence acquired genetically and measurably through special tests [11]. This approach does not include motor ability as part of the component. Therefore, it is difficult to apply to sports activities. A contemporary view of talent is a specific domain, so it is necessary to introduce some areas of ability. Some perspectives include domains related to sports such as Body-Kinesthetic Intelligence in multiple intelligence [12]–[14], Psycho-motoric Skills [15], [16], Sensori-motorized domain [17] or the personality [18]. Everything can be applied to the detection of talent in sports.

Athletic talent identification is of particular interest to coaches, researchers, parents, and educators alike. Some survey of elite young athletes found that parents were the strongest influence on the initiation of a sport (gymnastics, tennis, swimming, soccer) while coaches were the strongest influence on their decision to perform intense training [19]. Research findings suggest that student athletes who perceive they have high ability levels are more likely to maintain participation in sports activities [19], [20].

Physical education (PE) teachers are the first to identify talented students [21]. While, some study found the majority of subject leaders claimed to identify talented students according to their current levels of achievement, whilst only a small percentage based identification upon students' potential to achieve. The most common criteria for assessment were a performance in school sport and club sport. This shows that the main field of expertise is game activities [22].

Multidimensional talent identification procedures are anthropometric, psychological and interpersonal assessments [2], [23]. Furthermore, 90% of PE teachers were not trained to identify gifted students, but 80% of teachers were interested in studying the topic [21], [24]. Personal assessment can be done using psychological tests, including personality tests [25], [26]. Personality testing is a complex and debatable field. The validity of personality tests in predicting future performance depends on the sample population, instruments, and criteria. Furthermore, Furnham [25] reported prior research agreeing on the underlying structure (i.e., personality, periodic table) of traits. Recent studies show that two of them are relevant to all occupations, namely the nature of neurotism and consciousness.

Research in personality has been reported by various studies; personality of athletes and non-athletes [27]–[30]; position in team sports [31], [32]; and the personality of elite athletes [33]–[35].

The Myer Briggs Type Indicator (MBTI) is one of the most appropriate instruments that can be adopted by educators to prepare students with a better future with physical skills, knowledge and professional quality. In a recent study the MBTI instrument was chosen because the Indicator on the MBTI helped to reveal how an athlete's personality affected his performance. It also helps in determining its tendency towards certain sports and influences how athletes relate to certain team dynamics [36]–[39].

Based on the background of the problem and theoretical studies as mentioned above, this research is to find out and diagnose the personality profiles of elementary and junior high school students using the Myers Briggs Type Indicators (MBTI) to identify sports talents through psychological testing. This can help PE teachers and students to determine the direction of sports that must be adjusted according to their psychological talents

II. METHODOLOGY

A. Study Design and Sampling Procedure

The method used in this research is survey method research design. This is used to determine the personality profile of students in Magelang, and Pekalongan in Central Java, Indonesia. A total of 678 students (362 elementary school students and 316 junior school students) composed the sample. All individuals were informed about the objectives of the research and that data would only be used for research purposes and generally analyzed, and they signed a consent form to participate in this study. Samples obtained students from 14 districts in Magelang.

B. Instrument Development and Data Collection Procedure

The instrument used was the reviewed Indonesian version of the Myers Briggs Type Indicator (MBTI) containing 60 questions. The MBTI involves 8 different personality “preferences.” The preferences are organized into 4 dichotomies (contrasting categories) with subcategories rating key aspects of personality, including styles of perception (P), sensing (S), intuition (N), judgment (J), feeling (F), extraversion (E) and introversion (I). And being applied just once, and also have 0,6 to 0,8 scale reliabilities [40].

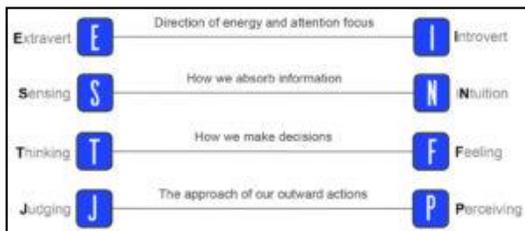


Fig. 1: Dichotomies of MBTI [40]

Procedure Questionnaires were administered to subjects within 15-20 minutes and the nature of study was described at the top of the questionnaire to the subjects. Participant filled

out a multiple choice question; there is no right or wrong answers. The MBTI instrument is not a test. Subject select the answers that best fit for them. Investigator collected the questionnaires from each PE teachers after completing the questionnaire.

C. Data Processing and Analysis

For the analysis of the personality profiles for students talent identification, the descriptive frequency analysis was used. The statistical program used was the SPSS version 19.0

III. RESULT AND DISCUSSION

The socio-demographic sample is shown in Table 1, i.e.: the total number of samples of 678 students (362 elementary, 316 junior, 416 males, and 262 females).

TABLE 1: MBTI-PERSONALITY PROFILES OF PEKALONGAN & MAGELANG STUDENTS

Type	Pekalongan				Magelang				Total	%
	Male		Female		Male		Female			
	ES	JS	ES	JS	ES	JS	ES	JS		
ISTJ	5	11	1	12	10	3	9	4	55	8,11%
ISFJ	3	11	3	6	11	2	5	0	41	6,05%
INFJ	5	2	0	1	1	0	0	0	9	1,33%
INTJ	4	4	0	2	2	1	3	1	17	2,51%
ISTP	4	5	1	0	11	2	2	1	26	3,83%
ISFP	5	5	0	2	3	0	4	0	19	2,80%
INFP	2	8	2	0	1	0	1	0	14	2,06%
INTP	5	1	1	1	0	1	0	0	9	1,33%
ESTP	5	13	3	6	17	10	6	3	63	9,29%
ESFP	6	3	0	5	9	4	3	1	31	4,57%
ENFP	2	5	1	1	1	1	3	3	17	2,51%
ENTP	1	6	1	2	6	4	3	1	24	3,54%
ESTJ	8	12	6	21	35	23	34	20	159	23,45%
ESFJ	7	15	9	13	21	1	22	7	95	14,01%
ENFJ	8	23	5	2	9	0	5	1	53	7,82%
ENTJ	7	10	1	5	11	5	3	4	46	6,78%
<b>Total</b>	<b>77</b>	<b>134</b>	<b>34</b>	<b>79</b>	<b>148</b>	<b>57</b>	<b>103</b>	<b>46</b>	<b>678</b>	

ES: Elementary School Students  
JS: Junior High School Students

The foremost aim of the study was to identification of the data which was analyzed through frequency distribution. The table 1 reported of the percentage distribution personality profile of all 678 students. ESTJ type was found to have the highest percentage (159 students or 23,45%) in the total sample, and the least was INFJ (9 students or 1,33%) and INTP type (9 students or 1,33%). Furthermore, the percentage for the four respective dichotomies e.g. E/I, S/N, T/F and J/P showed on table 2. It's reported for each sample of gender for each school criteria.

TABLE I. RESPECTIVE DICHOTOMIES OF PEKALONGAN & MAGELANG STUDENTS

Type	Pekalongan				Magelang				Total (f)	%
	Male		Female		Male		Female			
	ES	JS	ES	JS	ES	JS	ES	JS		
<b>E</b>	44	86	26	55	<b>109</b>	48	79	40	487	71,83%
<b>I</b>	33	<b>48</b>	8	24	39	9	24	6	191	28,17%
<b>S</b>	43	73	24	65	<b>117</b>	45	85	36	488	71,98%
<b>N</b>	34	<b>61</b>	10	14	31	12	18	10	190	28,02%
<b>T</b>	38	59	14	50	<b>93</b>	50	62	34	400	59%
<b>F</b>	39	<b>75</b>	20	29	55	7	41	12	278	41%
<b>J</b>	48	88	25	61	<b>102</b>	35	82	37	478	70,5%
<b>P</b>	29	<b>46</b>	9	18	<b>46</b>	22	21	9	200	29,5%

From the table 1 and table 2 showed the percentage of male and female students of elementary and junior schools were compared for the percentage points of their corresponding parameters of E/I, S/N, T/F and J/P:

The first dichotomies (direction of energy and attention focus) highest frequency of extrovert (E) was male student of elementary school in Magelang (109), and the lowest was female student of elementary school in Pekalongan (26). And the highest frequency of introvert (I) was male students of junior school Pekalongan (48) and lowest was female student of junior school in Magelang (6).

The second dichotomies (how to absorb information), male students of elementary school in Magelang has highest frequency (117) on sensing (S), and male students of junior school in Pekalongan has high frequency (61) on Intuition (N). Third dichotomies (how to make decision), the highest frequency on thinking (T) was male students of elementary school in Magelang (93), and feeling (F) was male students of junior school in Pekalongan. For the last dichotomies (approach of outward action), perceiving (P) has highest frequency by male students of junior school in Pekalongan (46) and male students of elementary school in Magelang (46), the contrary of sub-category was judgment (J) by male students of junior school in Magelang (102).

The psychology of personality is concerned with these individual differences. One approach involves looking at personality traits, stable aspects of personality with a partial genetic basis. The most influential trait theories are those of Eysenck, Cattell, and Costa and McCrae [41].

Today, many companies are asking their workers to take personality tests before they decide on the right job positions. This became a popular trend in the world of sports. Many trainers and sports organizations require athletes to take this type of test in order to find out if they will be good for their team and have the right character according to the sport they choose [23].

Various instruments for knowing one's personality have been researched by the researcher. The Myers Briggs Type Indicator (MBTI) [40], [42]; the SPQ-20 (Myskillprofile,2016); Minnesota Multiphasic Personality Inventory (MMPI), the Sixteen Personality Factor Questionnaire (16PF), the Comrey Personality Scales (CPS),

among many others [43], [44]; Dominant, influence, steadiness and conscientiousness or called by DiSC [45].

The MBTI is usually used in a company context and at times also in other areas where the psychometric analysis of personality traits, someone's abilities or the team constellations plays an important role. There is no specific MBTI for sports but we believe that people who play a certain sports might be more prone to be certain of the 16 MBTI types than another one. In reverse, this might help coaches to tailor training programs more individually and gives them a starting point of analysis and outline of possible solution in case a certain training method does not seem to work for some players. Becoming a better coach and creating a better team starts with awareness of whom they are coaching and the MBTI might contribute to that. In addition, having the information the MBTI provides you with at hand might help for recruiting of professional athletes as well as a better understanding between the teammates.

As reported from Table-2 out of the sixteen types of personality preference ESTJ (112/354) followed by ESFJ (51/354) and ESTP (36/354) were represented. If we look in more detail at the type preferences we will find that ES were having most dominant preference. Ghaderi & Ghasemi, (2012) reported that team athletes are more extroverted (E) than individually athlete, and then individual athletes are more introverted (I) than team athlete. for the next dichotomies, athletes are more used sensing (S) than intuition (N), but athletes that have high subjectivity has tendency more intuition (N) to absorb information [46], [47].

The athlete can make decisions by two ways; by thinking and feeling. The research on semi-professional soccer player reported that soccer athletes are most used thinking for they make decision on playing soccer [48], but they need to used feeling when they shooting the ball to making goal.

The last dichotomies were the approach of outward action with judging or perceiving. The MBTI provides two final distinctions about how individuals approach life: structured or flexible by Myers & McCaulley on [49]. Judgers approach life in a structured way, preferring matters to be settled, while perceivers like to keep decisions "open." Perceivers gain a sense of control by keeping their options open and making choices only when they are necessary. Aside from MBTI's extroversion and thinking constructs, little is definitive about how the other personality indicators may influence sport behaviour.

Previous research has used dimensions of the big five personality model, as well as the MBTI, to identify personality differences among athletes and non-athletes [50], [30], but a growing body of research indicates that this information may also be useful in predicting sport choice as well. It's suggested that people with certain personalities are likely to choose sports that require behaviors matching their personalities. For example, LeUnes & Nation, (1982) [51] linked thinking and feeling preferences with sport participation choices. Personality and cognitive style as predictor variables with each uniquely contributing to two facets of virtual team preference, namely preference for virtual teams over working alone and preference for virtual teams over traditional groups [52]. Thus, it's

plausible to assume that individuals scoring high as thinkers would be more likely to engage in contact (direct) sports. It's also been hypothesized that extroverts will seek "direct" sports where aggression is permitted instead of sports where it is not [53]. This theory stems from an extroverted athlete's desire to seek greater levels of arousal more so than their introverted counterparts [54].

However, inconsistencies have occurred when attempting to analyze comparisons of "team-sport" athletes to "individual-sport" athletes. Allen, Greenlees, & Jones, (2013) revealed that athletes participating in team sports were more extraverted and open to new experiences, but less emotionally stable and conscientious than those competing in individual sports [31]. From an anecdotal standpoint, it would be reasonable to posit that individual athletes would be more introverted than team participants due to the private nature of their sport [31]. However, Aidman & Schofield (2004) and Morgan & Costill (1996) suggesting that athletes competing in different contexts may render heterogeneous findings [55], [35]. Moreover, fewer differences in personality scores have been identified between athletes competing in various individual sports. Due to the conflicting findings of prior studies, this study sought to establish more reliable estimates of personality and sport choice.

#### IV. CONCLUSION

An individual's interest to engage in an activity may be regulated by their level of satisfaction with the pursuit. Kandler et al., (2012) and Mann, Briley, Tucker-Drob, & Paige Harden (2015) indicated that the development of normal personality may inform understanding of the genetic underpinnings of callous and unemotional behavior this internal regulation is reinforced by personal interests initiated by genetic influences [56], [57]. But as Bergman (2012) indicated, "The internal motivators determined by your genetics still require development by practicing". From the results, it can concluded that the higher percentage of personality on students in Magelang were ESTJ (Extrovert; Sensing; Thinking; and Judgment) and the lowest were INTP (Introvert; Intuition; Thinking; and Perceiving) and INFJ (Introvert; Intuition; Feeling; and Judgment).

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