Teacher Characteristics and Gifted Student Engagement as Influencing Factors on Academic Performance in Junior High School

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Abstract--Gifted students have enormous potential that needs to be nurtured. Additionally, gifted students also have special needs in the academic field that must be met to optimally develop their potential. The teacher holds the most important role in developing this potential. Academic performance is strongly influenced by an educator's teaching style and how he or she interacts with gifted students. If the characteristics of the teacher are appropriate, he or she will attract students to be engaged in learning. Increased student engagement produces maximum academic performance for gifted students. This study aims to determine the needs of gifted students, the characteristics of teachers of gifted students, how students' engagement in the classroom relates to teacher characteristics, and how classroom engagement affects the academic performance of gifted students. This study uses quantitative methods; the instruments used are the Adapted Feldhusen's Checklist for Teacher Characteristics Questionnaire and the Student Engagement Questionnaire. Academic performance is measured by grade point average. The results showed that gifted students were most affected by teachers' personal attributes (M = 4.25) compared to other characteristic dimensions. Meanwhile, according to the teacher, the most significant characteristic is philosophical ideals (M = 4.24). Additionally, students reported that having a teacher with characteristics that suit their academic needs leads to higher involvement in the classroom and better academic performance. The interaction between teacher characteristics and gifted student engagement influences academic performance (0.018).

Keywords: Indonesian gifted students, teacher characteristics, student's engagement, academic performance

Introduction

Intellectually gifted students have enormous potential that must be nurtured and developed. However, this development can be constrained by difficulty in matching teachers to the needs of each gifted student. Basic Education Data by the 2016/2017 Ministry of Education and Culture Data Publication (2018) states that the number of junior high school-level gifted students (Special Smart and Special Talent) is around 271,639. This means that very many gifted students with great potential must be given appropriate education services. According to Law No. 20 of 2003 concerning the National Education System education mandates, citizens who have the potential for intelligence and special talents are entitled to special education. Additionally, every student in each education unit has the right to get educational services in accordance with their talents, interests, and abilities.

Some studies suggest that students who are involved in school are more likely to experience academic success and positive adolescent development outcomes (Chase, Warren, & Lerner, 2015; Jimerson, Campos, & Greif, 2003). Akessa and Dhufera (2015) stated that the poor teacher competency in schools contributes to poor student academic performance, and, conversely, good academic performance will result from good teacher competencies. Gifted

students who are assigned teachers without the appropriate characteristics participate less and perform poorly in the classroom, hampering their academic or intellectual potential. Students who have low involvement will exhibit disruptive behavior, reduced attendance, academic failure, and often dropout (Finn, 1989; Marks, 2000; Rumberger & Rotermund, 2012). Fostering teacher characteristics that match the needs of gifted students is one of the most effective efforts in teaching gifted students.

Giftedness

Giftedness is generally defined as extraordinary abilities and intelligence possessed by individuals, especially in intellectual matters. Giftedness is much defined by psychology or education figures, including Feldhusen (as cited in Virgolim, 2005) stating that giftedness focuses on talent as interaction. Talent arises from general abilities as a result of the convergence of genetic dispositions, home and school experiences, learning styles, and unique interests of students. He regards genetics as a determinant of development. According to Clark (as cited in Virgolim, 2005), giftedness is a universal special and extraordinary characteristic, which originates at birth and is the result of interaction with environmental influences. Giftedness is also determined by the needs and trends of culture where a talented person lives. Meanwhile, according to Renzulli (1979, dalam Chan, 2011), through his theory called the "Three Dimensional Model" or "Three-ring Conception," giftedness includes three interrelated dimensions: above average ability, creativity, and commitment to the task.

Gifted Student Program Services

Gatzel and Dillon (as cited in Hawadi, 2010) identify no fewer than 30 alternative program models to teach gifted students, which are classified into three models: Acceleration Model, Enrichment Model, and Special Class.

a. Learning Acceleration or Acceleration

According to Southern and Jones (1991, as cited in Jacob & Barnsley, 1996) refers only to the process of placing students ahead in school ranking. Brody and Benbow (1987, as cited in Taylor & Sternberg, 1989) note that accelerative strategies offer students the opportunity to choose challenging and interesting educational programs. Southern and Jones (as cited in Hawadi 2004) mention some shortcomings of the accelerated learning program for gifted students, one of which is in terms of emotional social adjustment, where the characteristics of gifted students who are less socially, physically, and emotionally mature than higher grade-level classmates even though they meet academic standards.

b. Enrichment

It is the most popular and uncontroversial approach. Usually students who are enrolled in the enrichment program will be given "additional" work in ordinary classroom settings (Taylor & Sternberg, 1989). Frost (1981, as cited in Davis & Rimm, 1985) says that enrichment implies supplementation with depth, breadth, or intensity of content and processes that are appropriate to students' abilities and needs. Clendening and Davies (1983, as cited in Hawadi, 2010) define enrichment as a learning experience that functions as a substitute, enhancer, or extension of a broader instruction than subject matter, limited textbooks, and classroom learning. Somantri (as cited in Hawadi, 2010) explained that

because enrichment models only add special programs to meet the needs of gifted students, without having to separate them from their class, the tendency to leave this model is actually quite reasonable.

c. Special Class or grouping of abilities

According to Burton (1996), teaches students how to use their creativity and organize and will encourage and stimulate interaction between the same gifted students. Students will be able to work at their own level, and those who may be more competent than their peers can use their creativity in unique ways and have a teacher who understands their specific needs. With special classes, gifted students benefit academically and personally from a curriculum that suits their abilities and states that they have special talents. They can also fulfill their needs, interact with each other, feel well received, and experience challenges (Davis & Rimm, 1985). Special class programs are programs that strongly support gifted students because, with teacher-specific classes, it is easier to identify and meet the needs of each student because students have the same characteristics.

d. System Credit Semester (SKS)

In education in Indonesia, service programs that are currently being implemented are SKS programs with special class models. Based on the Minister of National Education Regulation No. 158 of 2014 concerning the implementation of the semester credit system in primary and secondary education, the SKS is a form of education in which students determine the amount of learning expenses and subjects that are followed each semester in educational units according to their talents, interests, and the ability/speed of learning. This program combines the three previous models.

Characteristics of Teachers of Gifted Students

Teachers who work with gifted students must determine the scope of reciprocal interactions and activities in the classroom, considering whether they meet the needs of students (Chamberlin & Chamberlin, 2010). There is a new role for teachers now; teachers must abandon their old roles of only transferring knowledge and must turn into guidelines and offer conditions that are most suitable for students. The new role requires a closer relationship than the previous role (Rosemarin, 2009).

Based on the theory proposed by Feldhusen (1997) about the characteristics that teachers must have for gifted children, there are three characteristics: philosophical ideas, professional predispositions, and personal attributes. The dimensions that are considered most important in philosophical ideas include respect, responsibility, flexibility, empathy, and commitment to individual differences. The dimensions of professional predispositions include organization, enthusiasm, accessibility, cooperation, and guidance. The personal attributes dimension includes innovative, high intelligence, knowledgeable, and interest in culture and intellectual pursuits.

Gifted Student Engagement

Student involvement or student engagement, according to Fletcher (2016), is something that teachers must strive for in their classrooms. Generally, student involvement occurs when

students are interested in the task at hand even when the work is challenging. Students remain diligent even though there are obstacles and are proud of the work they have completed.

According to Appleton et al (2008), student involvement refers to student involvement and commitment to school. There is a consensus that engagement is a multidimensional construct consisting of several emotional, behavioral, and cognitive aspects. Additionally, engagement is a variable class that can change, is influenced by the context (home, school, peers), and is associated with important results, including school achievement and completion (Christenson, Reschly, & Wylie, 2012).

Additionally, according to Appleton et al. (2006), involvement is also seen as a multidimensional construction consisting of four subtypes: academic, behavioral, cognitive, and psychological. There are several indicators for each subtype. For example, academic involvement consists of variables such as time on assignment, credit received towards graduation, and completion of homework, while attendance, suspension, voluntary class participation, and extracurricular participation are indicators of behavioral involvement. Cognitive and psychological involvement includes less observable internal indicators, such as self-regulation, relevance of school work with future efforts, value of learning, personal goals and autonomy (for cognitive involvement), feelings of identification or ownership, and relationships with teachers and peers (for psychological involvement).

Academic Performance

Involvement in school is an important academic result in itself. This improves performance and validates positive expectations about academic abilities (Skinner, Zimmer Gembeck, & Connell, 1998). The diversity of achievement tests used by schools and the importance of values in determining future academic progress, such as current year GPA, are measures of students' academic performance (Brown & Jones, 2004). Academic performance is the result of education—the extent to which a student, teacher, or institution has achieved its educational goals (Annie, Howard & Mildred, 1996). According to Williams (2018), the definition of academic performances extends to achievements outside the classroom. Some of the smartest students do not get good grades but are very proficient and successful in everything from music to athletics. Academic performance alone has a significant relationship to students' academic involvement (Spedding, Hawkes, & Burgess, 2017).

Method

Participants

A total of 51 gifted students from junior high school participated in this study (75.9% [41] girls and 25.1% [13] boys). These students were part of their schools' SKS class. In identifying students for this class, schools use academic tests, IQ tests, psychology tests, and past outstanding performances in school. In general, these participants represented gifted and talented students. Specifically, the students were 14 years old or younger. Twenty-two SKS class teachers between the ages of 24 and 53 participated in this study as well (15 women and 8 men). There was no identification before teachers were chosen to teach the SKS Class.

Measure and Procedure

This study used a quantitative method with survey research design. The sampling technique in this study is nonprobability sampling with purposive sampling. The participants in this study were gifted students in SKS classes and SKS teachers at the junior high school. Data collection for gifted students and teachers was conducted at the school of the participants. Gifted student was given the 25-characteristic Feldhusen's Checklist questionnaire instrument, adapted to Indonesian. Gifted students will also be given the Student Engagement Instrument that consists of 40 statements created by researchers. Teachers in the study were also given Feldhusen's Checklist. The participants were asked to rate the importance of each of the 25 characteristics and 14 competencies for a good teacher of gifted learners. Ratings were made on a 5-point scale ranging from 1 (not at all important) to 5 (most important). For the Student Engagement Instrument, the participants responded to each of the 40 statements, and ratings were made on a 4-point scale from 1 (not agree) to 4 (very agree).

Results

Mean Ratings on the List of Teacher Characteristics

The mean ratings for the 25 teacher characteristics ranged from 2.39 to 5.00, and for the 14 competencies ranged from 2.14 to 5.00, suggesting that all the characteristics and competencies were rated as relatively important.

Table 1. Comparison of student and teacher perception of teacher's characteristics

Dimension	**Gifted Teacher Characteristics**			
	M	***SD***	***M***	***SD***
Philosophical Ideals	4.19	0.51	4.24	0.78
Professional Predisposition	4.07	0.44	4.12	0.75
Personal Attribute	4.25	0.49	4.22	0.71

In table 1 above, the average score of teacher characteristics differs between student and teacher respondents. Personal attribute characteristics are considered the most important to students (M = 4.25, SD = 0.49), with Philosophical Ideals characteristics (M = 4.19, SD = 0.51) ranking second and Professional Predisposition characteristics (M = 4.07, SD = 0.44) ranking third.

For teachers, Philosophical Ideals characteristics are considered the most important teachers (M = 4.24, SD = 0.78), followed by the Personal Attribute characteristics (M = 4.22, SD = 0.71 and Professional Predisposition characteristics (M = 4.12, SD = 0.75). There are different perceptions between students and teachers about necessary teacher characteristics.

Measurement

Table II. Pearson Correlation

Var.	1		2
	Characteristic	***Competency***	***Student Engagement***
Characteristic			
Competency			
Student engagement			
Academic performance		0.276*	0.388**

* Significant correlation on los 0.05 (2-tailed)
** Significant correlation in los 0.01 (2-tailed)

Based on table 2, teacher competence correlates and is significant with students' academic performance (r = 0.276). These results indicate that the more competence the teacher has, the higher a student's academic performance. Then, the involvement of gifted students with the academic performance of gifted students showed a greater and significant correlation value (r = 0.388). These results indicate that the higher the involvement of gifted students, the higher the academic performance of gifted students.

Table III. Regression Score

Model	Sig
Regression	0.018
(Constant)	0.000

Variable teacher characteristic and gifted student's engagement has a positive and significant effect on academic performance (0.018).

Discussion and Conclusion

Research on gifted students, especially the education services of gifted students, has been widely studied but research on the characteristics of teachers for gifted students is still very rare in Indonesia. In Indonesia, there are only standards regarding the competence or characteristics of teachers for general students; however, there is no standard characteristic of teachers for gifted students. While gifted students are students with special needs that are different from students in general, it is very important to examine the characteristics of teachers according to the needs of gifted students so that potential students achieve their fullest potential.

The teacher characteristics necessary for educating gifted students based on the assessment of gifted students and teacher ratings have different results. The difference can be attributed to our use of a measurement tool that relies on subject perceptions; additionally, there is no specific teacher characteristic standard for gifted students for junior high school level, especially in the SKS class. Furthermore, there is no special selection for teachers who will teach in the credit or class program class with gifted students. Students who see teachers who are trained in gifted

education skills and who show investment in student success positively will be more motivated to learn (Siegle, Rubenstein, & Mitchell, 2014).

In this study, teacher characteristics were said to have no relationship with student involvement and only had a relationship with academic performance. Some studies show the feelings of students towards teacher support predict expectations and values of achievement as well as business, involvement, and academic performance (Goodenow, 1993; Murdock, 1999, in Murdock & Miller, 2003).

The academic performance of gifted students in this study is influenced by the involvement of gifted students in extracurricular activities. More and more, it is recognized that students involved in school activities are more likely to experience academic success and positive outcomes of adolescent development (Chase, Warren, & Lerner, 2015). Student involvement is also a good predictor of children's long-term academic achievements (Skinner et al., 1998) and graduation rates (Connell, Spencer, & Aber, 1994). Previous studies, which reinforce the results of this study, state that the characteristics and competencies of teachers and the involvement of students together can affect student academic performance.

Future researchers should accompany each student and teacher when filling out the questionnaire. It is important to know words, statements, or sentences that are less understood by the participants so that researchers can help provide clearer understanding or information. Additionally, assistance when filling out questionnaires is important to avoid inaccuracies in filling out questionnaires and to monitor blank statements and unreturned questionnaires.

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