ISSN Online: 2709-071X
ISSN Print: 2709-0701
DOI: https://doi.org/10.33193/JEAHS.32.2024.454
مجلة العلوم التربوية والإنسانية
Journal of Educational and Human Sciences
www.jeahs.com
Volume (32) February 2024 العدد (32) فبراير 2024

Effect of Demographic Variables on the Accuracy of Teacher Nominations of Gifted students in the Regular classrooms

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ABSTRACT

The study aimed to analyze the demographic variables of teachers and how such variables influence the accurate nomination of gifted students based on the scale for rating the behavioral characteristics of such students. The study focused on five variables; gender of teachers, general specialization of teaching, years of teaching experience, training programs the teachers may have during their teaching experience, and the degree of teacher's qualification. Having employed the quantitative research design including the descriptive comparative-correlational method and the sample of classroom teachers invited from two primary schools, the overall findings showed the most influential variables which can be seen thorough the interference among the general specialization with the degree of qualification in one hand, and the years of teaching experience with the training programs on the other. Regardless of the type of rating scales, increasing teachers' knowledge and experience regarding the behavioral characteristics of gifted students plays a central role in increasing the accuracy of teacher nomination. Further implication and recommendation for future research were provided.

Keywords: Demographic variables, Teacher nominations, Gifted students, Regular classroom.

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Introduction

Central to the entire discipline of gifted education is the issue of identifying gifted students. There has been renewed interest among researchers in developing scales for the behavioral characteristics that distinguish gifted students from other students. Teacher nominations through such scales has been acknowledged as one of the most important sources for identifying gifted students. The relationship between the personal factors of teachers and their nominations of gifted students has been widely studied. Recent development in inclusive differentiated learning have heightened the need for improving teachers experience in identifying the talents of diverse students. Although the scale of behavioral traits of gifted students and teacher nominations have been historically examined for its effectiveness in the identification process (e.g., Gridley & Treloar, 1984), there has been a growing concern among researchers and educators about the characteristics and professional expertise of teachers in providing accurate assessment of students' talents (e.g., Peters et al., 2023; Rambo-Hernandez et al., 2023). The most critical concern has been frequently found regarding the low accuracy among teacher nominations of gifted students (Anthony, 2022; Biber et al., 2020; Dicke, 2012; Gear; 1976; Gralewski, & Karwowski, 2013; Jarosewich et al., 2002; McBride, 1992).

Debate continues about the issue in which some behaviors of creative and highly able students may be misinterpreted by teachers, and therefore those students could not be identified as gifted (Davis & Rimm, 2004; Lovecky, 2023; Webb et al., 2005). Considerable effort has been devoted to providing classroom teachers with a behavioral checklist to identify gifted students, but rather less attention has been paid to examining the prior knowledge, beliefs, and experience of teachers in applying such checklist and how they perceive the behaviors of students.

In Saudi Arabian educational context, the identification of gifted students was acknowledged by the early policy of education (Ministry of Education, 1995). Recently, the Human Capability Development Program, which lunched in 2021 as

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www.jeahs.com
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one of many programs for achieving the Saudi Arabia Vision 2030, has three national initiatives for gifted education expansion: (1) gifted student identification test expansion; (2) regulations and policies for gifted students; and (3) gifted student enrichment program expansion (Human Capital Program, 2023). Currently, the identification of gifted students in Saudi Arabian school depends essentially on the National Program for Gifted Identification which conducted by King Abdul-Aziz and his Companions Foundation for Giftedness and Creativity "Mawhiba" with a strategic partnership with the Ministry of Education. The program includes two criteria; Multiple Intellectual Abilities Test, which the major criteria whereby students must obtain the required scores to be nominated for gifted programs, and the Behavioral Characteristics Scale (Mawhiba, 2024). The number of students who were identified as gifted has dramatically increased from (7529) gifted students in 2011 to (17003) gifted students in 2022 (Mawhiba, 2024). This surprising statistics are limited only for students who registered for the national program.

There has been an increasing amount of research attention given to the importance of teacher nominations as a major criteria for identifying gifted students in Saudi Arabian schools (Alenizi & Shaaban, 2023; Alnafie et al. 2000). On the other hand, most of such research examined teacher nominations of gifted students' behavioral characteristic for the purpose of gifted program eligibility, not for the purpose of curriculum and teaching practices in the regular classroom. Questions have been raised about the influence of teachers' knowledge and perception of gifted students' behaviors on meeting their diverse needs in the regular classroom (Alamer & Phillipson, 2022; Alamiri, 2021; Ibrahim & Aljughaiman, 2009). Many investigators have recently turned to discuss the environmental factors that can affect the identification of gifted students including the factors relates to teachers' profession and experience (Gubbins; 2021; Lassila et al., 2023; Sternberg, 2024). Although tremendous research emphasized the importance of teachers in identifying gifted students, little has to provide a comprehensive analysis of teachers themselves to determine which demographic factors affecting teachers' understanding of behavioral

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traits of gifted students.

As a result, the current study aims to analyze the demographic variables of teachers to determine the effect of such variables on providing accurate identification of gifted students based on the scale for rating the behavioral characteristics of such students. The overall analysis will help to explore the accuracy of teacher's prior nominations which reflect the extent of their current knowledge and understanding towards the behavior of nominated students in this study. The study revolves around the following two central questions:

1. To what extent does the demographic variables affect teachers in their identification of gifted students in the regular classes based on the scale for rating the behavioral characteristics of such students?
2. What are the statistical implications for determining the degree in which teachers are accurate in identifying gifted students based on the scale for rating the behavioral characteristics of such students?

The central questions are divided into fifth sub-questions that will guide the analysis process in this study:

1. To what extent does the teacher's gender influence the accuracy of identifying gifted students?
2. To what extent does the teacher's specialization of teaching influence the accuracy of identifying gifted students?
3. To what extent do the teacher's years of experience influence the accuracy of identifying gifted students?
4. To what extent do teacher training programs influence the accuracy of identifying gifted students?
5. To what extent does the degree of teacher's qualification influence the accuracy of identifying gifted students?

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Overview of Gifted Education in Saudi Arabian Schools and Literature Review

As outlined in the Saudi Arabian educational policy, one of the fundamental goals of education is "identifying and nurturing gifted individuals, and providing them with various resources and opportunities to develop their talents within the framework of general programs, in addition to special programs" (Ministry of Education, 1995).

The policy included three regulations related to the gifted education for both boys and girls:

- The states give special care to gifted individuals to develop their talents, direct them properly, and open opportunities for their talents;
- Concerned authorities shall determine the means of discovering talents, the special program for educating talented, and the privileges given to them for encouragement; and;
- Means of scientific research are made available to talented individuals to facilitate from their capacities and to offer them with Islamic guidance (Ministry of Education, 1995, p. 35).

In general, gifted education in Saudi Arabia follows the traditional system of gifted programming, which involves the definition of gifted students, screening and identification process to identify and nominate such students for special provisions. As highlighted by Alfaiz et al. (2022), there are different provisions for educating gifted students in Saudi Arabian schools, such as pull-out enrichment program, self-contained classes, special schools, and acceleration.

As a result of the initial national project for identifying gifted students in Saudi Arabian schools, the Ministry of Education conducted the following definition of gifted students;

The student who has an aptitude or exceptional ability or differentiated performance from his peers in one particular field or more considering by the society, particularly in the field of intellectual talent, creative thinking, academic achievement, and special skills and abilities, and he needs special educational provisions that are not available in the regular school programs. (Alnafie et al., 2000, p. 18).

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Alnafie et al. (2000) developed four categories for identifying gifted students in Saudi schools:

1. **Intelligent students:** Those students who scored 120 or more based on the modified Arabized Wechsler Intelligence Scale for Children-Revised (WISC-R);
2. **Talented Students:** Those students who achieve 90% or more on their general academic achievement as well as 90% or more in math and/or science subjects, in the past following two years before establishing a gifted program in a school.
3. **Students with Creative Thinking:** Those students who scored 115 based on Figural Torrance Tests of Creative Thinking (TTCT), Figural –B Form, which translated and adapted to Saudi culture. This test also comprises four components that are fluency, flexibility, originality, and elaboration; and
4. **Students with Special Abilities and Skills:** Those students who scored well on cognitive abilities scale, which comprises four abilities; linguistic, numerical, spatial and deductive, interests scale and teachers' nominations. (p. 19).

It appears that applying gifted education practices in the mainstream classes are often overlooked, even though the identified gifted students are instructed with their average peers in such classes. The school depends essentially on the pull-out enrichment programs as the alternative approach in which gifted students are invited by the teacher of gifted to take part-time enrichment activities during the school day (Aljughaiman, 2006; Alamiri, 2021).

Critical challenges have been observed about the role of classroom teachers in identifying gifted students in the mainstream classes. Classroom teachers are specialized in certain subject contents which offer to all average students. In this case, teachers are not often qualified for teaching gifted students in the classroom, and this issue has been frequently reported by many researchers in Saudi Arabian context (e.g., Alamer & Phillipson, 2022; Alfaiz et al., 2022; Aljughaiman et al., 2016; Alqarni, 2010; Muammar, 2006). Similarly, researchers have clearly criticized the traditional policy of gifted education which contradicts the inclusive and differentiated practices for meeting the diverse needs and skills of all students (Borland, 2005; Brodersen et al., 2023; Eyre, 2011; Nicholas et al., 2024; Peters et al., 2014; Sternberg, 2024; Tomlinson, 2014). It can be understood that the lack of

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inclusive policy for educating gifted students in the mainstream classes affected the qualification of teachers in working with gifted students, and thereby teacher nominations of such students became more questionable.

In the Saudi schools, the scale for rating the behavioral characteristics of gifted students are utilized as a tool for teacher nominations to identify students with special abilities and skills. It has been found that insufficient training of teachers in utilizing the scale could lead to decrease the accuracy of nominating such students, and other students can be excluded from the nomination (Alqarni, 2010; Ibrahim & Aljughaiman, 2009). This argument can be reinforced by evidence from other researchers who claimed for considering the environmental and pedagogical context in which gifted students learn in order to make accurate understanding of student performance (Dai, & Chen; 2014; Gubbins et al., 2021; Lo et al., 2019; Lo & Porath, 2017; Roberts, & Inman, 2023). A simple check of teacher on a specific scale to identify who is gifted or not could become a controversial process. This problematic situation can be exacerbated when the teachers are not well trained and lack of knowledge about the behaviors of gifted students.

Literature pertaining to the identification of gifted students have turned to study the effect of teacher variability on the nomination of gifted students and their eligibility for gifted programs. For example, Rambo-Hernandez et al., (2023) provided the most comprehensive analysis of the influence of teachers' variability on their nomination of gifted students, and found that teachers were different in nominating the same students due to the different subjects of teaching and the different views about the traits of creativity and motivation. This findings is reinforced by evidence for the importance of understanding the relationship between teachers' characteristics and the outcomes of their nominations of gifted students and how teachers perceived the traits of such students (Anthony, 2022; Dicke, 2012; Peters et al., 2023).

Similarly, teacher's expectations have greater influence on their decision about the gifted behavior. In consistent with other research findings (e.g., Gralewski, &

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Karwowski, 2013; Jarosewich et al., 2002), Biber et al. (2020) argued that teachers' lack of knowledge and experience of understanding the characteristics of gifted students resulted in their bias issues of nomination students, and found that teacher were in favor with identifying male students more than females. They strongly recommended that teachers should receive training programs for conducting the nomination. Thus, it can be stated that the prior knowledge and experience of teachers can affect their interpretations of students' behaviors and abilities, and consequently affect the selection of students for gifted programs.

Method

The current study utilized a quantitative research design and employed a descriptive comparative-correlational method. As Creswell (2012) mentioned, this method which is appropriate for analyzing two or more variables and their relationships, and also describing variations among groups of participants in order to explore the differences between them on such variables.

Participant Sample and Data Source

Participants in this study included 20 teachers (10 males and 10 females) who teach 6th grade classes at the primary schools. Teachers were randomly invited from two schools (i.e., one boys school and one girls school) in the city of Jeddah at the end of school year 2022/2023. The schools have not offered special programs of gifted education. At the first phase of implementing this study, which included the initial screening process, each teacher was asked to nominate 5 students based on the teacher's experience of teaching and working with such students throughout the school year. The total number of students who were nominated by teachers was 100 students (50 males and 50 females).

The second phase aimed to measure the accuracy of teachers' expectations and views of their nominated students. So, the researcher employed the Scale for Rating the Behavioral Characteristics of Superior Students, which was orginally developed by

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Renzulli el al. (1997). The scale was translated and adapted to the Saudi Arabian contetx by Cluntun (2002). The scale, which was the source of quantitatiev data in this study, included four dimentions of behvioural traits (i.e., Creativity, Leadership, Motiviation, and Learning). To ensure the accuracy of teachers' understanding and respondents on the scale, the researcher conducted nemourous meetings with teachers and wrote down the respondents of earch teacher on the scale's items. Some virtual meetings were conducted.

In addtion, the third phase of this study aimed to provide analytical answers to the research questions. So, the comparison between the total score of scale's dimensions and the demographic variables of each teacher were conducted in order to analyses the accuracy of teacher's initial selection of students. This process was beneficial to explore how such variables influenced teachers' views toward their students' traits.

In consistent with the research questions, the demographic variables of teachers included five aspects;

1. Gender (male / female);
2. General specialization of teaching (literary subjects / scientific subjects);
3. Years of experience in teaching (1-5 years, 5-10 years, more than 10 years);
4. Training programs the teachers may have during their teaching experience; and,
5. Current degree of teacher's qualification (Bachelor / Higher Diploma / Postgraduate).

Data Analysis

For statistical purpose, the number of teachers has been statistically distributed by the number of students who were nominated. To explore the correlation and comparison between the total score of the scale's dimensions and the demographic variables of teachers, the average (arithmetic mean) was used for measuring the central tendency, standard deviation, and standard error as one of the measures of dispersion. T-test was

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used to compare between two independent groups, which is a parametric test to infer the existence of differences between the degrees of variables, which included gender, general specialization, and obtaining training courses. One-way analysis of variance (ANOVA) was also used for the comparison between more than two groups. It is also a parametric test to infer the effect of experience's years and the degree of qualification based on the scale's scores. Table (1) demonstrates the descriptive measures of behavioral traits' scores in terms of teachers' gender.

Table 1: Descriptive measures of behavioral traits' scores in terms of teacher's gender

Behavioral Traits	Teacher's gender	Sample size	Average	Standard deviation	Mean standard error
Degree of Creativity Traits	Male	50	22.0000	3.42261	.48403
	Female	50	22.5400	3.45944	.48924
Degree of Leadership Traits	Male	50	21.1400	3.89668	.55107
	Female	50	21.4200	4.65587	.65844
Degree of Motivation Traits	Male	50	20.0000	2.09956	.29692
	Female	50	20.6200	1.83937	.26013
Degree of Learning Traits	Male	50	20.0200	2.29009	.32387
	Female	50	20.4600	1.86493	.26374
The total score of the scale	Male	50	83.1600	10.97745	1.55245
	Female	50	85.0400	11.38377	1.60991

It can be seen from the table (1) that there are no statistically significant differences between the averages of the demographic variable (i.e., gender) between male and female teachers in their accurate nomination of male and female students based on the students' total scores of the overall dimensions of behavioral traits.

DOI: https://doi.org/10.33193/JEAHS.32.2024.454
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Table 2: Descriptive measures of degrees of behavioral traits in terms of teachers' specialization of teaching

Behavioral Traits	Specialization	Sample volume	Average	standard deviation	Mean standard error
Degree of Creative Traits	scientific	50	23.3200	2.69875	.38166
	literary	50	21.2200	3.78121	.53474
Degree of Leadership Traits	scientific	50	22.3200	3.77662	.53409
	literary	50	20.2400	4.52007	.63923
Degree of Motivation Traits	scientific	50	20.8400	1.40495	.19869
	literary	50	19.7800	2.33247	.32986
Degree of Learning Traits	scientific	50	20.8000	1.49830	.21189
	literary	50	19.6800	2.43646	.34457

It is clear from the previous table that there are statistically significant differences between the averages of the demographic variable (i.e., specialization) between male and female teachers regarding the accuracy of their nomination of male and female students based on the students' scores on the four dimensions of behavioral traits scale and the overall score, and this was in favor of scientific specialization. This indicates that male and female teachers are more ware of students' behavioral traits as a results of teaching scientific subjects.

Table 3: Descriptive measures of behavioral trait scores in terms of teacher's years of experience

Behavioral traits	Years of Experience	Sample volume	Average	standard deviation	Mean standard error
Degree of Creativity Traits	1-5	35	23.9714	1.22440	.20696
	5-10	40	24.2750	1.13199	.17898
	more than 10	25	16.6800	.98826	.19765
	Total	100	22.2700	3.43439	.34344

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Degree of Leadership Traits	1-5	35	23.0571	2.55461	.43181
	5-10	40	23.4750	2.24165	.35444
	more than 10	25	15.2800	2.79165	.55833
	Total	100	21.2800	4.27367	.42737
Degree of Motivation Traits	1-5	35	21.2857	.78857	.13329
	5-10	40	21.4000	.92819	.14676
	more than 10	25	17.2000	.76376	.15275
	Total	100	20.3100	1.98832	.19883
Degree of Learning Traits	1-5	35	21.3143	.79600	.13455
	5-10	40	21.3750	.80662	.12754
	more than 10	25	16.9200	.86217	.17243
	Total	100	20.2400	2.08951	.20895
The total score of the questionnaire	1-5	35	89.6286	4.22935	.71489
	5-10	40	90.5250	3.99992	.63244
	more than 10	25	66.0800	3.36551	.67310
	Total	100	84.1000	11.16588	1.11659

Table (3) shows that there are statistically significant differences between the averages of the demographic variable (i.e., years of experience) between male and female teachers regarding the accuracy of their nomination of male and female students based on the scores of students on four dimensions of behavioral traits scale and the overall score, and this was in favor of years of experience arranged (5:10) years. This result implied that teachers with less than five years of experience are not sufficiently prepared to provide adequate identification of gifted students.

Table 4: Descriptive measures of behavioral trait scores in terms of teacher's training programs

Behavioral traits	Training courses	Sample volume	Average	standard deviation	Mean standard error
Degree of Creativity Traits	Not taking courses	45	19.5111	3.40202	.50714
	Taken courses	55	24.5273	.81319	.10965
Degree of Leadership	Not taking courses	45	17.8222	4.21194	.62788

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ISSN Print: 2709-0701
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Traits	Taken courses	55	24.1091	.95593	.12890
Degree of Motivation Traits	Not taking courses	45	18.9556	2.16328	.32248
	Taken courses	55	21.4182	.80946	.10915
Degree of Learning Traits	Not taking courses	45	18.7111	2.21177	.32971
	Taken courses	55	21.4909	.69048	.09310

It can be observed from the table (3) that there are statistically significant differences between the averages of the demographic variable (i.e., training programs) between male and female teachers with respect to the accuracy of their nomination of male and female students based on the scores of students on four dimensions of behavioral traits scale and the overall score, and this was in favor for those who have taken training programs. This result clearly indicated the importance of in-service training programs in enhancing teachers' experience in teaching gifted students in the regular classrooms.

Table 5: Descriptive measures of behavioral trait scores in terms of the degree of teacher's qualification

Behavioral traits	Educational Qualification	Sample volume	Average	standard deviation	Mean standard error
Degree of Creativity Traits	University Bachelor	35	18.8286	3.59318	.60736
	Higher Diploma	40	23.7250	1.32021	.20874
	Postgraduate	25	24.7600	.52281	.10456
	Total	100	22.2700	3.43439	.34344
Degree of Leadership Traits	University	35	17.8286	4.73091	.79967
	Higher Diploma	40	22.4750	2.96983	.46957
	Postgraduate	25	24.2000	.81650	.16330
	Total	100	21.2800	4.27367	.42737
Degree of	University	35	18.4000	2.07506	.35075

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Motivation Traits	Higher Diploma	40	21.2750	.87669	.13862
	Postgraduate	25	21.4400	.86987	.17397
	Total	100	20.3100	1.98832	.19883
Degree of Learning Traits	University	35	18.2000	2.20694	.37304
	Higher Diploma	40	21.2250	.86194	.13629
	Postgraduate	25	21.5200	.71414	.14283
	Total	100	20.2400	2.08951	.20895
The total score of the questionnaire	University	35	73.2571	11.89499	2.01062
	Higher Diploma	40	88.7000	4.93652	.78053
	Postgraduate	25	91.9200	1.95619	.39124
	Total	100	84.1000	11.16588	1.11659

As can be seen from table (5), there are statistically significant differences between the averages of the demographic variable (i.e., degree of qualification) between male and female teachers in relation to the accuracy of their nomination of male and female students based on the scores of students on four dimensions of behavioral traits scale and the overall score, and this was in favor of the highest qualification (i.e., Master Degree). This results indicates that the highest degree of qualification can increase teacher's competence in working with diverse students in the regular classrooms.

Table 6: Descriptive measures of creativity traits' scores from the teacher's score

Behavioral Traits	Teacher grade	Number of students for each teacher	Average	standard deviation
Degree of Creativity Traits	1.00	5	24.0000	1.41421
	2.00	5	23.4000	1.14018
	3.00	5	22.0000	0.00000
	4.00	5	24.8000	.44721
	5.00	5	24.8000	.44721
	6.00	5	17.4000	.89443

DOI: https://doi.org/10.33193/JEAHS.32.2024.454
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	7.00	5	18.0000	.70711
	8.00	5	24.8000	.44721
	9.00	5	16.0000	0.00000
	10.00	5	24.8000	.44721
	11.00	5	24.4000	.89443
	12.00	5	24.4000	.89443
	13.00	5	24.8000	.44721
	14.00	5	16.0000	0.00000
	15.00	5	24.6000	.89443
	16.00	5	16.0000	0.00000
	17.00	5	24.8000	.44721
	18.00	5	24.0000	1.00000
	19.00	5	24.6000	.54772
	20.00	5	21.8000	.44721
	Total	100	22.2700	3.43439

As shown in table (6), there are no statistically significant differences between the averages of the study's sample on the creative traits of students, which indicates the accuracy of male and female teachers in their nomination of male and female students based on their scores on the creativity traits dimension.

Table 7: Descriptive measures of leadership traits' scores from the teacher's score

Behavioral Traits	Teacher grade	Number of students each teacher	Average	standard deviation
Degree of Leadership Traits	1.00	5	24.2000	.83666
	2.00	5	24.2000	1.48324
	3.00	5	17.4000	.89443
	4.00	5	23.4000	1.34164
	5.00	5	24.0000	.70711
	6.00	5	18.6000	.54772
	7.00	5	18.6000	.54772
	8.00	5	24.2000	.83666

DOI: https://doi.org/10.33193/JEAHS.32.2024.454
ISSN Online: 2709-071X
ISSN Print: 2709-0701
مجلة العلوم التربوية والإنسانية
Journal of Educational and Human Sciences
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	9.00	5	13.0000	0.00000
	10.00	5	23.8000	1.30384
	11.00	5	24.2000	.83666
	12.00	5	24.2000	.44721
	13.00	5	24.0000	1.22474
	14.00	5	13.2000	.44721
	15.00	5	24.4000	.54772
	16.00	5	13.0000	0.00000
	17.00	5	24.4000	.89443
	18.00	5	24.4000	.89443
	19.00	5	24.4000	.89443
	20.00	5	18.0000	.70711
	Total	100	21.2800	4.27367

Table (7) shows that there are no statistically significant differences between the averages of the study's sample on the leadership traits of students, which indicates the accuracy of male and female teachers in their nomination of male and female students based on their scores on the leadership traits dimension.

Table 8: Descriptive measures of motivation traits' scores from the teacher's score

Behavioral Traits	Teacher grade	Number of students for each teacher	Average	standard deviation
Degree of Motivation	1.00	5	21.4000	.89443
	2.00	5	21.4000	.89443
	3.00	5	20.4000	.54772
	4.00	5	21.2000	.83666
	5.00	5	21.0000	.70711
	6.00	5	16.8000	1.30384
	7.00	5	17.2000	.83666
	8.00	5	21.8000	.44721
	9.00	5	17.2000	.44721
	10.00	5	21.6000	.54772

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ISSN Print: 2709-0701
DOI: https://doi.org/10.33193/JEAHS.32.2024.454
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Traits	11.00	5	21.4000	.89443
	12.00	5	21.6000	.54772
	13.00	5	21.4000	.89443
	14.00	5	17.4000	.54772
	15.00	5	21.2000	1.09545
	16.00	5	17.4000	.54772
	17.00	5	21.8000	1.09545
	18.00	5	22.0000	1.00000
	19.00	5	21.2000	1.09545
	20.00	5	20.8000	.83666
	Total	100	20.3100	1.98832

As shown in table (8), there are no statistically significant differences between the averages of the study's sample on the motivation traits of students, which confirms the accuracy of male and female teachers in their nomination of male and female students based on their scores on the motivation traits dimension.

Table 9: Descriptive measures of learning traits' scores from the teacher's score

Behavioral Traits	Teacher grade	Number of students for each teacher	Average	standard deviation
Degree of Learning Traits	1.00	5	21.4000	.54772
	2.00	5	21.6000	.54772
	3.00	5	20.4000	.89443
	4.00	5	21.2000	.83666
	5.00	5	21.2000	.83666
	6.00	5	16.2000	.44721
	7.00	5	16.8000	1.30384
	8.00	5	22.0000	0.00000
	9.00	5	17.4000	.89443
	10.00	5	22.0000	0.00000
	11.00	5	21.4000	.89443
	12.00	5	21.2000	.83666
	13.00	5	21.4000	.89443
	14.00	5	17.0000	.70711

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	15.00	5	21.2000	.83666
	16.00	5	17.2000	.44721
	17.00	5	21.8000	.44721
	18.00	5	21.6000	.89443
	19.00	5	21.4000	.89443
	20.00	5	20.4000	.54772
	Total	100	20.2400	2.08951

It can be seen from the table (9) that there are no statistically significant differences between the averages of the study's sample on the learning traits of students, which confirms the accuracy of male and female teachers in their nomination of male and female students based on their scores on the learning traits dimension.

Findings

Question 1: To what extent does the teacher's gender influence the accuracy of identifying gifted students?

To answer the first question of this study; T test was used to study the difference between the average scores of behavioral traits in terms of teacher's gender. The results of this test are presented in table (10).

Table 10: The difference between the average scores of behavioral traits in terms of teacher's gender

Behavioral traits	T value calculated	Viewer morale level Sig.	Significant differences
The score for creativity traits	-.785	.682	There are no differences
The score for leadership traits	-.326	.140	There are no differences
The score for motivation traits	-1.571	.249	There are no differences
The score for learning traits	-1.053	.062	There are no differences
The total score for the questionnaire	-.841	.676	There are no differences

DOI: https://doi.org/10.33193/JEAHS.32.2024.454
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As shown in table (10), there are no statistically significant differences in which the observed level of significance (Sig) is greater than the theoretical level of significance of 0.05 for all traits dimensions' scores among the nominated gifted students, as well as the total score of the questionnaire. This indicates that there is no effect of gender (male/female) on the accuracy of teacher nominations of gifted students.

Question 2: To what extent does the teacher's specialization of teaching influence the accuracy of identifying gifted students?

To answer the second question, T test was also used to study the difference between the average scores of behavioral traits in terms of teachers' specialization of teaching. The results of this test are shown in the following table.

Table (11): The difference between the average scores of behavioral traits in terms of teachers' specialization of teaching

Behavioral traits	Calculated T value	Viewer morale level Sig.	Significant differences
The score for creativity traits	3.196	.000	There is a significant difference
the score for leadership traits	2.497	.012	There is a significant difference
the score for motivation traits	2.753	.000	There is a significant difference
the score for learning traits	2.769	.000	There is a significant difference

As can be seen from table (11), there are statistically significant differences that imply that there is an effect of the teacher's specialization of teaching on their accuracy of nominating gifted students in which the observed level of significance (Sig) is less than the theoretical level of significance of 0.05 for all traits dimensions' scores among gifted students, as well as the total score of the questionnaire. The analysis shows that the average scores for the behavioral traits in teaching scientific subjects

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are greater than the average score such traits in teaching the literary subjects.

Question 3: To what extent do the teacher's years of experience influence the accuracy of identifying gifted students?

To answer the third question, the Analysis of Variance test (ANOVA) was used to study the difference between the average scores of behavioral traits in terms of teachers' years of experience. The results of this test can be seen in the following table.

Table (12): The difference between the average scores of behavioral traits in terms of teacher's years of experience

Behavioral traits	Source of difference	Sum of squares	D F	Mean sum of squares	Calculated F	Viewer morale level Sig	Significant differences
Score for creativity traits	Between groups	1043.324	2	521.662	406.806	.000	There is a significant difference
	Within groups	124.386	97	1.282			
	Total	1167.710	99				
Score for leadership traits	Between groups	1203.259	2	601.630	96.475	.000	There is a significant difference
	Within groups	604.901	97	6.236			
	Total	1808.160	99				
Score for motivation traits	Between groups	322.647	2	161.324	227.637	.000	There is a significant difference
	Within groups	68.743	97	.709			
	Total	391.390	99				
Score for learning traits	Between groups	367.482	2	183.741	275.223	.000	There is a significant difference
	Within groups	64.758	97	.668			
	Total	432.240	99				

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the total score for the questionnaire	Between groups	10839.014	2	5419.507	349.533	.000	There is a significant difference
	Within groups	1503.986	97	15.505			
	Total	12343.000	99				

As presented in table (12), there are statistically significant differences, which mean that there is an effect of the number of years of experience among teachers on their aacuracy of their nomination of gifted students in which the observed level of significance (Sig) is less than the theoretical level of significance of 0.05 for all behavioral traits scores among gifted students, as well as the total score. The results indicates that teachers with experience arranged from 5 years to less than 10 years have higher average traits scores than those with less experience (less than 5 years), and also higher than those with more than 10 years of experience. This may lead to expect other factors affecting the experience of teachers.

Question 4: To what extent do teacher training programs influence the accuracy of identifying gifted students?

To answer the fourth question, T-test was used to study the difference between the average scores of behavioral traits for both male and female teachers in terms of their training programs they may have during their teaching experience. The results of this test are shown in table (13).

Table (13): The difference between the average scores of behavioral traits in terms of teacher's training programs

Behavioral traits	Calculated T value	Viewer morale level Sig.	Significant differences
Score for creativity traits	-10.583	.000	There is a significant difference
Score for leadership traits	-10.748	.000	There is a significant difference

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Score for motivation traits	-7.808	.000	There is a significant difference
Score for learning traits	-8.819	.000	There is a significant difference

What can be seen from table (13) is that there are statistically significant differences, which provide evidence for the effect of the training courses teacher's accuracy of nominating gifted students in which the observed level of significance (Sig) is less than the theoretical level of significance of 0.05 for all behavioral traits scores among gifted students, as well as the total score of the questionnaire. The average behavioral traits scores of the scale in terms of training courses are greater in the group of teachers who have already obtained training courses.

Question 5: To what extent does the degree of teacher's qualification influence the accuracy of identifying gifted students?

To answer the fifth question, the Analysis of Variance (ANOVA) test was used to study the difference between the average scores of the behavioral traits in terms of the degree of teachers' qualification. The results are presented in table (14).

Table (14): The difference between the average scores of behavioral traits in terms of the degree of teachers' qualification

Behavioral traits	Source of difference	Sum of squares	DF	Mean sum of squares	Calculated F	Viewer morale level Sig	Significant differences
Score for creativity traits	Between groups	654.204	2	327.102	61.789	.000	There is a significant difference
	Within groups	513.506	97	5.294			
	Total	1167.710	99				
Score for leadership traits	Between groups	687.214	2	343.607	29.734	.000	There is a significant difference
	Within groups	1120.946	97	11.556			
	Total	1808.160	99				

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Score for motivation traits	Between groups	196.855	2	98.428	49.078	.000	There is a significant difference
	Within groups	194.535	97	2.006			
	Total	391.390	99				
Score for learning traits	Between groups	225.425	2	112.713	52.864	.000	There is a significant difference
	Within groups	206.815	97	2.132			
	Total	432.240	99				
the total score for the questionnaire	Between groups	6490.074	2	3245.037	53.780	.000	There is a significant difference
	Within groups	5852.926	97	60.339			
	Total	12343.000	99				

As shown in table (14), there are statistically significant differences, which imply that there is an effect of the degree of teachers' qualifications on their accuracy of nominating gifted students in which the observed level of significance (Sig) is less than the theoretical level of significance of 0.05 for all behavioral traits scores among gifted students, as well as the total score of the questionnaire. Teachers with higher qualification (i.e., postgraduate degrees) have a higher average traits scores than those with lower qualification which includes the bachelor and higher diploma degrees.

To summarize the overall findings in relation to the research questions, the effect of the demographic variables of teachers on their accurate identification of gifted students can be arranged from the most influential variables to the least influential variables based on the students' overall scores on the behvioural traits' dimentions. Consequently, teacher's specialization of teaching (literary subjects/scientific subjects) was the most influential variable on their accurate identification of gifted students, and this was in favor of scientific subjects in which the mean standard error was (= 0.21189). The sconde influential variable was the degree of teacher's qualification (Bachelor / Higher Diploma / Postgraduate), and particularly in favor of

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the master qualification in which the mean standard error was (= 0.39124). The third influential variable was the teacher's years of experience in teaching (1-5 years / 5-10 years / more than 10 years), and particularly in favor of the years from 5 to 10 in which the mean standard error was (= 0.63244). The fourth influential variable was the training programs the teachers may have, and this was in favor of teachers who already took training programs in which the mean standard error was (= 0.9310). The fifth and least influential variable was the teacher's gender which did not affect teachers' accuracy in identifying gifted students whereby the mean standard error for male teachers was (= 1.55245), whereas for female teachers was (= 1.60991).

Discussion

Due to the small sample size of this study, the findings need to be interpreted with caution. As mentioned in the literature review, particularly in Saudi Arabian literature, extensive research focused more on measuring the accuracy of teacher nominations for the purpose of identifying students for gifted programs. However, the findings of this study shed light on the importance of teachers' knowledge and understanding of students' behavioral characteristics in order to identify the gifted students throughout the teaching practices in the regular classrooms. The unique feature of this study is the opportunity to explore the demographic variables of teachers themselves and utilize the scale for rating the behavioral characteristics of gifted students for understanding the effect of such variables on teachers' prior nominations of students.

In general, the findings of this study are consistent with those obtained by (Ibrahim & Aljughaiman, 2009; Biber et al., 2020; Gralewski, & Karwowski, 2013; Jarosewich et al., 2002; Rambo-Hernandez et al., 2023) who found that different variables of teachers including their experience, perceptions toward giftedness, and professional development programs had greater impact on the accuracy of teacher nominations of gifted students. The findings of this study posed a critical question to how teachers nominate gifted students based on a specific scale of behavioral characteristics

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without prior knowledge and understanding of such behaviors among diverse students in the classroom. In particular, the findings are in agreement with Biber et al., (2020) findings in relation to the lack of teacher's knowledge and training in gifted education and how this problem reduced the accuracy of teacher nominations of gifted students.

It is interesting to observe that there was a relationship between teachers' years of experience and training programs they may have during their experience in terms of generating accurate nomination of gifted students. A possible explanation for this might be that long experience of teaching without sufficient training programs can influence teacher's experience in identifying gifted students and understanding their diverse characteristics. This matter has been found in Saudi Arabian literature (e.g., Alenizi & Shaaban, 2023; Alqarni, 2010; Ibrahim & Aljughaiman, 2009) who clearly referred to the importance of providing classroom teachers with professional training programs in gifted education practices to meet the needs of gifted students in the classroom.

In contrast to some previous research findings, no evidence was detected regarding the effect of gender (male or female) on reducing the accuracy of teachers' nomination of gifted students in this study. This situation can be attributed to the assumption that both male and female teachers became aware about the individual differences observed during the teaching experiences in the classrooms. Additionally, the most surprising observation emerged from the findings was the increasing effect of teacher's specialization whether in teaching literary subjects or scientific subjects. It can therefore be assumed that the content of scientific subjects (e.g., mathematics and sciences) can help teachers to recognize the abilities of students. The relationship between teachers' specialization and their degree of qualification became more obvious in this study for having the grater effect on teacher nominations. It can be stated that the higher degree of teachers' qualification can increase the accuracy of gifted students nominations. Importantly, regardless of the degree of qualification, it

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can be expected that intensive training courses about the behavioral characteristics of gifted students and the relevant tools are more beneficial for increasing teachers' knowledge and understanding of such behaviors, and thereby the accuracy of teacher nominations becomes more valuable.

Ultimately, the overall findings of this study fits into the research picture that has been found about the factors affecting the low accuracy of teacher nominations. Designing accurate scales for determining the behavioral characteristic of gifted students is not valid unless the teachers have the sufficient attitudes, knowledge, and experience in understanding such behaviors.

Conclusion and Implication

The current study has analyzed the demographic variables that can affect teachers' accuracy of nominating gifted students in the regular classroom based on the scale for rating the behavioral characteristics of such students. Increased attention has been paid to developing valid measures for teacher nominations of gifted students, but rather less attention has paid to the profession of in making accurate understanding of students' behaviors during the teaching lessons. Therefore, there is a need for applying the inclusive paradigm of gifted education in which all classroom teachers have the required knowledge for understanding the gifted behaviors. This implication is important not only for nominating and selecting gifted students for the special programs of gifted, but also for supporting teachers to develop their teaching practices to tailor to the diverse needs of students. One of the most controversial argument is considering teacher nominations of gifted students as the process for gifted programs screening criteria. Instead, the scales for determining the behavioral characteristic of gifted students can be used as the tool for developing effective differentiating instruction for gifted students in the regular classrooms. Greater involvement of teachers in understanding the behaviors of diverse students has a high priority in professional development programs.

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Further research is needed for examining the personal variables of teachers' themselves and how such variables influence their attitudes and beliefs toward giftedness and gifted students. Caution can be found regarding the mis-identification of gifted students due to the low accuracy of teacher nominations. A number of highly gifted students is being hidden because their gifted behavior may be misunderstood.

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ISSN Online: 2709-071X
ISSN Print: 2709-0701
DOI: https://doi.org/10.33193/JEAHS.32.2024.454
مجلة العلوم التربوية والإنسانية
Journal of Educational and Human Sciences
www.jeahs.com
Volume (32) February 2024 العدد (32) فبراير 2024

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