The Qualities of Effective Teachers of High Ability Female Secondary School Students in Singapore: A Comparison of Teachers' and Students' Perspectives

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Abstract

A group of high ability students (n = 32) described the qualities of their most effective teachers through a written essay. Analysis of the essays identified 30 different themes within four domains. These themes were used to construct a Likert scale survey and an ipsative comparison which were both administered to 42 teachers and 300 students at a secondary school for high ability female students in Singapore. Results show that, while there are similarities, there are also statistically significant differences between the qualities of effective teachers as perceived by teachers and students. In addition, the results also show that students demonstrate a preference for teachers' personality and socio-emotional qualities over their classroom management skills, thinking skills or moral and ethical qualities.

Keywords: effective teachers, high ability females, students' perspectives, teacher qualities, teachers' perspectives

The Qualities of Effective Teachers of High Ability* Female Secondary School Students in Singapore: A Comparison of Teachers' and Students' Perspectives

Introduction

Literature Review

Gallagher (2000) is clear in his opinion that gifted education programmes should be delivered by specially trained teachers who are able to identify and meet the particular requirements of gifted students, such as acceleration and differentiation (pp. 8-9). After performing extensive literature reviews and his own empirical research into the qualities of effective teachers, Stronge (2007) is resolute that the classroom teacher is the single most important factor in a child's academic development.

The logical conclusion that can be drawn from the unification of Gallagher's and Stronge's ideas is that gifted students should receive special education programmes that are delivered by specially trained teachers who bear the responsibility of being the single most important element in their students' academic and possibly socio-emotional development. The gifted students attending school today have the greatest potential to develop into the artists, leaders and scientist of tomorrow. Consequently, their education – and whom it is delivered by – should not be left to chance.

It is clear that identifying the qualities of effective teachers of gifted students is an important area of research. However, a review of the literature shows that it is an area in which authentic empirical research is lacking. Jolly and Kettler (2008, p. 440) conclude that, "Perhaps the lack of research on teaching and instruction is indicative of a growing divide between those who conduct research in gifted education and practitioners who work daily in classrooms with gifted students."

*Winner (2000, p. 153) defines giftedness as, "Unusually high ability in one or more domains." The term *high ability* is assumed to be synonymous with the word *gifted*, and I have chosen to use the term throughout this paper because: (a) It is more clearly understood; (b) It is less provocative; (c) It best describes the student sample used in this research. However, the word *gifted* has been included if it was specifically used in the literature that was reviewed for this study.

Although relatively small in number, empirical studies that used the opinions and perspectives of students to determine the qualities of effective teachers in gifted education were identified in the literature. Maddux, Samples-Lachmann and Cummings (1985) administered a 30 item, 5 point Likert scale questionnaire to 98 gifted students. Students in the study, especially females, demonstrated a statistically significant ($p < .001$) preference for personal-social qualities over cognitive qualities. Students also demonstrated a statistically significant ($p < .001$) preference for cognitive qualities over classroom management skills. These findings support research performed by Dorhout (1983) in which 279 gifted students and 110 teachers answered 36 questions from the Preferred Instructor Characteristics Scale. The students demonstrated a preference for teachers with good personal and social characteristics while the teachers themselves believed that the students would demonstrate a preference for teachers with good cognitive and intellectual characteristics. Finally, Emerick (1992) surveyed and interviewed 10 gifted students who were at risk of academic failure to determine what reversed their underachievement. All students believed that a specific teacher was the single most important factor in reversing their underachievement. The teacher cared for the student, communicated like a peer, was enthusiastic and knowledgeable, was flexible in his or her teaching style and set high yet realistic expectations for the student.

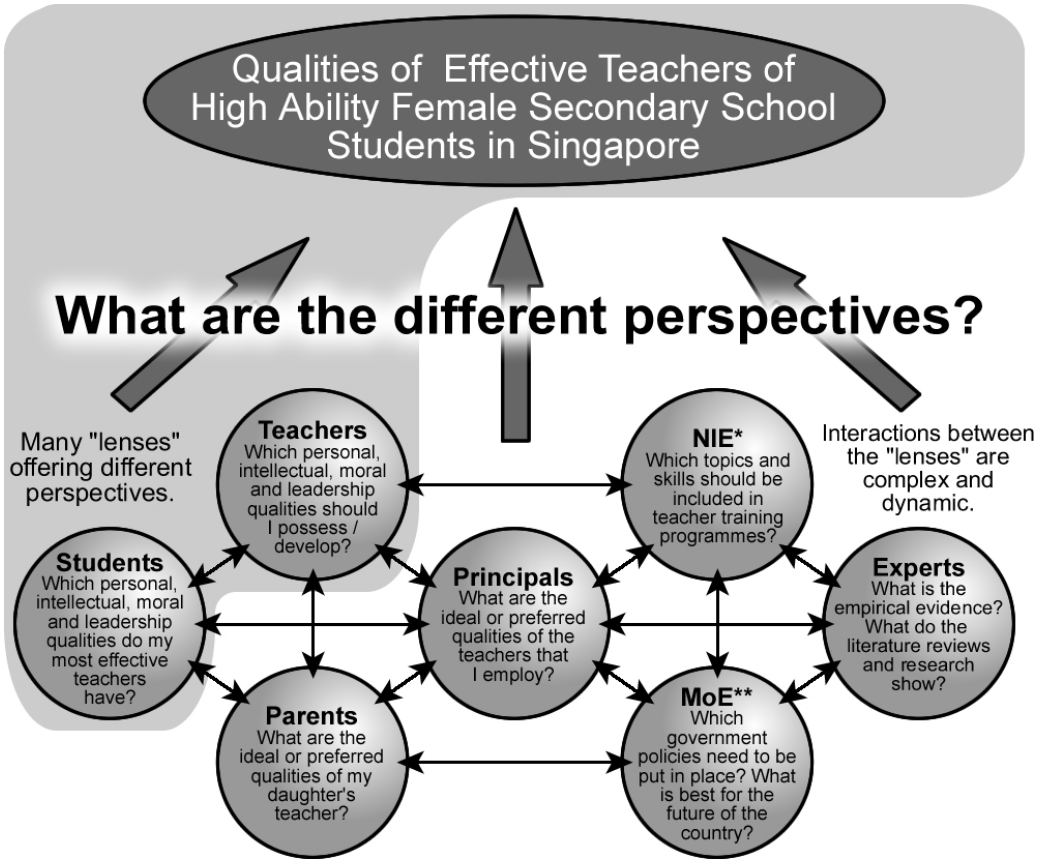
Significance of the Study

Best practice in gifted education must be built upon evidence that is derived from sound empirical research. However, Sternberg (2010, p. X) notes that, "...the field of giftedness has been less blessed by strongly designed research than have some other fields in education..." As a consequence, my primary objective for conducting this empirical study was to make a positive contribution to research in gifted education, especially the literature that already exists on the qualities of effective teachers of high ability students. Figure 1 illustrates the different perspectives that can be taken when considering the qualities of

effective teachers of high ability students. As a classroom teacher, in contact with students on a daily basis, my immediate and personal interests concern the teachers' and students' perspectives. This is pertinent because the interaction between teachers and students is at the centre of all school based education, and therefore became the focus of my research.

A combination of both teachers' and students' perspectives were employed in order to develop a thorough understanding of the issues at stake. It was envisaged that results from this study could be used for the following: (a) To offer an Asian perspective on the discussions that surround the qualities of effective teachers of high ability students; (b) To improve teacher training courses; (c) Allow teachers to reflect upon, and improve, their own classroom practice; (d) To develop classroom observation scales in order to evaluate lessons.

Figure 1. A conceptual framework to guide research into the qualities of effective teachers.



Note. *NIE stands for National Institute of Education, a centre for research and teacher training in Singapore.
Note. **MoE stands for Ministry of Education, a government body in Singapore.

Purpose of the Study

This study was conducted for five significant reasons: (a) To discover the qualities of effective teachers as perceived by high ability female secondary school students in Singapore; (b) To discover the qualities of effective teachers of high ability female secondary school students in Singapore, as perceived by the teachers themselves; (c) To identify similarities and differences between teachers' and students' perceptions of the qualities of effective teachers; (d) To make recommendations for training teachers of high ability students based upon the findings from empirical research; and (e) To compare the qualities of effective teachers of high ability students in Singapore with those of teachers from America in order to identify similarities and differences between Asian and Western cultures.

Research Questions

1. From a student's perspective, what qualities do effective teachers of high ability female secondary school students in Singapore possess?
2. From a teacher's perspective, what qualities do effective teachers of high ability female secondary school students in Singapore possess?
3. When the perspectives of students and teachers are compared, in what ways are they similar to each other, and in what ways are they different from one another?
4. What special training do secondary school teachers in Singapore require in order to meet the need of their high ability female students?
5. How do the results obtained from this research on the qualities of effective teachers compare to the results obtained from similar studies?

Method

Demographic Information

The secondary school for high ability females in Singapore that was chosen for this study was selected as a convenient sample. Approximately 1800 girls attend the school, arranged equally into four levels according to their age; Year One (12 to 13 years) Year Two (13 to 14 years) Year Three (14 to 15 years) and Year Four (15 to 16 years). The students no longer sit for O' Level examinations at 16 years of age. Instead, by virtue of a recently introduced Integrated Programme, the students progress directly to a local Junior College where they eventually take A' Level examinations.

The school has been designated as a Centre for the Education of the Gifted and Talented by the Ministry of Education for Singapore and admits many of Singapore's top female primary school students based upon one or more of the following criteria: (a) A Primary School Leaving Examination result of approximately 270 out of 300; (b) Recognised potential within the field of art, music, sport or more formal academic subject such as science; (c) A member of the Gifted Education Programme. Students are identified for the Gifted Education Programme, using a battery of tests, at Primary Three (8 to 9 years of age).

Most of the school's student population are Chinese (*ca.* 89%) followed by Indian (*ca.* 6%) and Malay (*ca.* 4%) with a minority being either Eurasian, Indonesian or Vietnamese (total *ca.* 1%).

Collection of Qualitative Data

This research followed a sequential exploratory strategy (Creswell, 2009, pp. 211-212) which employs a three phase approach; collection and analysis of qualitative date (Phase 1) which is used to development an instrument (Phase 2) which is then used to collect quantitative data from a sample (Phase 3). Similar empirical research has been conducted by Maddux et al.

(1985) and Schulte, Slate and Onwuegbuzie (2008). These studies were scrutinised in order to develop an appropriate research methodology for this research.

A convenient sample (n = 32) of students (mean age = 15 years 1 month, standard deviation = 9 months) wrote an essay to describe the qualities of their most effective teachers. The instrument that was used to collect the data (Appendix A) encouraged the students to describe the teachers' qualities in four domains: (1) Classroom management and leadership; (2) Intelligence and thinking skills; (3) Moral and ethical qualities; (4) Personality and socio-emotional qualities. In addition, students were also given the option to write comments that could not easily be categorised into any of these domains. The choice of domains originated from a similar study performed by Maddux et al. (1985) who used the three domains of: (1) Classroom management; (2) Cognitive; (3) Personal-social in their research. Inclusion of a domain on moral and ethical qualities was prompted by the work of Sternberg (2000) who argues that wisdom is a form of giftedness, and that moral and ethical values need to be infused into the school curriculum in order to develop individuals who are prepared to contribute towards the common good of society. In addition, the school in which this research was performed prides itself on providing each student with the opportunity to develop leadership skills, skills that are grounded in ethical, fair and honest behaviour.

The students' hand written essays were coded in accordance with the guidelines suggested by Miles and Huberman (1994, pp. 55-72) in order to identify significant, unique and mutually exclusive themes that best described the qualities of effective teachers according to the students' perceptions. The essays were typed into a word processing document to facilitate simple manipulation of the data. The content of the essays was then read through several times in detail. This allowed me to develop an understanding of the students' perceptions and to also tentatively identify trends and patterns in the data. Next, sentences containing the same or synonymous words or terms were grouped together. A

common theme that connected the words and terms together was identified and a unique descriptive label was applied, thus generating a sub-scale within the domain. The existence of some sub-scales, *e.g. caring*, had already been anticipated based upon the literature review (Emerick, 1992). Once this process had been completed, all of the coded data were reviewed once more to check for clarity and repetition. This resulted in the merger of some smaller sub-scales, *e.g. forgiving* was merged with *empathetic* and *flexible* was merged with *creative*. Alternatively, *honest* was separated from *moral* to exist as a sub-scale on its own. The total process resulted in the generation of 30 sub-scales across the four domains. The results are summarised in Table 1.

Instrument Design

The descriptive labels used to identify each of the sub-scales were employed to construct a 30 item, six point Likert scale survey and an ipsative comparison. One Likert scale survey was designed to be given to a group of teachers (Appendix B). Statements on the teachers' survey form were worded in the following manner, "I believe that the most effective teachers of high ability students admit their mistakes." Another Likert scale survey was designed to be given to a group of students (Appendix B). Statements on the students' survey form were worded in the following style, "My most effective teachers admit their mistakes." Teachers and students were both asked to respond to the statements on a scale of one (strongly disagree) to six (strongly agree). Survey statements were designed incorporating the advice provided by Punch (2003, pp. 51-62) and Rea and Parker (2005, pp. 52-72). For example, statements were not ambiguous, double-barrelled, bias or emotionally loaded. A table of random numbers (Fraenkel & Wallen, 2006, p. A-2) was used to arrange the statements from the four domains in an arbitrary sequence.

Two ipsative comparisons were also designed, one for teachers and one for students (Appendix C). On the Likert scale survey, it is possible for teachers and students to respond

in the same way to all of the statements. For example, a student could decide that they *strongly agree* with all of the statements on the survey. However, the ipsative comparison forces the respondent to rank a group of statements in an order of preference (Cattell, 1944). The ipsative comparison was constructed by taking one descriptive label (worded as a statement) from each of the four domains and grouping them together. In total, seven sets of four statements were used to design the ipsative comparisons. By comparing statements from different domains and ranking them, it was anticipated that the teachers and students would reveal a preference for one domain over the others.

Collection of Quantitative Data

The Likert scale survey and ipsative comparison were both given to a random sample of 300 students (mean age = 14 years 10 months, standard deviation = 6 months), from the same cohort within the school. Students completed the instruments during a 30 minute weekly contact period that they have with their form teachers. A figure of 300 was used as Field (2009, p. 647) reports that surveys require 10-15 participants per variable for a confident statistical analysis of the data to be performed. The two instruments were also given to 50 members of staff (mean teaching experience = 5 years 8 months, standard deviation = 6 years 5 months) who taught the same sample of students that were participating in the study. Forty-two teachers responded to the study (84.0%). Students who wrote the original essays were purposefully excluded from answering both the Likert scale survey and ipsative comparison.

Data collected from the Likert scale surveys and ipsative comparisons were analysed using PASW Statistics Base 18.0. Values of Cronbach's alpha were calculated for the surveys to determine their internal consistency (Field, 2009, pp. 673-681 and George & Mallery, 2009, pp. 221-232). T-tests for means were calculated to identify any statistically significant differences between the teachers and students responses to the Likert scale survey and ipsative comparison (Field, 2009, pp. 324-345 and George & Mallery, 2009, pp. 133-141).

Ethical Considerations

It was not perceived that the teachers and students would face any mental or physical harm by participating in the research, *e.g.* the teachers and students were not required to respond to any highly sensitive issues. To maintain teacher and student confidentiality during the data collection phases of this research, all teacher and student responses were made anonymously, *i.e.* teachers and students were not required to identify themselves by either name, class or enrolment number on any of the instruments that were used. Only personal information concerning age, race and years spent teaching were collected in order to identify populations that the research findings may be generalised to. All of the instruments gave a clear rational regarding why the research was being carried out, emphasised confidentiality, and stressed that the survey forms would be destroyed once the research was complete. Finally, Creswell (2009, p. 90) states that research should be reciprocal, *i.e.* both researcher and participants should benefit from the findings. With this in mind, the research was conducted with the aim of sharing its findings with both the teacher and student population at the school.

Results

Themes identified in the students' essays (Table 1) are comparable to the qualities of effective teachers as described in the literature on gifted education: friendly, humorous, knowledgeable, imaginative (creative) and organised (Maddux et al., 1985); committed (passion for teaching), enthusiastic and knowledgeable (Whitlock & DuCette, 1989); caring, communicates, enthusiastic and knowledgeable (Emerick, 1992); positive relationships (Graffam, 2006).

Overall, alpha coefficients that were calculated in order to determine the internal consistency of the teachers' and students' Likert scale surveys (Table 2) were considered to be acceptable. As a general rule, $\alpha > .8$ is considered to be good, $\alpha > .7$ is acceptable while $\alpha >. 6$ is questionable (George & Mallery, 2009, p. 231).

Table 1

Themes Identified from Students' Essays about the Qualities of their Most Effective Teachers

Domain	
Classroom Management and Leadership	Intelligence and Thinking Skills
Themes (Sub-scales)	Themes (Sub-scales)
Builds Relationships (14)	Challenges Students to Think (13)
Disciplinarian (15)	Clear Instruction (17)
Engages Students' Attention (36)	Creative (11)
Leads Classroom (16)	Intelligent (10)
Manages Classroom (28)	Knowledgeable (22)
Students' Respect for Teachers (8)	Quick Thinking (11)
Well Organised (16)	Responds to Questions (7)
Domain	
Moral and Ethical Qualities	Personality and Socio-emotional Qualities
Themes (Sub-scales)	Themes (Sub-scales)
Empathetic (20)	Caring (24)
Fair (22)	Cheerful Personality (19)
Honest (13)	Enthusiastic (9)
Moral (14)	Friendly and Approachable (16)
Positive Role Model (10)	Humorous (20)
Professional (13)	Passion for Teaching (8)
Responsible (10)	Patient (10)
Teachers' Respect for Students (6)	Tolerant of New Ideas (11)

Note. Values enclosed in parentheses indicate the frequency with which the theme appeared in the students' essays.

Table 2

Reliability Statistics for the Six Point Likert Scale Surveys taken by Teachers and Students

Six Point Likert Scale Survey		
	Cronbach's Alpha	
Domain	Teachers[a]	Students[b]
Classroom Management and Leadership	.785	.776
Intelligence and Thinking Skills	.686	.810
Moral and Ethical Qualities	.828	.854
Personality and Socio-emotional Qualities	.809	.858

[a]$n = 42$. [b]$n = 300$.

Comparing teachers' and students' responses to the Likert scale survey (Table 3) shows both teachers and students perceive that clear instruction (the ability of a teacher to explain complex ideas clearly), engages students' attention, enthusiastic and knowledgeable are all important teacher qualities. Clear instruction and knowledgeable are both from the intelligence and thinking skills domain. No qualities from the moral and ethical qualities domain were ranked in the top 10 qualities by both teachers and students.

Table 3

The Most Popular Qualities of Effective Teachers as Determined by Teachers' and Students' Responses to the Six Point Likert Scale Survey

Six Point Likert Scale Survey				
	Teachers[a]		Students[b]	
Themes (Sub-scales)	Mean	Rank	Mean	Rank
Builds Relationships	5.55	3rd	–	–
Challenges Students to Think	5.62	1st	–	–
Cheerful Personality	–	–	5.30	= 8th
Clear Instruction	5.50	6th	5.34	7th
Engages Students' Attention	5.60	2nd	5.42	2nd
Enthusiastic	5.52	= 4th	5.38	4th
Friendly and Approachable	–	–	5.37	5th
Honest	5.33	10th	–	–
Knowledgeable	5.38	8th	5.41	3rd
Passion for Teaching	5.52	= 4th	–	–
Patient	–	–	5.28	10th
Professional	5.45	7th	–	–
Responsible	–	–	5.36	6th
Students' Respect for Teachers	–	–	5.51	1st
Teachers' Respect for Students	–	–	5.30	= 8th
Tolerant of New Ideas	5.36	9th	–	–

Note. Responses measured on a scale where 1 = strongly disagree and 6 = strongly agree.
Note. Dashes indicate that the theme was not ranked amongst the top ten teacher qualities.
[a]n = 42. [b]n = 300.

Comparing teachers' and students' responses to the ipsative comparison (Table 4) shows both teachers and students perceive that clear instruction, engages students' attention, enthusiastic, knowledgeable, passion for teaching and tolerant of new ideas are important teacher qualities. The ability of the teacher to explain complex ideas clearly is given the highest importance by both teachers and students. Four of the qualities; clear instruction, engages students' attention, enthusiastic and knowledgeable were also ranked highly by teachers and students in their response to the Likert scale survey. Three qualities; enthusiastic, passion for teaching and tolerant of new ideas are from the personality and socio-emotional qualities domain.

Table 4

The Most Popular Qualities of Effective Teachers as Determined by Teachers' and Students' Responses to the Ipsative Comparison

Ipsative Comparison				
Themes (Sub-scales)	Teachers[a]		Students[b]	
	Mean	Rank	Mean	Rank
Challenges Students to Think	1.52	2nd	–	–
Cheerful Personality	–	–	2.26	= 9th
Clear Instruction	1.50	1st	1.72	1st
Engages Students' Attention	1.76	6th	1.88	3rd
Enthusiastic	1.79	= 7th	2.10	7th
Humorous	–	–	2.01	6th
Intelligent	–	–	2.26	= 9th
Knowledgeable	1.79	= 7th	1.89	4th
Manages Classroom	1.81	9th	–	–
Passion for Teaching	1.64	3rd	1.86	2nd
Positive Role Model	2.36	10th	–	–
Responsible	1.74	5th	–	–
Students' Respect for Teachers	–	–	2.11	8th
Tolerant of New Ideas	1.67	4th	1.92	5th

Note. Responses measured on a scale where 1 = most preferred teacher quality and 4 = least preferred teacher quality.
Note. Dashes indicate that the theme was not ranked amongst the top ten teacher qualities.
[a]$n = 42$. [b]$n = 300$.

Statistically significant differences between teachers' and students' responses to the Likert scale survey are shown in Table 5. The most striking differences (difference in means > 1.0) exist for cheerful personality ($p < .001$) and responds to questions ($p < .001$), both of which are qualities that the students perceive to be more important than the teachers.

Statistically significant differences between teachers' and student's responses to the ipsative comparison are shown in Table 6. The most striking differences (difference in means > 1.0) exist for challenges students to think ($p < .001$), which the teachers perceive to be a more important quality than the students, and friendly and approachable ($p < .001$), which the students perceive to be a more important quality than the teachers.

Table 5

Qualities for which there are Statistically Significant Differences in Means between Teachers' and Students Responses to the Six Point Likert Scale Survey

Two Tailed t-Test for Means on Independent Samples				
Themes (Sub-scales)	Teachers[a]		Students[b]	
	M	*SD*	*M*	*SD*
Builds Relationships	5.55***	.550	5.10***	.793
Challenges Students to Think	5.62***	.539	5.16***	.732
Cheerful Personality	4.29***	.864	5.30***	.791
Disciplinarian	3.98*	1.278	4.38*	1.220
Friendly and Approachable	4.67***	.816	5.37***	.665
Humorous	4.86**	.783	5.24**	.812
Intelligent	4.31***	1.179	5.14***	.706
Leads Classroom	4.90**	.932	5.23**	.667
Moral	4.76*	.932	5.04*	.803
Passion for Teaching	5.52**	.594	5.22**	.710
Responds to Questions	3.24***	1.226	4.96***	.807
Well Organised	4.74*	.964	5.06*	.759

Note. Responses measured on a scale where 1 = strongly disagree and 6 = strongly agree.
[a]$n = 42$. [b]$n = 300$.
*Denotes that the difference in means is statistically significant at the $p < .05$ level.
**Denotes that the difference in means is statistically significant at the $p < .01$ level.
***Denotes that the difference in means is statistically significant at the $p < .001$ level.

Qualities for which there are statistically significant differences between the teachers' and students' responses on both the Likert scale survey as well as the ipsative comparison include; challenges students to think, cheerful personality, disciplinarian, friendly and approachable, humorous, intelligent, leads classroom and responds to questions.

Table 6

Qualities for which there are Statistically Significant Differences in Means between Teachers' and Students Responses to the Ipsative Comparison

Two Tailed t-Test for Means on Independent Samples				
Themes (Sub-scales)	Teachers[a]		Students[b]	
	M	*SD*	*M*	*SD*
Challenges Students to Think	1.52***	.740	2.75***	1.100
Cheerful Personality	2.90***	.850	2.26***	1.176
Disciplinarian	2.98**	1.047	3.46**	.807
Empathetic	2.52***	1.018	3.24***	.929
Enthusiastic	1.79*	.951	2.10*	.967
Friendly and Approachable	3.74***	.627	2.30***	1.036
Humorous	2.69***	1.047	2.01***	1.007
Intelligent	2.90***	1.122	2.26***	1.027
Leads Classroom	3.45***	.861	2.78***	1.057
Manages Classroom	1.81***	.740	2.40***	1.060
Positive Role Model	2.36***	1.032	2.93***	1.011
Responds to Questions	3.55***	.803	2.77***	1.124
Responsible	1.74***	.912	2.57***	1.050
Students' Respect for Teachers	2.79***	.925	2.11***	1.110
Teachers' Respect for Students	2.83*	.908	2.52*	.973

Note. Responses measured on a scale where 1 = most preferred teacher quality and 4 = least preferred teacher quality.
[a]$n = 42$. [b]$n = 300$.
*Denotes that the difference in means is statistically significant at the $p < .05$ level.
**Denotes that the difference in means is statistically significant at the $p < .01$ level.
***Denotes that the difference in means is statistically significant at the $p < .001$ level.

Table 7 and Figure 2 summarise the results for the Likert scale survey by comparing teachers' and students' mean scores on each of the four domains. Statistically significant differences exist for intelligence and thinking skills ($p < .001$) and personality and socio-emotional qualities ($p < .05$), both of which the students perceive to be more important than the teachers.

Table 7

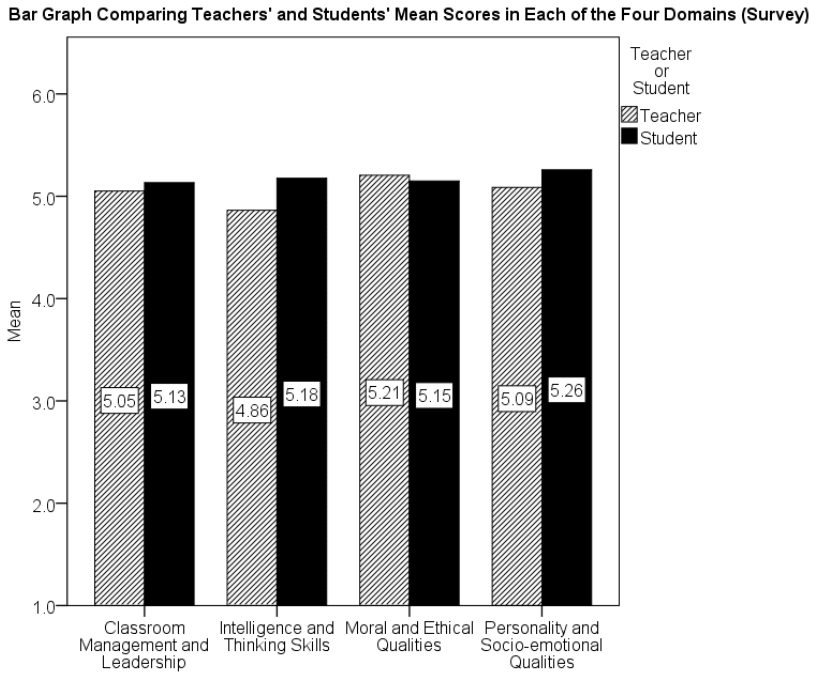
Summary of Results for the Likert Scale Survey: A Comparison of Teachers' and Students' Mean Scores on Each of the Four Domains

Two Tailed t-Test for Means on Independent Samples				
Domains	Teachers[a]		Students[b]	
	M	*SD*	*M*	*SD*
Classroom Management and Leadership	5.051	.553	5.134	.532
Intelligence and Thinking Skills	4.864**	.507	5.177**	.496
Moral and Ethical Qualities	5.205	.518	5.149	.527
Personality and Socio-emotional Qualities	5.086*	.461	5.259*	.509

Note. Responses measured on a scale where 1 = strongly disagree and 6 = strongly agree.
[a]n = 42. [b]n = 300.
*Denotes that the difference in means is statistically significant at the $p < .05$ level.
**Denotes that the difference in means is statistically significant at the $p < .001$ level.

Figure 2

A Graphical Summary of the Results for the Likert Scale Survey: A Comparison of Teachers' and Students' Mean Scores on Each of the Four Domains



Note. Responses measured on a scale where 1 = strongly disagree and 6 = strongly agree.
Note. The scale on the vertical axis of the bar graph starts at 1.0 and not 0.0. This is because it is impossible for teachers or students to give a value less than one in response to the ipsative comparison.

Table 8 and Figure 3 summarise the results to the ipsative comparison by comparing teachers' and students mean scores on each of the four domains. Statistically significant differences exist for moral and ethical qualities ($p < .001$), which the teachers perceive to be more important than the students, and personality and socio-emotional qualities ($p < .001$), which the students perceive to be more important than the teachers.

For teachers on the ipsative comparison, intelligence and thinking skills are negatively related to moral and ethical qualities with a Pearson's correlation coefficient of $r = –.706$ ($p < .001$). For students on the ipsative comparison, intelligence and thinking skills are negatively related to moral and ethical qualities with a Pearson's correlation coefficient of $r = –.547$ ($p <.001$).

Table 8

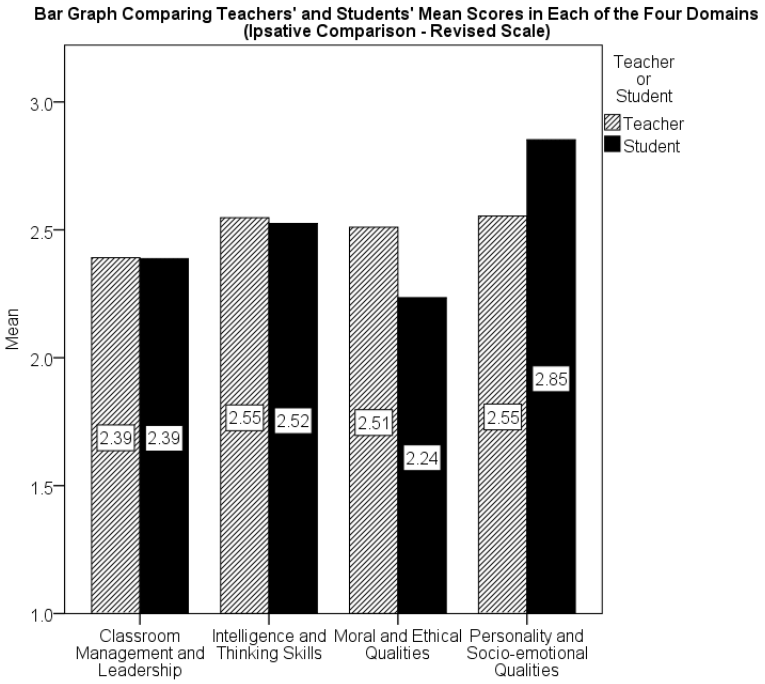
Summary of Results for the Ipsative Comparison: A Comparison of Teachers' and Students' Mean Scores on Each of the Four Domains

Two Tailed t-Test for Means on Independent Samples				
Domains	Teachers[a]		Students[b]	
	M	*SD*	*M*	*SD*
Classroom Management and Leadership	2.609	.392	2.612	.389
Intelligence and Thinking Skills	2.452	.621	2.475	.576
Moral and Ethical Qualities	2.490*	.547	2.765*	.503
Personality and Socio-emotional Qualities	2.446*	.340	2.148*	.525

Note. Responses measured on a scale where 1 = most preferred teacher quality and 4 = least preferred teacher quality.
[a]$n = 42$. [b]$n = 300$.
*Denotes that the difference in means is statistically significant at the $p < .001$ level.

Figure 3

A Graphical Summary of the Results for the Ipsative Comparison: A Comparison of Teachers' and Students' Mean Scores on Each of the Four Domains



Note. For this graph, students' responses to the ipsative comparison have been re-coded so that 4 = most preferred teacher quality and 1 = least preferred teacher quality. This is because people tend to interpret graphical data as "more" = "better."
Note. The scale on the vertical axis of the bar graph starts at 1.0 and not 0.0. This is because it is impossible for teachers or students to give a value less than one in response to the ipsative comparison.

Table 9 clearly shows that, when compared to one another, there are statistically significant differences between the students' responses on all four domains of the ipsative comparison. Most striking is the emphasis that students place on teacher qualities in the personality and socio-emotional domain. Students perceive teacher qualities in this domain to be more important than those in the classroom management and leadership domain ($p < .001$), the intelligence and thinking skills domain ($p < .001$) and the moral and ethical qualities domain ($p < .001$). In addition, students perceive intelligence and thinking skills to be more important than classroom management and leadership skills ($p < .01$) while classroom management and leadership skills are perceived to be more important than moral and ethical qualities ($p < .001$). This corroborates the findings of Maddux et al. (1985).

Table 9

Which Qualities of Effective Teachers do Students Value the Most? A Comparison of Student's Mean Scores Across All Four Domains

Two Tailed t-Test for Means on Paired Samples			
		Students[a]	
Pair	Domain	*M*	*SD*
1	Classroom Management and Leadership	2.612*	.389
	Intelligence and Thinking Skills	2.475*	.576
2	Classroom Management and Leadership	2.612**	.389
	Moral and Ethical Qualities	2.765**	.503
3	Classroom Management and Leadership	2.612**	.389
	Personality and Socio-emotional Qualities	2.148**	.525
4	Intelligence and Thinking Skills	2.475**	.576
	Moral and Ethical Qualities	2.765**	.503
5	Intelligence and Thinking Skills	2.475**	.576
	Personality and Socio-emotional Qualities	2.148**	.525
6	Moral and Ethical Qualities	2.765**	.503
	Personality and Socio-emotional Qualities	2.148**	.525

Note. Responses measured on a scale where 1 = most preferred teacher quality and 4 = least preferred teacher quality.
[a]$n = 300$.
*Denotes that the difference in means is statistically significant at the $p < .01$ level.
**Denotes that the difference in means is statistically significant at the $p < .001$ level.

Discussion

Implications and Recommendations

The present study has successfully identified (within the context of the school that the research was performed in) the qualities that high ability female secondary school students perceive their most effective teachers have. These are, in order of preference according to the ipsative comparison: (1) Clear instruction; (2) Passion for teaching; (3) Engages students' attention; (4) Knowledgeable; (5) Tolerant of new ideas. The qualities of effective teachers of high ability female secondary school students, as perceived by the teachers themselves are: (1) Clear instruction; (2) Challenges students to think; (3) Passion for teaching; (4) Tolerant of new ideas; (5) Responsible.

With regards to the results from the Likert scale survey, statistically significant differences can be seen to exist between teachers' and students' perceptions for intelligence and thinking skills ($p < .001$) and personality and socio-emotional qualities ($p < .05$), both of which the students perceive to be more important than the teachers. In addition, statistically significant differences between teachers' and students' perceptions can be seen to exist when reviewing the results of the ipsative comparison, specifically for moral and ethical qualities ($p < .001$), which the teachers perceive to be more important than the students, and personality and socio-emotional qualities ($p < .001$), which the students perceive to be more important than the teachers. It can be seen that on both the Likert scale survey and the ipsative comparison, students consistently value teacher qualities within the personality and socio-emotional domain more highly than the teachers do themselves.

With reference again to the results for the ipsative comparison, students perceive that teacher qualities within the personality and socio-emotional domain are more important that teacher qualities within the intelligence and thinking skills domain ($p < .001$) while teacher qualities within the intelligence and thinking skills domain are more important than teacher qualities within the classroom management and leadership domain ($p < .01$) and teacher qualities within the classroom management and leadership domain are more important than teacher qualities within the moral and ethical qualities domain ($p < .001$). These findings, derived from a group of high ability female secondary school students in Singapore, are in *complete agreement* with the research findings of Maddux et al. who performed their research on a group of gifted junior high school students in America. This observation is made even more interesting in light of the research performed by VanTassel-Baska et al. (2008) who performed a cross-cultural study on instructional practices in Singapore and America. Teachers in Singapore were deemed to be more effective at using pedagogies appropriate for high ability students when compared to their colleagues in America, while the American

teachers were found to hold higher academic qualifications than their counterparts in Singapore. However, regardless of differences in teacher qualifications and classroom practices, students in Singapore and America still value personality and socio-emotional qualities in their teachers over all other qualities.

It may therefore be tentatively concluded that high ability secondary school students, independent of their cultural background and regardless of their advanced cognitive ability, appear to value teachers who are approachable, caring, cheerful, enthusiastic, humorous, passionate about teaching, patient and tolerant of new ideas. However, this may not be unique to high ability students, but something that is simply endemic in human nature.

Results from this study may contribute to the development of existing teacher training programmes. Although it may be impossible for a person to learn how to be cheerful, enthusiastic or humorous, teachers can make a conscious effort to be more approachable, patient and tolerant of new ideas – qualities that may be developed through workshops, role-play and reflective practice.

Results from this study may also help to refine instruments that are used to evaluate teachers' performance in the classroom, with the recommendation that some emphasis is placed on the teacher's personal skills and relationship with the class in addition to their classroom management, pedagogy, subject mastery and cognitive skills.

Results from this study show that students do not value moral and ethical qualities in their teachers as highly as the other qualities that were investigated. This may be because the students have other people in their lives, such as parents, older siblings and friends who play a significant role their moral development. Consequently, students do not perceived the role of the teacher to be so important.

Other results from this study show that teachers do not perceive high intelligence as a quality that is essential for all teachers of high ability students to possess. This may be

because they believe that effective pedagogy is more important as it allows them to communicate ideas clearly and effectively to their students. Likewise for responding to students' questions, teachers may believe that their role is to use effective pedagogy, such as critical thinking and Socratic questioning, to encourage students to answer each other's questions rather than answer the questions directly themselves.

Limitations to the Study

1. The sample size for teachers (n = 42) was relatively small. However, these teachers were chosen due to their close interaction with the student sample.

2. Only female students were involved in the study (this is in alignment with the area of study and the research questions). Consequently, it may not be possible to generalise the results to high ability male secondary school students.

3. Students from a relatively narrow age range were involved in the study (14 years and 10 months, standard deviation = 6 months). Therefore, caution should be taken when the results are generalised to high ability primary school or junior college students.

4. During analysis of the quantitative data, ordinal data from the Likert scale surveys and ipsative comparisons were interpreted as interval data (a quasi-interval scale).

5. The research does not explain the reasons for the statistically significant differences that exist between the mean responses of teachers and students on certain sub-scales and domains.

Future Research

1. The research could be extended to include Year One, Two and Four girls from the same school to determine whether age is a factor that affects students' perceptions of teacher quality.

2. The research could be extend to include high ability male secondary school students in Singapore to determine whether gender is a factor that affects students' perceptions of teacher quality.

3. Research could be performed that compares the perspectives of high ability students with those of ordinary students. This study would identify qualities that the students perceive are unique to the teachers of the high ability students.

4. Focus group interviews could be conducted with teachers and students in order to determine why statistically significant differences exist between the mean responses of teachers and students on certain sub-scales and domains.

5. It would be interesting to collect demographic information from teachers with regards to their gender. This could be use to identify statistically significant differences between male and female teachers when analysing their perspectives on the qualities of effective teachers of high ability students. Do the perceptions of high ability female secondary school students, with regards to the qualities of their most effective teachers, most closely resemble the perceptions of female or male teachers? What would be the possible consequences of this?

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