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Greek Teachers' Beliefs as Correlated with Students' Self-efficacy during a Nomination Procedure of Students with High Potential

This research is an effort to explore how students' self-efficacy is correlated with teachers' beliefs about their high abilities when a nomination procedure is conducted. Two tools were administered: a) a questionnaire of 21 general characteristics of students with high potential, on a 5 point Likert scale (5 "absolutely agree"), in 15 state schools of primary and secondary education in Athens and other non-urban areas of Greece, and b) a questionnaire of 16 questions on children's self-efficacy; 10 of them derived from the Schwarzer & Jerusalem general self-efficacy scale and 6 questions were created for the purpose of this study with five questions of negative content. 647 students of 10−14 years of age answered the self-efficacy items. During the nomination procedure, 49 students were nominated for high potential by 24 out of the 42 teachers, who participated voluntarily. Cronbach's α for teachers' answers was .84, for all students' selfefficacy answers $\alpha = .72$ and for the group of nominated students $\alpha = .77$. No significant differences in self-efficacy emerged in terms of gender and age groups of 10-11 years (N = 244) and 12-14 years (N = 387). Analyses with the t test were also conducted for the group of 48 nominated students in terms of gender and age groups without any significant differences, although slightly higher self-efficacy scores appeared for the younger students. However, ANOVA analyses revealed statistically significant differences for the total sample between students in Athens (N=291) and in rural areas of Greece (N = 349), F(1, 639) = 5.01 p = .03; slightly higher scores appeared for the students in the provinces (M = 3.00 SD = 1.7) in comparison with students in the capital (M = 2.86)SD = 1.64). Low and medium positive correlations appeared between teachers' beliefs about the nominated students' high abilities and students' self-reports on their selfefficacy, ranging from rho=.30 to .46. This moderate relation between teachers' and students' beliefs about students' abilities is discussed in terms of the importance of the role of teachers in understanding, accepting and reinforcing high ability students during school life.

Keywords: Students' potential, teachers' nomination for high abilities, self-efficacy

The teacher's role in nominating students' high potential

The teacher's role is of great importance in motivating students to learn and achieve their goals. Teachers' perceptions about students' potential have a specific, crucial impact on their expectations and also interact with their students' self-efficacy, self-esteem (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), high commitment to educational goals, social adjustment and academic effectiveness (Savolainen, Engelbrent, Nel, & Malinen, 2012).

Teachers' beliefs about giftedness have been proved to influence their attitudes towards gifted students and their relationships with classmates and teachers, along with their behavior in class (Brophy & Good, 1984). Therefore, teaching methods and strategies they select and the degree to which they manage to meet their students' needs seem to be dependent on their perceptions and beliefs about the potential of all their students in class, and about the gifted students' abilities, capacities, skills, and social behavior (Jones, Miron, & Kelaher-Young, 2012). The general set of teachers' beliefs and behavior interacts dynamically with students' self-concept, beliefs about effectiveness in class and academic achievement (Misset, Brunner, Callahan, Moon, & Price Azano, 2014).

Students' academic potential

The accomplishment of students' academic potential is related to their awareness of high abilities, high self-esteem and high self-efficacy (Schunk & Pajares, 2005). Selfefficacy concerns the beliefs about success in aims and goals, along with the ways an individual evaluates abilities and actions, fulfillment of difficult tasks and stability of efforts to succeed (Bandura, 1997). It is correlated with high motivation to succeed and less fear of being ineffective in unknown situations (Chalshtari & Heidari, 1016; Mahmoudi, Zadegan, Saari Beglou, & Ketabi, 2013; Schunk & Pajares, 2005). The higher self-efficacy students present, the more effective adaptation and self-control they display and the lower level of anxiety and stress they feel; such a frame of fruitful characteristics often facilitates learning procedures and high achievement (Conley, 2012). Students often tend to explain the results of their actions as ongoing attitudes or "beliefs under formation", and in the same way mostly explain their capacities and high or low abilities in one or more domains. Therefore, they tend to perceive their high academic achievement as a proof of high effectiveness, and vice versa (Bandura, 1997; Van Dinter, Dochy & Segers, 2011). In cases where students are not able to evaluate their achievements, the feedback of significant others - parents, teachers and peers - becomes a criterion of great significance for them (Bong & Skaalvik, 2003).

Teachers' perceptions and beliefs about giftedness differ across cultures; some cross-cultural studies found that teachers agree with the idea that ability grouping fosters the possibility of labeling (Lassig, 2003; Tirri, & Laine, 2017). When teachers are invited to identify the gifted students in class, they usually focus on students' characteristics that are not helpful for them in judging gifted abilities, such as their school performance, school grades, ways of doing their homework and their behaviors in class (Gari, Kalantzi-Azizi, & Mylonas, 2000; Hany, 1997). They usually tend to identify gifted students more effectively when their judgments rely mostly on scales of gifted student characteristics, than on their own general impression, e.g., the SRBCSS, Scales for Rating the Behavioral Characteristics of Superior Students (Renzulli, Smith, White, Callahan, Hartman, & Westberg, 2002).

Towards a systemic perspective of students' potential

From a systemic point of view, identification of gifted abilities is thought to be an evolving process of enhancing both excellent abilities and excellent context parameters (Barab & Plucker, 2002; Ziegler, & Phillipson, 2012). For the Actiotope model of giftedness (Ziegler, 2005), the predominant goal of gifted identification is not to identify the gifted students themselves, but to provide them the optimal conditions to flourish and create a "smart context" that is able to accomplish excellent potential for the excellent individuals. The teacher-student interaction, within the dense network of interactions of the school community is one of the core patterns of interaction that seem to determine high motivation and high achievement for students. This interaction influences directly two important exogenous resources for students, the didactic capital and the social capital (Ziegler & Baker, 2013; Ziegler, Stoeger, & Balestrini, 2017). Teachers' support of students is a crucial prerequisite for their motivation, self-efficacy, and positive social and academic adjustment (Savolainen, Engelbrent, Nel, & Malinen, 2012). However, prior training of teachers in gifted education has been proved to be a fundamental factor for teacher-student effective interaction; specific knowledge and skills along with openness to use alternative didactic strategies and techniques in class seem to be a demanding prerequisite for teachers' effectiveness (Weisel & Dror, 2006).

The present study

The present research is an initial effort to correlate teachers' beliefs about the characteristics of high ability students in class, nominated by themselves during an identification procedure, with the nominated students' self-efficacy. Those teachers who participated in the project did not have any prior teaching experience, knowledge or expertise in the education of gifted students, and this is a common characteristic for the great majority of teachers in the Greek mainstream educational system. Although there are inclusion classes, and a parallel support network of procedures in the regular classroom to educate students with disabilities and deficiencies, there is no provision for the gifted students.

Method

Sample and procedure

647 students of 10–14 years of age and 42 teachers participated in the project voluntarily, in 15 state schools of primary and secondary education, in Athens and some non-urban areas of Greece with 500 – 16,000 inhabitants. Most of the teachers were women (63.6%), and they lived in Athens (68.1%). The great majority of them worked in primary education and they did not have a postgraduate degree or diploma. They have never participated in any training project, in seminars or programs for the education of gifted and talented children (90.7%).

An invitation to all teachers and the director of each school was sent via e-mail, along with a short description of the study goals regarding the nomination of students with high potential and high abilities. Their voluntary participation was verified within the following week. The questionnaires were administered in class to all students, with their teacher present and teachers filled in a questionnaire separately for each nominated student.

During a nomination procedure of high ability students, 24 (57.1%) teachers nominated one or more students, while the remaining teachers did not nominate any students. The latter group answered an open-ended question about the reasons for not nominating any students, giving more than one answer; the great majority of answers underlined that none of the students in class appeared high ability (84.6%). In some other answers, teachers mentioned either that they did not feel comfortable nominating students' abilities or that most of the students were close to "the average of the class"; approximately half of the teachers' answers reported serious learning difficulties or other disabilities for the majority of students in class.

Each student was likely to be nominated by one or more teachers and each teacher could nominate more than one student. Among the 49 nominated students, 28 were females (57.1%), while 36 students (73.5%) came from schools in rural areas.

All the nominated students had very good or excellent marks. The mean scores of their marks in Greek language (M = 8.35 SD = 5.07) and mathematics (M = 8.56 SD = 6.06) were almost excellent, on a ten-point scale (5 "pass" to 10 "excellent").

Fundamental ethical research principles were employed that included teachers' and students' consent of volunteer participation. Additionally, anonymity of answering, parental permission and respect towards regulations and rules of the schools that participated were also included in the research ethics.

Tools

Two tools were administered: a) a questionnaire for teachers that consisted of 21 questions about general characteristics regarding students' high potential, abilities and skills – cognitive, learning, social and behavioral – in class. It has been used previously with a Greek sample of teachers (Gari, Kalantzi-Azizi & Mylonas, 2000). A 5-point Likert scale was employed (from 5 "absolutely agree" to 1 "absolutely disagree"); b) a questionnaire of 16 questions on student's self-efficacy. It consisted of the Generalized Self-Efficacy Scale of 10 questions created by Schwarzer & Jerusalem (2010), on a 4-point scale from 4 "exactly true" – 1 "not at all true". Six additional questions were created for this study with a negative meaning for self-efficacy being employed, e.g. "I avoid setting ambitious goals because I'm afraid that I'll fail". A reverse scale was employed for this kind of question (1 "exactly true" – 4 "not at all true"). Demographic items for both teachers and students were also used.

Cronbach α indices were satisfactory. For the 21 items for teachers α =.89; for the total sample of 647 students' self-efficacy α =.72, and for the 49 nominated students α =.77.

Results

The majority of teachers agreed with most of the 21 positive characteristics of the students' abilities and skills they nominated (agreement ranging from 62.5% to 91.7%) reporting that "they have good relationships with all teachers at school", "they are very clever", they "have a solid background of knowledge", they "are very effective in school courses", they "effectively prepare homework every day", "they concentrate on their tasks in class", they "have good relationships with their classmates", they "are exploratory", they "are thirsty for acquiring new knowledge" and they have "high critical thinking". However, approximately half of them (ranging from 50% to 54.2%) argued that these students "understand new knowledge faster in class than the rest of the students", "express their opinion without fear", "do not need help doing their homework", "react with coolness when their plans are aborted", and "find successful solutions for many problems". Finally, approximately only one third of them (37.5%) agreed with the "originality of the nominated students' ideas" and "finding solutions for difficulties that appear in class" respectively.

For teachers who nominated students in class (N=24), the mean scores of their answers regarding the characteristics attributed to the nominated students ranged from 3.2 (SD=1.17) to 4.92 (SD=.28), showing their general agreement with students' high potential (Table 1). The lower mean scores referred to their partial agreement with the nominated students' original ideas, original solutions to problems in class, cool reactions in cases of being frustrated, expressing opinions and ideas without fear, and working independently for school courses. The highest mean scores, almost close to absolute agreement, had to do with students' high intelligence, high critical thinking, and good relationships with teachers at school.

Table 1. Mean scores and standard deviations for 21 items regarding general characteristics that teachers attributed to 48 students nominated for high potential.

	M	SD
. He/she is clever.	4.79	.51
. He/she has high critical thinking.	4.63	.50
. He/she finds solutions for many issues.	4.46	.59
. He/she understands easily new knowledge in class.	4.54	.50
. He/she is exploratory.	4.46	.89
. He/she has original ideas.	4.25	.74
. He/she is effective in school knowledge.	4.71	.55
. He/she has a stable background of knowledge.	4.71	.69
He/she suggests original solutions to issues in class.	3.92	1.18
O. He/she expresses his/her opinion without fear.	4.29	1.00
 He/she is thirsty for acquiring knowledge. 	4.50	.83
2. He/she has great interest in class courses.	4.58	.72
3. He/she effectively prepares their homework every day.	4.67	.70
4. He/she is very effective in school courses.	4.67	.57

15.	He/she does not need help doing homework.	4.22	.96
16.	He/she is interested in school achievements.	4.54	.67
17.	He/she concentrates on his/her tasks in class.	4.39	.71
18.	He/she has responsible behavior in various situations at school.	4.58	.78
19.	He/she reacts with coolness when his/her plans/expectations are aborted.	3.96	1.19
20.	He/she has good relationships with their classmates.	4.50	.89
21.	He/she has good relationships with all teachers at school.	4.92	.28

As regards the nominated students who answered the original positive 10 self-efficacy items (N=49), mean scores were close to 3.0 "it is quite true", ranging from 2.85 (SD=.89) to 3.21 (SD=.74), and presenting a positive sense of self-efficacy (Table 2). This view was also verified by the reverse items of negative meaning about self-efficacy; mean scores ranged from 2.60 (SD=.96) to 3.33 (SD=.72) and represented the students' rejection of a negative self-efficacy view of themselves.

Table 2. Mean scores and standard deviations for the 16 items of self-efficacy of the 48 nominated students

		M	SD
1.	I can always manage to solve difficult problems if I try hard enough.	3.29	.62
2.	If someone opposes me, I can find means and ways to get what I want.	2.85	.89
3.	I feel that I "do not get in my own way" when faced with a difficult situation.	2.69	1.13
4.	It is easy for me to stick to my aims and accomplish my goals.	3.21	1.01
5.	I am confident that I could deal efficiently with unexpected events.	2.96	.71
6.	In difficult situations it is difficult to trust my capacities.	2.88	1.12
7.	Thanks to my resourcefulness, I know how to handle unforeseen situations.	2.98	.63
8.	I can solve most problems if I invest the necessary effort.	3.27	.89
9.	I avoid setting ambitious goals because I'm afraid that I'll fail.	3.33	.72
10.	I can remain calm when facing difficulties because I can rely on my coping abilities.	3.00	.87
11.	When I am confronted with a problem, I can usually find several solutions.	3.08	.74
12.	I think I cannot confront challenges on my own without support (e.g., from family, school, etc.).	2.60	.96
1,3.	If I am in a bind, I can usually think of something to do.	3.21	.74
14.	No matter what comes my way, I'm usually able to handle it.	2.85	.82
15.	It is difficult for me to be cool when faced with the negative effects of a problem.	2.88	.91
16.	When I am anxious, I feel that I will not be able to handle difficulties.	2.60	.98

Note. The six additional items, created for this study, are marked in italics.

Few Pearson r statistically significant inter-correlations were medium and positive, ranging from .31 to .46 (p = .05) between the 21 teachers' answers and the 16 self-effi-

cacy items of students. Most of the correlations were low or very low, showing a weak association between these teachers' beliefs about students' high potential and what the nominated students themselves believe about their effectiveness. It is also important to underline that three sets of the positive, medium, and statistically significant correlations emerged: a) between the teacher attributed originality of ideas (r=.41), and responsibility for behavior in class (r=.46) with the students' self-awareness that they are able to find alternative solutions to emerging problems, b) between students' certainty in handling difficult problems (r=.45) and unexpected situations (r=.43) with the teacher attributed stable background of knowledge, and c) the same items for students with the teacher attributed good relationships between the nominated students and teachers (r=.43) and r=.45, respectively).

Levene's analyses of homogeneity that were conducted separately for the 10 items of general self-efficacy F(1,633)=.23, p=.63, and also for the 6 created items F(1,640)=2.19, p=.14, showed a normal distribution for both sets of items; therefore, they were further analyzed as a total set of self-efficacy items for the total sample of students (N=647). No significant differences in self-efficacy emerged in terms of students' gender and age groups of 10-11 years (N=244) and 12-14 years (N=387), although slightly higher self-efficacy scores appeared for the younger students. Analyses with the t test were also conducted for the group of 48 nominated students in terms of gender (females n=27 and males n=21) and age (10-11 years, n=23 and 12-14 years n=25) with no significant differences, as well.

Finally, ANOVA analyses revealed statistically significant differences for the total sample between students in Athens (N= 291) and in rural areas of Greece (N= 349), F(1, 639)= 5.01 p =.03; slightly higher scores appeared for the students in the provinces (M = 3.00 SD = 1.7) in comparison with students in the capital (M = 2.86 SD = 1.64). This result did not appear when the nominated students in Athens (n= 13) were compared with students of the non-urban areas (n= 35), t(46)=.69 p =.49, p >.05.

Discussion

Towards a systemic approach of the teacher-student interaction, on a beliefs level, the teacher-student fruitful collaboration can be developed through changing the teacher's "malfunctioning" beliefs that mostly hinder students' potential fulfillment (Ziegler & Phillipson, 2012). This study is an effort to approach the interaction and interdependence between teachers and students, in the frame of teachers' beliefs about students' potential, high abilities and adequate behavior in class, and also students' reports about their self-efficacy. Results showed that the teachers of this sample attributed to the nominated students less the characteristics of original ideas, original solutions in problem solving, and behavioral control in unexpected or difficult situations in class. They mostly attributed other characteristics such as high intelligence, critical thinking, proper concentration on daily homework, studying courses without supervision, and good relationships with teachers and peers. However, these characteristics seemed to be consistent mostly with the profile of "smart students" with excellent marks and high conformity to mainstream attitudes and behavior at

school, and not with students of high potential and high abilities (Gari, Kalantzi-Azizi, & Mylonas, 2000; Hany, 1997). Let's underline that these students who were nominated by their teachers had excellent marks in Greek language and mathematics and a general high academic performance. Taking into consideration that the teachers of this sample had never received any systematic training on giftedness, the above results were expected. They are likely to nominate a group of students derived from "the pool of the smart students" in class; then, answering the relevant questionnaire with 21 characteristics of students, they preferred to give socially desired answers for their positive characteristics, in order to be consistent with their own initial selection (Gari, Kalantzi-Azizi, & Mylonas, 2000).

The group of nominated students did report a positive general view of self-efficacy, arguing that they manage quite well in alternative ways to handle the unexpected problems and difficulties that emerge. However, the weak relationship between teachers' beliefs about the high potential of the nominated students and the students' sense of self-efficacy is noteworthy, and it is in line with the relevant literature (Bong & Skaalvik, 2003; Savolainen, Engelbrecht, Nel, & Malinen, 2012). A reasonable relation for teacher-student beliefs appears only between the teachers' view of students' originality, behavior responsibility and stability of knowledge background with students' self-awareness that they manage to find alternative solutions to difficult problems. Such a restricted association of teacher-student beliefs seems to form a kind of "gap" between them, a pattern of perceptions that may impact students' learning and potential fulfillment.

The small convenience sample of the schools selected and the small sample size of both samples of teachers and the nominated students constitute the limitations of this study. Additionally, the teachers who nominated students' high potential did not have any special prior training on giftedness, and such a fact has a clear impact on their judgements; therefore, they seemed to judge the high abilities of students mostly based on their "intuitive ideas" rather that judgements based on expertise or prior knowledge. It would be interesting to explore further such an impact through comparisons among at least two groups of teachers with different background in training on giftedness.

The aim of this study was not to identify students with high abilities via teachers' judgments; therefore no external criterion, nor any official "diagnosis" of the selected students' abilities were employed. Furthermore, we could not provide any nominated high ability student with alternative educational provision, even if any were identified with high abilities, as no official educational procedures exist in Greek mainstream education.

Conclusions

The results of the study are useful on an initial basis; they depict the difficulties that teachers confront when handling the high abilities and potential of those students who do not follow the mainstream learning strategies and behaviors in class, especially in cases where they do not have any prior adequate training on high abilities and gift-

edness. Therefore, special training for the Greek state schoolteachers seems to be an imperative if we want to advance towards a better and more accurate understanding of students' high potential. From a systemic point of view, the teacher-high ability student interaction should be enriched, offering teachers some organized opportunities to develop their own knowledge on giftedness, and relevant capacities and skills. A better fulfillment of students' high potential seems to be of great importance for students' well-being at school and their mental health (Ziegler & Phillipson, 2012).

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