

When is the challenge for students complicated? Search through high potential and adolescence

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ABSTRACT

Gifted adolescents were faced with the typical problems of their age, and with the difficulties connected with their potential. Often they present behaviour such as school demotivation, perfectionism, sensitivity, over-excitability and social problems. These characteristics can influence academic performance, in a two-way relationship. Purpose of the study is to investigate the behavioural characteristics of the high-potential students. Goal is to better understand the high potential adolescents in order to prepare individual or group interventions, to promote their psychological well-being. Understanding the weaknesses of gifted students allows the structuring of individual or group activities to provide students with tools and strategies to manage their potential. Also this allows to provide teaching methodologies and laboratory to promote the skills of high-potential students in inclusive perspective. The promotion of the skills of gifted students is critical to prevent early school leaving.

Keywords: *Gifted, adolescents, risks, prevention.*

Cuando el reto para los estudiantes es complicado? Buscar entre altas capacidades y adolescencia

Los adolescentes superdotados se enfrentan con los problemas típicos de su edad, y también con las dificultades relacionadas con sus potencialidades. A menudo ellos muestran comportamientos como desmotivación escolar, perfeccionismo, susceptibilidad, sobreexcitación y problemas sociales. Estas específicas características pueden influir sobre el rendimiento escolar en una relación bidireccional. El propósito del presente estudio es investigar sobre las características comportamentales de los estudiantes superdotados. El objetivo es una mejor comprensión de los adolescentes superdotados para preparar una intervención individual o de grupo, para promover su bienestar psicológico. La comprensión de las debilidades de los estudiantes superdotados, permite la organización de actividades individuales o de grupo para proveer a los estudiantes de las herramientas y estrategias para gestionar sus potencialidades. Además este estudio permite ofrecer metodologías de enseñanza y de laboratorio para promover las habilidades de los estudiantes superdotados en una perspectiva inclusiva. La promoción de las habilidades de los estudiantes superdotados es fundamental para prevenir el abandono escolar prematuro.

Palabras clave: *Altas capacidades, adolescentes, riesgos, prevención.*

Giftedness is a gift that is actualized only in particular conditions of motivation, commitment, education, applying to content and specific areas that draw the interest of the subject (NAGC, 2000; 2007; 2010). Gifted are individuals who do not follow the standard evolutionary rates, and have higher intellectual capacity compared to people of the same age (Pfeiffer, 2012).

In some cases giftedness is definable as an asynchronous development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm (Silverman, 2002). This characteristic affects both the personality of the subjects, that their interactions with the environment such as family, school and relationship with peers (Terrassier, 1985; Brofenbrenner et Al., 1998; Heller et Al., 2005).

Adolescence is a stage of development characterized by changes in biopsychosocial development (Renzulli et Al., 2000; Kaufmann, et Al., 2000), that are often experienced by the individual with disharmony; it is the stage of conflict, in which the teenager is looking for a new identity (Erikson, 1968). The feeling of belonging to a group becomes crucial at this stage of life (Erikson, 1968; Charmet, 2000). These dynamics are even more critical in gifted adolescents; in fact, giftedness will make it harder to understand who you are, even in relation to the difficulty in identifying someone similar in the other. The difficulty in identifying a social network of support influences the probability of developing a mood disorder or the implementation of deviant behavior such as delinquent behavior, abuse, behavior that exceeds the limit or that go against the rules (Neihart et. Al, 2002;

Fox et. Al, 2004; Guan et. Al, 2012; Pfeiffer 2012).

Gifted adolescents tend to experience the world from a different perspective than the norm, with qualitative differences in terms of sensitivity, strength, idealism, perfectionism, excitement, complexity, introversion and moral concern (Davis et Al., 1989; Winebrenner et Al., 1994; Reid et Al., 1995; Villani, 1998; Stanley et Al., 2002; Sum et Al., 2003; VanTassel-Baska, 2003; Silverman, 2005; Renzulli et Al., 2006; Hansen et Al., 2007; Peterson, 2008; Mendaglio, 2007). Student's gender does not appear to be a relevant factor in studies on gifted adolescents (Ziegler et Al., 2000).

The fact of not being identified and properly supported, adjustment problems, boredom, underachievement, social and emotional problems, learned helplessness, frustration, lack of motivation, low self-esteem and behavioral problems are some of the most common vulnerabilities and difficulties identified in gifted adolescents (Bees, 1998; Colangelo et Al., 2004; Moon e Reis, 2004).

These aspects are the result of sensitivity to criticism, need to experience success and be recognized for their skills, strong sense of justice that leads them to defend uncomfortable positions with an energy that can be intrusive in the eyes of peers and with a capacity of excellent argument and manipulation (Neihart , 1991; Piechowski, 1991; Dixon et Al., 2001).

This leads them to want to negotiate rules and decisions with parents, teachers and peers, in order to assert their point of view (Fornia et Al., 2001; Zanetti et Al., 2012).

About 20% of gifted adolescents shows characteristics of perfectionism (Zanetti et Al., 2012) with excessively high personal standard; high criticism of the

performance, so that the successes are often underestimated; “*black and white thinking*” where small goals do not count; too much control to details and rules, in order to prevent the error (Silverman, 1998; Flett et Al., 2003; Frost et Al, 1990). The characteristics of perfectionism are often linked to the risk of reduced self-esteem, which is an antecedent of early school leaving and the phenomenon of NEET, *Not – engaged - in Education, Employment or Training* (Baker, 1998; Neihart, 2002).

During primary school gifted students offset the problems of school with cognitive abilities, particularly with memory. In secondary school (age from 11 years) this is no longer sufficient and students clash with complex challenges, which require study and organization strategies (Bishop, 2000; Johnsen et Al., 2005).

The family and the parent / child relationship play an important role in development and growth. In the mutual relationship between parent and child, parental resources and the characteristics of the children are related (Belsky, 1984), but it is also important to assess the culture and contexts of belonging (Bornstein, 2002). Giftedness is expressed in talent, only if it has the opportunity to develop in a supportive environment. The support paths to parenthood are essential with gifted adolescents, as they strengthen the educational skills of the parents themselves and the implementation of specific management strategies (Webb et Al, 1993; Morrone et Al, 2015).

The school should provide a stimulating environment suitable to the specific characteristics of gifted adolescents, in order

to prevent underachievement and boredom. Seven strategies are identified in literature to be used in school: individual attention, challenging curriculum, independent study, tasks that required more capacity to the level of thought, the application of technology, social interaction and the presence of teachers who care about the well-being of students (Sosniak et Al., 2008; Thomas et Al., 2010; Zanetti, 2015; Zanetti et Al., 2016)

The research objective is to identify the recurring characteristics of gifted adolescents, in order to structure the support and intervention routes, specific and calibrated on emerging issues. The expectation is to identify high levels of perfectionism, high levels of awareness of yourself and low ability to pre-establishing goals and achieve them.

METHOD

Participants

The sample comprises students who required psychological support to the Italian Lab of Research and Intervention for the development of Talent, Potential and Giftedness. Participation is voluntary, with parental consent, by signature of data privacy.

The sample consisted of 33 adolescents, 25 males and 8 females, aged between 11 and 17 years (M:13,85; SD:2,04). Students were considered gifted by measurement of IQ measured by WISC-IV. IQ is included in a range between 120 and 156, with an average 137.60 and 9.29 standard deviation. Table 1 specified age and IQ differentiating between males and females.

Table 1. *Age and IQ differentiating between males and females*

	Males (25)	Females (8)
	M (SD)	M (SD)
Age	13,89 (2,19)	13,73 (1,57)
IQ	137,08 (9,16)	139,25 (10,12)

The sample came from different regions of Italy. In particular 16 from Lombardy, 7 from other regions of the North-Italy, 4 from Central Italy, one from South-Italy and one from the islands.

Table 2. *Specifies the order of the school attended by adolescents.*

	Number of adolescents	Percentage
Junior high school (Middle school)	19	57,6%
High school (Secondary school)	14	42,5%

Instruments

The numbers of teenagers by year of school attended is similar for each degree. No student was rejected. In Italy the school is structured into five years of primary school (aged 6 to 10 years), three years of junior high school (11 to 13 years) and in five years of high school (14 to 18 years). For this reason, middle school students and those from high school are considered as different groups.

The study proceeded to the analysis of the tools available in Italy useful to investigate the strengths and difficulties of students in relation to the age range 11-17 years. Some validated questionnaires with a good index of reliability were selected and collected in a battery of self-administered questionnaires (135 items). In Table 3 the instruments used for research are presented.

Table 3. *Instruments used for research*

	AREAS (Number of item)	REFERENCES
PRO.SPERA	Hoping for construction (9)	Nota e Soresi (2012)
HOPE CAREER CENTERED INVENTORY	<ul style="list-style-type: none"> • Self-awareness (4) • Identify short and long term goals (4) • Monitor and evaluate (4) • Personal flexibility (4) 	Spencer G. Niles, Nyung Joon Yoon and Norman E. Admundson (2010)
DESIGN MY FUTURE	Temporal perspective (14)	Soresi, Nota, Ferrari & Sgaramella (2012)
MOTIVATION TO STUDY	<ul style="list-style-type: none"> • Concentration (15) • Perseverance (14) 	Soresi, Nota, Ferrari & Sgaramella (2012)
STRENGTHS & DIFFICULTIES QUESTIONNAIRES	Prosocial behavior (5)	Goodman (1997)
CONNERS' RATING SCALES-REVISED	<ul style="list-style-type: none"> • Family Problems (12) • Emotional problems (12) • Conduct problems (12) • Cognitive problems (12) • Self-Control Problems (7) 	Conners, 1997
PERFECTIONISM SCALE	Perfectionism (7)	Created ad hoc (Gualdi et Al., 2016), through analysis of questionnaires in the international context. Cronbach's alpha ,895

All questionnaires using a Likert scale response and the battery compilation time is about 40 minutes.

Procedures

The research was carried out through the administration of questionnaires battery in a 45 minutes session. The compilation was conducted using SurveyMonkey. Parents of

adolescents were contacted for information and subsequently individual results were presented to parents and teenagers. Every subject has received a personal relationship with its results.

Data analysis

To find out if there are differences between students, ANOVA for independent

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sample was used. the possible significant differences have been investigated in relation to gender and school attended. SPSS statistical software, version 21, was used for the analyses.

There were no significant differences between males and females. Table 4 shows the ANOVA results distinguishing between teenagers attending the middle school (age 11-13) and gifted attending secondary school (14-17).

Table 4. ANOVA results distinguishing between teenagers attending the middle school (age 11-13) and gifted attending secondary school (age 14-17).

	Middle School (N=19)	Secondary School (N=14)	F	Sig
	M (SD)	M (SD)		
Hoping for construction	31,21 (8,35)	25,21 (9,08)	3,86	,058
Self-awareness	9,05 (2,19)	6,85 (3,63)	4,65	,039
Identify short and long term goals	4,63 (2,54)	3,71 (2,61)	1,02	,319
Monitor and evaluate	7,42 (2,91)	6,21 (3,40)	1,20	,282
Personal flexibility	7,84 (3,02)	7,64 (1,94)	,046	,831
Temporal perspective	52,26 (10,29)	43,00 (15,08)	4,40	,044
Concentration	39,94 (9,25)	36,50 (5,50)	1,53	,225
Perseverance	40,05 (9,11)	33,78 (8,16)	4,15	,050
Prosocial behavior	6,57 (2,52)	5,92 (2,64)	,514	,479
Family Problems	8,15 (9,18)	10,71 (6,54)	,795	,379
Emotional problems	8,94 (8,64)	13,92 (8,22)	2,78	,105
Conduct problems	5,15 (5,90)	8,50 (6,94)	2,22	,146
Cognitive problems	5,94 (5,84)	14,92 (8,33)	13,27	,001
Self-Control Problems	9,05 (7,29)	8,71 (7,51)	,017	,897
Perfectionism	9,47 (4,22)	9,00 (4,45)	,097	,758

The analyses reveal significant differences in some scales: Hoping for construction (the positive perception of the work/professional future of the student), Self-awareness (understanding of themselves than interests, values, skills, motivation and goals), Temporal perspective (investigates the levels of resilience to the difficulties of construction of a professional career) and Perseverance (corresponds to the ability to persevere in school commitments and deal with activities involving fatigue, concentration and effort). Specifically, the secondary school students obtain lower scores in the four scales. These results indicate that students

perceive themselves less competent in these areas. Moreover, secondary school students report more problems in the scale Cognitive problems, which investigates issues that create difficulties in the field of completion of school work, concentration on tasks that require mental effort and inattention.

The scores obtained by the entire sample in the *Self-awareness* scale (Table 5) highlight how gifted students exhibit high performance in this area (57% of high level). This indicates that compared to the validation sample, gifted adolescents seem to be more aware of their characteristics.

Table 5. *Levels in self-awareness scale (Hope Career Centered Inventory)*

Level of <i>self-awareness</i>	Number of students	Percentage
Low	4	13%
Medium	9	30%
High	17	57%

The entire sample obtained low scores to the scale *Identify short and long term goals* (Table 6). The scale indicates if the teenager

is able to set goals and achieve them, and 53% of the sample gets a low level.

Table 6. *Levels in Identify short and long term goals scale (Hope Career Centered Inventory)*

Level of <i>identify short and long term goals</i>	Number of students	Percentage
Low	16	53%
Medium	11	37%
High	3	10%

Table 7 shows the levels that the individuals obtained in the perfectionism scale. The scale investigates the presence of characteristics of perfectionism (example: Things are always made in the same way or pretend to be able to carry out very difficult tasks). The scale consists of seven items

with four possible answers (Not true, Partly true, True enough, Very true). Scores are differentiated into four levels of perfectionism. Clinical scores indicate students who have characteristics of perfectionism that impact heavily on daily life.

Table 7. *Levels in Perfectionism scale*

Level of perfectionism	Number of students	Percentage
Unproblematic	5	13%
Borderline	14	40%
Significant problem	12	40%
Clinical problem	2	7%

A high score is indicative of the presence of characteristics and behaviors of perfectionism, which can be considered dysfunctional. 47% of subjects achieved a score indicating significant or clinic problems.

DISCUSSION

The objective of the research is to identify the recurring characteristics of gifted adolescents. The expectation is to identify high levels of perfectionism, high levels of selfawareness and low ability to pre-establishing goals and achieve them. The results are in line with initial expectations.

The absence of significant differences between males and females is in line with the literature (Ziegler et Al., 2000), which emphasizes that the profile of the gifted is more important, in comparison to the gender (Morrone et Al., 2012).

The results show that middle school students have more resources and a more positive self-perception. The time and the school attended appear as important factors and require a greater depth in future studies. In the types of schools there are high differences from teaching methods, school hours and the level of commitment. Gifted students tend to use memory and logical thinking in middle school, but in the transition to secondary school these skills are no longer enough since the school requires increased efforts and organized study skills.

Secondary school students have a vision of their own educational / professional future more negative and this finding raises the possibility of the school hardship and early school leaving. Some difficulties arise in the entire sample, such as the difficulty in identifying and lack aims and perfectionism. These are critical skills and it is necessary to provide prevention projects already from primary school. A high portion of the sample does not seem to put in place pro-social behaviors; this aspect appears correlated to the difficulty in identifying a group of belonging (Cross, 2004; Tieso, 2005). Gifted often have no interests with peers of chronological age, and this affects the sense of belonging to a group. Also the perception of being different from others is a factor that influences the sense of inadequacy and loneliness; in this sense a high sense of self is not always a protection factor (Neihart et Al, 2002).

The collected data are preliminary and are from a clinical sample of gifted adolescents who demand psychological support. The goal is to expand the research to gifted adolescents who have dropped out of school or without difficulty, in order to have a generalizable sample, also with a group of students not gifted.

The analysis of literature (Willings, 1998; Stake, 2000) and the results of the research have enabled us to structure specific psychological interventions for gifted

adolescents. The intervention consist of 8 interviews; of these two are group meetings in order to provide a workspace and knowledge with students with similar characteristics and difficulties. The topics of the interviews are: life story (family, school experience, the time of recognition of the potential), strategies of study, school motivation, friends and relations with other (parents, teachers, peers), social-emotional learning and identification of own resources. The training activities require that the teenager “does something”, this enables to experience the implementation of useful strategies in schools and out of school. This choice is related to the preference of the gifted students for a kinesthetic learning style (Rayneri et Al., 2006). Also the gifted have high levels of verbal and reasoning skills, which leads them to “think and not do”, question related to brooding and avoidance of strenuous activities.

The adolescent’s individual training is juxtapose to an interview with the teachers about the teaching methods and a parent training for parents. Objective is to evaluate the effectiveness of the training in order to prevent adolescent distress of the gifted. These results may be useful to structure specific activities in middle and secondary schools.

Being gifted adolescents involves learning problems and risk of early school leaving, with negative consequences on the emotional and behavioral level. It is therefore essential to recognize the gifted and support them in the growth, creating a network between family, school and support services.

REFERENCES

- Baker, J. A., Bridger, R., and Evans, K. (1998). Models of underachievement among gifted preadolescents: The role of personal, family, and school factors. *Gifted Child Quarterly*, 42(1), 5-13.
- Bees, C. (1998). The GOLD Program: A program for gifted learning disabled adolescents. *Roeper Review*, 21(2), 155-174.
- Belsky, J. (1984). The determinants of parenting: A process model. *Child Development*, 55, 83-96.
- Bishop, K. (2000). The research processes of gifted students: A case study. *Gifted Child Quarterly*, 44, 54–64.
- Bornstein, M. H. (2002). Parenting infants. In M. H. Bornstein (Ed.), *Handbook of parenting: Volume 1: Children and parenting* (2nd ed., pp. 3–43). Mahwah, NJ: Erlbaum.
- Bronfenbrenner, U. and Morris, P. A. (1998). The ecology of developmental process. In Damon, W., and Lerner, R.M. (Eds.), *Handbook of Child Psychology, Vol. 1: Theoretical Models of Human Development*. New York: Wiley, pp. 992-1028.
- Charmet, G.P. (2000). *I nuovi adolescenti: padri e madri di fronte a una sfida*. Raffaello Cortina Editore.
- Colangelo, N., Assouline, S.G., & Gross, M.U.M. (2004). *A Nation Deceived: How schools hold back America’s brightest students*. The Templeton National Report on Acceleration. Iowa City: Belin Blank International Centre for Gifted Education and Talent Development.
- Cross, T.L. (2004). *On the social and emotional lives of gifted children* (2ed.). Waco, TX: Prufrock Press.
- Davis, G. A. and Rimm S.B. (1989). *Education of the gifted and talented*. Prentice-Hall, Inc.
- Dixon, F., Cross, T., & Adams, C. (2001). Psychological characteristics of

- academically gifted students in a residential setting: A cluster analysis. *Psychology in the Schools*, 38, 433–447.
- Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.
- Flett, G. L., Hewitt, P. L., Shapiro, B., & Rayman, J. (2003). Perfectionism, beliefs, and adjustment in dating relationships. In N. J. Pallone (Ed.) *Love, romance, sexual interaction: Research perspectives from Current Psychology* (pp.31-60). New Brunswick, NJ: Transaction.
- Fornia, G.L & Frame, M. W. (2001). The social and emotional needs of gifted children: implications for family counselling. *The family Journal, counselling and therapy for couples and families*, 9(4): 384-390.
- Fox, C., and Hawton, K. (2004). *Deliberate self-harm in adolescence*. London: Jessica Kingsley.
- Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, 14, 449-468.
- Gualdi G., Zanetti M.A. e Libro E. (2016). *Italian Gifted Adolescents: Behaviors, Risks and Resources*. International Conference ANEIS, Sobredotação: saberes consolidados e desenvolvimentos promissores, 14-16 May, pag. 19.
- Guan, K., Fox, K.R. and Prinstein, M.J. (2012). Nonsuicidal self-injury as a time-invariant predictor of adolescent suicide ideation and attempts in a diverse community sample. *J. Consult. Clin. Psychol.*, 80(5), pp. 842–849.
- Hansen, J., and Johnston Toso, S. (2007). Gifted dropouts: personality, family, social, and school factors. *Gifted Child Today*, 30 (4), 31-41.
- Heller, K.A., Perleth, Ch. and Lim, T.K. (2005). The Munich Model of Giftedness Designed to Identify and Promote Gifted Students. In Sternberg, R.J. and Davidson, J.E. (Eds.), *Conceptions of Giftedness*. New York: Cambridge University Press, pp. 172-197.
- Johnsen Susan, K., Goree, K., (2005), *Independent Study for Gifted Learners*, Prufrock Press, Inc., Waco, Texas.
- Kaufmann, F., Kalbfleisch, M., and Castellanos, F. (2000). *Attention deficit disorders and gifted students: what do we really know?* Storrs, CT: The National Research Center on the Gifted and Talented.
- Mendaglio, S. (2007). Should perfectionism be a characteristic of giftedness?. *Gifted Education International*, 23 (3), 221-232.
- Moon, S. M. & Reis, S.M. (2004). Acceleration and Twice Exceptional Students. In Colangelo, N., Assouline, S. G., & Gross, M.U.M. (Eds.). *A nation deceived: How schools hold back America's brightest students*. Volume 2. Iowa City, IA: The Connie Belin & Jacqueline N Blank Center for Gifted Education and Talent Development. pp109-119.
- Morrone C., Renati R. (2012). Dal quoziente intellettuale ai profili degli studenti ad alto potenziale, *Psicologia dell'Educazione*, VI, 3, pp. 343-356.
- Morrone C., Zanetti M. A., Gualdi G., Pelosi M. (2015). *Parenting stress and gifted children needs: a research among a sample of Italian families*. World Council for Gifted and Talented Children, 21st World Conference,

- Odense, Denmark 10 – 14 August (poster session).
- National Association for Gifted Children. (2000). *Pre-K–Grade 12 Gifted Program Standards*. Washington, DC: Author.
- National Association for Gifted Children. (2007). *NCATE teacher education standards committee: NAGC governance policy, Policy manual-8.2.2*. Washington, DC: Author.
- National Association for Gifted Children. (2010). *NAGC pre-K–grade 12 gifted programming standards: A blueprint for quality gifted education programs*. Washington, DC: Author.
- Neihart, M. (1991). *Anxiety and depression in high ability and average ability adolescents*. Unpublished doctoral dissertation, University of Northern Colorado, Greeley.
- Neihart, M. (2002). Risk and resilience in gifted children: A conceptual framework. In M. Neihart, S. M. Reis, N. M. Robinson, & S. M. Moon (Eds.), *The social and emotional development of gifted children: What do we know?* (pp. 113-122). Waco, TX: Prufrock Press, Inc.
- Neihart, M., Reis, S.M., Robinson, N.M. and Moon, S.M. (2002). *The social and emotional development of gifted children: What do we know?* Waco, TX: Prufrock Press.
- Peterson, J. S. (2008). *The essential guide for talking with gifted teens: Ready to use discussions about identity, stress, relationships, and more*. Minneapolis, MN: Free Spirit Publishing.
- Pfeiffer, S.I. (2012). *Serving the gifted: evidence based clinical and psycho-educational practice*. New York: Routledge.
- Piechowski, M. M. (1991). Emotional development and emotional giftedness. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 285–306). Needham Heights, MA: Allyn and Bacon.
- Rayneri, L. J., Gerber, B. L., & Wiley, L. P. (2006). The relationship between classroom environment and the learning style preferences of gifted middle school students and the impact on levels of performance. *Gifted Child Quarterly*, 50(2), 104-118.
- Reid, B.D., and McGuire, M.D. (1995). *Square pegs in round holes —These kids don't fit: High ability students with behavioral problems*. Storrs, CT: National Research Center for the Gifted and Talented.
- Renzulli, J. S., and Park S. (2006). Giftedness and high school dropouts: Personal, family, and school related factors. *Gifted Education Communicator*, 37 (1), pp. 46.
- Renzulli, J., and Park, S. (2002). *Giftedness and high school dropouts: personal, family, and school-related factors*. Storrs, CT: The National Research Center on the Gifted and Talented.
- Silverman, L. K. (1998). Perfectionism. *Gifted Education International*, 13(3), 216-255.
- Silverman, L. K., (2005). *The two-edged sword of compensation: How the gifted cope with learning disabilities*. Retrieved September 22, 2006, from The Gifted Development Center Web site: http://www.gifteddevelopment.com/PDF_files/Twoedged%20sword%20of%20compensation.pdf
- Silverman, L.K. (2002). *Upside-down brilliance: The visual spatial learner*.

- Denver: DeLeon Tippey e Burnham.
- Sosniak, L. A., & Gabelko, N. H. (2008). *Every child's right: Academic talent development by choice, not chance*. New York, NY: Teachers College Press.
- Stake, R.E. (2000). Case studies. *Handbook of qualitative research*. 2ed., N.K. Denzin & Yvonna S. Lincoln. Thousand Oaks, CA: SAGE Publications.
- Stanley, G., and Baines, L. (2002). Celebrating mediocrity? How schools shortchange gifted students. *Roeper Review*, 25 (1), 11.
- Sum, A., and Harrington, P. (2003). The Hidden Crisis in the High School Dropout Problems of Young Adults. (Eds.) in the US: *Recent Trends in Overall School Dropout Rates and Gender Differences in Dropout Behavior*.
- Terrassier, J.C. (1985). Dyssynchrony: Uneven Development. In Freeman, J. (Ed.), *The Psychology of Gifted Children*. Chichester: John Wiley, pp. 265-274.
- Thomas, J., & Williams, C. (2010). The history of specialized STEM schools and the formation and role of NCSSMST. *Roeper Review*, 32, 17–24.
- Tieso, C. (2005). The effects of grouping practices and curricular adjustments on achievement. *Journal for the Education of the Gifted*, 29(1), 60–89.
- Van Tassel-Baska, J. (2003). *Introduction to curriculum for gifted and talented students: A 25-year retrospective and prospective*. Corwipess, California.
- Villani, C. (1998, April). *Meeting the needs of the gifted student in language arts and mathematics: an evaluative exploration*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- Webb, J.T., & DeVries, A.R. (1993). *Training manual for facilitators of SENG model guided discussion groups for parents of talented children*. Dayton: Ohio Psychology Press.
- Willings, D. (1998). A radical approach to discovering the real self. *Roeper Review*, 20(3), 227-231.
- Winebrenner, S., and Berger, S. (1994). *Providing curriculum alternatives to motivate gifted students*. ERIC Clearinghouse.
- Zanetti M.A. (2015). *La formazione dei docenti per bambini ad alto potenziale intellettuale*, XVI National Conference IdO “il processo diagnostico nell’infanzia: cosa e come valutare clinicamente i sintomi e i comportamenti del bambino” 16-17-18 October.
- Zanetti M.A., Gualdi G. e Penna D. (2016). *La rete educa il talento: rete di scuole a supporto del potenziale*, Poster XXXIII Congresso Nazionale CNIS, Torino, 18-19 marzo
- Zanetti M.A., Renati R. (2012). Perché un focus sulla plusdotazione?, *Psicologia dell’Educazione*, VI, 2, pp. 155--161.
- Ziegler, A. and Heller, K.A. (2000). Conceptions of giftedness: A meta-theoretical perspective. In Heller, K.A., Mönks, F.J., Sternberg, R. and Subotnik, R. (Eds.), *International handbook of research and development of giftedness and talent*. Oxford, UK: Pergamon, pp. 3-22.