

Professional training of teachers for Gifted and Talented Education

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I. Introduction and Background

This document proposes a professional training program for teachers of gifted and talented students. The proposal defines gifted and talented students as individuals with high intellectual potential, composed of cognitive, effective, and personal characteristics of students as well as the learning opportunities provided to them. Learning opportunities are based on teachers' professional knowledge and skills, which allow them to adjust the instructional materials and learning settings to students' levels and needs. Correspondingly, the program proposes 6 courses aimed at the development of teachers' knowledge regarding gifted students' characteristics and teaching approaches especially appropriate for teaching the gifted.

Nevo (2009) stressed two major reasons why an organization should establish special programs for gifted children:

- 1- The first reason is to help individual gifted children maximize their capacities, increase self-esteem and happiness, and rescue them from an unchallenging environment in their "normal" class.
- 2- The second reason has to do with the welfare of others rather than that of the gifted individuals: achieving societal goals, promotion of the development of science, medicine, engineering and other important fields.

Development of special programs for the education of gifted students requires matching goals to the actions needed to achieve these goals. The programs should be sustainable and fit the needs and conditions of 21st-century life. The programs should meet international standards as well.

In what follows we describe guidelines for the development of special programs for the gifted (in line with Nevo 2009, Leikin, 2010)

Levels of excellence and giftedness

Each program needs to determine the level of achievement of the participants of the program. Most educational programs for gifted children select the upper 1–5% of the general population (Nevo, 2009). Each program can choose an idiosyncratic cut-off point for the purpose of defining giftedness. There is no "correct" cut off point because the issue is definitional in nature. The most common options are:

- Upper 0.1 percent (1 in 1,000) ("super gifted")
- Upper 1 percent (1 in 100) ("gifted")
- Upper 5 percent (1 in 20) ("excellent").

The definition of giftedness is vague and is usually reflected in the test procedures and acceptance criteria of different educational frameworks and institutions. Different

definitions and tools for the identification of giftedness are interconnected. IQ tests – starting from Binet's (1905) Intelligence test, followed by Terman's Stanford-Binet test (Terman & Merrill, 1937), and the Wechsler Intelligence Scales (Wechsler, 1991) – measure intelligence and cognitive ability. These tests are thought to predict students' general abilities. At the same time, these tests address specific abilities. Attention to specific abilities can be seen in Spearman's (1923) theory of intelligence, which introduced two types of factors: a general factor (g) requiring intelligence independent of the task, and a specific factor (s) that is unique to certain types of tasks. Later, Gardner's Multiple Intelligence theory (1983) differentiated between somewhat distinct dimensions, including verbal-linguistic, logical-mathematical, and visual-spatial intelligences.

Giftedness is also widely used in the academic community to refer to students' educational excellence, that is, to exceptional, outstanding, and rare achievements. The mapping and the conceptualization of the unique features of excellence by researchers has focused mainly on the study of two populations: the gifted and the experts. To date, studies have been population centered and advanced separately along two parallel channels, leading to the accumulation of knowledge pertinent to each population separately. For example, the outstanding performances of the gifted were attributed to their innate potential and general abilities and/or talents, while those of the experts were attributed to a lengthy, intensive period (at least a decade) of experience and knowledge acquisition in the area of expertise. Sternberg and Horvath (1998) reported at least seven common attributes:

- general high ability;
- a large body of knowledge;
- efficient organization of knowledge;
- a capacity for transforming the processes of analysis and solution into automatic ones;
- analytical thinking;
- performance capabilities; and
- creativity.

The very existence of similarities gave rise to the suggestion to integrate the two research channels under a common umbrella of excellence (Ericsson & Smith, 1991; Rabinowitz & Glaser, 1986). The introduction of a common umbrella for the study of excellence is regarded as a feasible approach for increasing the understanding of excellence as a general human phenomenon (Ericsson, Roring & Nandagopal, 2007) and, concurrently, for expanding knowledge regarding gifted populations of excellence (Hong & Milgram 2011; Rabinowitz & Glaser, 1986; Shavinina, 2007).

One of the main attributes shared by both populations of excellence, as pointed out by Sternberg and Horvath (1998), is creativity. Although creativity seems to be accepted as a unique trait of each of the excellent populations, its nature and scope are still vague (see below). The research literature addresses creativity and divergent thinking as salient and unique attributes of intellectually gifted children (high IQ) (e.g., Gagné, 2000; Ward, Saunders & Dodds, 1999).

Types of giftedness

Historically, giftedness was associated with superior academic ability or achievement, and was measured by grade point average or IQ (some intriguing new concepts

regarding IQ appear in Flynn, 2007). At the same time, specific types of giftedness have to be admitted in the educational programs. Gardner's (1983) theory of multiple intelligences implies the extension of giftedness to non-scholastic areas.

Sternberg (1991) proposed a triarchic model of giftedness involving analytic, synthetic, and practical elements, suggesting that many more people may now be considered gifted or potentially gifted. The following may be considered major types of giftedness (Nevo, 2009):

- General scholastic aptitude (IQ)
- Mathematical ability
- Arts
- Painting, sculpting
- Music
- Creative writing
- Sports

Methods of Identification of the Gifted

Renzulli's (1978, 1986, 1990) three-ring theory of giftedness is perhaps the best-known model in this field. Renzulli hypothesized that above-average ability, creativity, and motivation must coexist within an individual for giftedness to occur. In recent years, three other dimensions have been added: affective characteristics, personality traits and environmental conditions (Leikin, 2009). Usually, the choice of identification tools depends on the nature of the program for the gifted and on the previous experience of the professionals involved in the process. An identification battery may include IQ tests, special ability tests, creativity tests, personality measures (i.e., motivation, intellectual courage, curiosity, etc.). Below are some common test formats:

- Multiple choice tests
- Open-ended tests and essays
- School achievement
- Portfolio/project evaluation
- Teacher ratings
- Interview (with child/parents/teachers)
- Questionnaires.

A uniform, nationwide definition of giftedness (a "national norm") could lead to a situation where in certain localities or geographical regions, very few (or very many) gifted students will be found. It was ultimately decided to adopt a mixed policy with regard to the definition of gifted children.

Outstanding students (the top 5%) will be defined on a local basis – the outstanding students in the school or the locality. Gifted students (the top 1-2%) will be defined on a national basis.

"Super-gifted" or "extremely gifted" or "genius" children constitute a subgroup of gifted children, which numbers only a few students in the entire country who exhibit a highly rare talent. In the area of intelligence, this refers to an IQ above 155 (there are only 10-15 such students in each cohort). Super-gifted children are both different from other students and from regular gifted students. Usually their unusual abilities are self evident.

Age Range

Some educators argue that enrichment programs should start as early as possible. Others believe that psychological/neurological maturity is a pre-requisite. Studies on child prodigies support the second view. Moreover, there are no good identification devices that can be applied at a very early age. The following age periods can be found in some countries, but the 6-18 category is the most common

one.

- 2-4 years old
- 4-6 years old
- 6-18 years old.

The Format

The methods of nurturing gifted children that exist around the world can be classified according to the basic approach toward the capabilities of gifted students.

Acceleration enables students to learn and advance at an accelerated pace in any topic within the areas of their talents. Possible types of acceleration include: Early entry into school, skipping grades, compacting the curriculum, studying at a personal pace, accumulating academic credits during the course of high school studies, finishing a bachelor's degree before joining the army.

Enrichment allows gifted students to simultaneously study a larger than usual number of topics and subjects, and can therefore be nurtured by adding study subjects across the board throughout their entire course of studies. For example: studying several foreign languages, intensive study of computer applications, studying various schools of art, adding branches of specialization in sports and more. Gifted students can take courses in an extra-curricular framework and can also study in integrated frameworks.

Deepening allows gifted students to study topics in greater depth than usual. For example: Studying mathematics not only through learning formulas and applying them to specific cases, but also through understanding the set of axioms upon which they are based; studying music not only by acquiring a specific technique but also by gaining a physical and/or cultural understanding of the essence of the music.

The choice between these different forms (or a combination thereof) should be based on the nature of the specific program, the capabilities and tendencies of the gifted students taking part in it and the skills of the teachers in the program. The following are possible frameworks for education of gifted students:

- Special schools for the gifted
- Special classes (within "normal" schools)
- One-day (per week) programs
- Enrichment courses (several afternoon hours per week)
- Summer activities
- Individual tutoring

2 Innovative Methodologies in the Education of Teachers of Gifted

Main principles integrated in the proposed program

Unique pedagogical training is required for teachers who teach outstanding and gifted students. Professional development programs for the teachers of gifted include treatment of the

- ✓ Theoretical perspectives on giftedness and excellence, issues in identifying outstanding and gifted students;
- ✓ Cognitive components of excellence and giftedness;
- ✓ Non-intellective components of excellence and giftedness, issues in defining and identifying creativity;
- ✓ Learning and cognition among outstanding and gifted students;
- ✓ Models and methods of instruction and nurturing outstanding and gifted students;
- ✓ Special populations among outstanding and gifted students, and instructing outstanding and gifted students as a unique profession.

The objective of these teacher education programs is to reach a situation where each teacher who wishes to teach in the unique programs must take part in in-service training, which will grant him a certificate as a master teacher for teaching outstanding and gifted students.

In addition to the knowledge being transferred through regular courses such as the ones mentioned above, many enrichment programs for the gifted aspire to provide special content for the teaching of gifted children. The assumption of this practice is that gifted children will become future leaders in science, arts, technology, medicine, and so on. Following are some examples:

- Fostering creativity
- Developing independent thinking
- Training for team work
- Developing leadership

The program is designed for teachers and psychologists together

Participants plays an active role in the course:

- ✓ All courses integrate case studies, lectures, workshops and practical assignments
- ✓ The groups of participants will be organized into communities of practice of teachers and psychologists

Digital affordance is a core element of sustainable teacher education

- ✓ Shared space of materials – Internet platform for the participants + printed materials will be supplied
- ✓ Communication between the lecturers and the participants
- ✓

Course structure

Each course – 40h

- 7 Face-to-face meetings of 3 academic hours – 21h
 - Each meeting includes
 - Research/theoretical lecture of 30-45 minutes
 - Workshop linked to the theoretical content
 - Discussion based on practical assignment
 - Each meeting is accompanied by a clinical assignment (asynchronous education)
- 7 asynchronous meetings - 21h
 - Asynchronous meeting, requiring the teachers/psychologists to experiment in practice with theoretical foundations
 - Clinical assignments serve as the basis for the group discussion

References

- Binet, A. (1905). New methods for the diagnosis of the intellectual level of subnormals. *L'Année Psychologique*, 12, 191–244.
- Ericsson, K. A., & Smith, J. (Eds.). (1991). *Toward a general theory of expertise: Prospects and limits*. Cambridge University Press.
- Ericsson, K. A., Roring, R. W., & Nandagopal, K. (2007). Giftedness and evidence for reproducibly superior performance: An account based on the expert performance framework. *High ability studies*, 18(1), 3-56.
- Gagné, F. (2000). Understanding the complex choreography of talent development through DMGT-based analysis. *International handbook of giftedness and talent*, 2, 67-79.
- Gardner's (1983)
- Gardner, H. (2003). *Frames of mind: The theory of multiple intelligences*. New York, NY: Basic Books. (Original work published 1983)
- Hong, E., & Milgram, R. M. (2011). *Preventing talent loss*. Routledge.
- Nevo, B., & Rachmel, S. (2009). Education of gifted children: A general roadmap and the case of Israel. In *Creativity in mathematics and the education of gifted students* (pp. 243-251). Brill.
- Rabinowitz, M., & Glaser, R. (1985). *Cognitive structure and process in highly competent performance*. American Psychological Association.
- Renzulli, J. (1990). "Torturing data until they confess." An analysis of the three-ring conception of giftedness. *Journal for the Education of the Gifted*, 13, 309–321.
- Renzulli, J., & Reis, S. M. (1985). *The schoolwide enrichment model: A comprehensive plan for educational excellence*. Mansfield Center, CT: Creative Learning Press.
- Renzulli, J., Koehler, J., & Fogarty, E. (2006). "Hound tooth operation intervention theory". *Gifted child today*, 29, 15–24.
- Shavinina, 2007

- Sternberg, R. J. (1991). Giftedness according to the triarchic theory of human intelligence. In N Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 45–54). Needham Heights, MA: Allyn & Bacon.
- Tannenbaum, A. J. (1983). *Gifted children: Psychological and emotional perspectives*. New York: Macmillan.
- Sternberg, R. J., & Horvath, J. A. (1998). Cognitive conceptions of expertise and their relations to giftedness.
- Terman, L. M., & Merrill, M. A. (1937). *Measuring intelligence: A guide to the administration of the new revised Stanford–Binet tests of intelligence*. Oxford, England: Houghton Mifflin.
- Ward, T. B., Saunders, K. N., & Dodds, R. A. (1999). Creative cognition in gifted adolescents. *Roepers Review*, 21(4), 260-266.
- Wechsler, D. (1991). *Manual for the Wechsler Intelligence Scales for Children* (3rd ed.). San Antonio, TX: Psychological Corporation.

3 COURSES

Course I Conceptions of intelligence and giftedness

Lecturer Dr. Inbal Shani

No of hours Synchronous – 21h Asynchronous
 – practical and clinical assignments - 21h

Main Goals Although the term 'intelligence' is widely used in different contexts, there has long been controversy about the nature of intelligence, its components and the course of intellectual development across the human lifespan. This course is designed to introduce participants to the main theories and paradigms of intelligence and giftedness and the development of intelligence testing tools.

Preliminary Program

(suitable for participants with preliminary proficiency and knowledge in the field)

Meeting No.	Topic	Main parts and components
1	Intelligence: definitions and theories	<u>Lecture:</u> What is intelligence? Development of Intelligence theories – Spearman, Cattell, Gardner, Sternberg <u>Activity:</u> Solving different types of tasks and thinking games and examining the different cognitive abilities used for each task Examining different contexts in which the term 'intelligence' is used
1a	Asynchronous Lesson	Comparison of the different intelligence theories using case studies Analysis of the cognitive tasks using intelligence theories

Meeting No.	Topic	Main parts and components
2	Intelligence definitions and theories	<p><u>Lecture:</u></p> <p>Genetics vs. environment</p> <p>Gender differences</p> <p>Do animals have intelligence? Intelligence as a human phenomenon.</p> <p>Intelligence curve and the stability of intelligence across the lifespan</p> <p><u>Activity:</u></p> <p>Group discussion of recent research focusing on intelligence issues</p>
2a	Asynchronous Lesson	Interviews with parents regarding early signs of giftedness and the manifestations of giftedness in everyday life
3	Definitions and models of giftedness	<p><u>Lecture:</u></p> <p>Early signs of giftedness</p> <p>Research-based definitions of giftedness</p> <p>Timeline of giftedness definitions</p> <p><u>Activity:</u></p> <p>Watching parts of movies presenting giftedness from different points of view and analysis of the main characteristics of giftedness</p>
3a	Asynchronous Lesson	From intelligence to giftedness - Formulating the crucial components of a giftedness model based on field work
4	Definitions and models of giftedness	<p><u>Lecture:</u></p> <p>Models of giftedness – Terman, Tennenbaum, Renzulli</p> <p>New approaches to giftedness: From transactional gifted to transformational gifted (Sternberg)</p> <p><u>Activity:</u></p> <p>Analysis of case studies using the different models of giftedness</p>
4a	Asynchronous Lesson	Examination of gifted education goals in terms of the different views on giftedness

Meeting No.	Topic	Main parts and components
5	IQ and intelligence measures	<p><u>Lecture:</u></p> <p>Definition of IQ</p> <p>Development of intelligence scale (Stanford-Binet, Wechsler, Woodcock-Johnson)</p> <p>Identification process of giftedness in different countries</p> <p>Common biases in intelligence tests</p> <p><u>Activity</u></p> <p>Critical thinking on intelligence tests</p> <p>Analysis of diagnostic reports of gifted children using IQ measures</p>
5a	Asynchronous Lesson	Design of test components for identification of giftedness in different ages
6	Cognitive and Neuro-cognitive aspects of giftedness	<p><u>Lecture:</u></p> <p>Basic cognitive traits associated with giftedness and excellence.</p> <p>Giftedness vs. Excellence</p> <p>Neural plasticity and Neural efficiency</p> <p><u>Activity:</u></p> <p>Analysis of research tools used in neurocognitive studies</p>
6a	Asynchronous Lesson	Administration of cognitive test in a class of gifted and in a class of excelling students. Test analysis.
7	Intelligence and motivation	<p>Intelligence and achievement</p> <p>Learning goals vs. ability goals</p> <p>Factors related to underachievement among the gifted</p> <p>'Don't tell them they are smart' - The impact of praise and compliments on motivation and goals</p> <p><u>Activity:</u></p> <p>Watching and analyzing different experiments designed to test motivation and achievement goals among children</p>
7a	Asynchronous Lesson	Applying motivation experiments with a sample of children

Course 2: Beyond IQ: Socio-emotional characteristics of the gifted and talented

Lecturer Dr. Inbal Shani

No of hours Synchronous – 21h Asynchronous
– practical and clinical assignments - 21h

Main Goals Although giftedness is typically identified using cognitive ability scales, there is a growing body of research focusing on broader characteristics of giftedness as well the socio-emotional needs of gifted children and adolescents. This course is designed to address the main socio-emotional issues of giftedness based on recent research and field work.

Preliminary Program

(suitable for participants with preliminary proficiency and knowledge in the field)

No of meeting	Topic	Main parts and components
1	Psychological characteristics of gifted children	<p><u>Lecture:</u> Asynchronous development Dabrowski's theory of overexcitability; Misdiagnosis of gifted as ADHD, Bipolar, OCD, Asperger's syndrome Autonomous thinking and moral reasoning</p> <p><u>Activity:</u> An examination of a short story ("Baby Genius") and discussion of the needs of the gifted child. Discussion of stereotypes and perceptions of giftedness by teachers, parents, society.</p>
1a	Asynchronous Lesson	<p>Observation in class on the characteristics discussed in class and writing a description report.</p> <p>Data collection on self perception of giftedness: "I am" questionnaire (each participant will collect the data from 4 pupils in different ages)</p>

No of meeting	Topic	Main parts and components
2	Psychological characteristics of gifted children	<p><u>Lecture:</u></p> <p>Self-concept and personality traits (the Big Five model)</p> <p>Emotional intelligence among gifted secondary school students</p> <p><u>Activity:</u></p> <p>Analysis of the data collected from "I am" questionnaire, according to self-concept dimensions</p>
2a	Asynchronous Lesson	Analysis of different feedback given by teachers, and relating it to the development of self-concept of the child
3	Gifted adolescents	<p><u>Lecture:</u></p> <p>Challenges of adolescence</p> <p>Identity formation process in adolescence (Erikson)</p> <p>Career choices</p> <p><u>Activity:</u></p> <p>Qualitative theme analysis: Examinations in groups of themes emerging from interviews with gifted vs. non-gifted adolescents</p>
3a	Asynchronous Lesson	Semi structured interviews with pupils ("Ego Identity" interview) – each participant will interview two pupils.
4	The complexity of fulfilling potential	<p>Expectations, anxiety, depression and perfectionism</p> <p>Asset-burden model of giftedness</p> <p>Suicidal factors of gifted youth</p> <p>Multi-potentiality</p> <p>Existential approach to potential and giftedness</p> <p><u>Activity:</u></p> <p>Theme Analysis in groups of the interviews collected in previous lesson</p>
4a	Asynchronous Lesson	<p>Online forum discussion of recent literature and a case study</p> <p>Online forum discussion about a case study presented in a Ted Talk of the multi-potentiality experience.</p>

No of meeting	Topic	Main parts and components
5	Twice exceptional gifted: Gifted students with special needs	<p><u>Lecture:</u> Difficulties in identification of the twice exceptional Three categories of identification and nurturing of twice exceptional children. Special needs: ADHD, Autism, learning disabilities, LGBTQ</p> <p><u>Activity:</u> Watching a part of a movie related to the topic and group discussion. Group work on different types of twice exceptional children.</p>
5a	Asynchronous Lesson	Guided reading of recent literature on this topic and examination of case studies related to the different types of twice exceptional
6	Gifted girls	<p><u>Lecture:</u> Social and emotional issues faced by gifted girls Career-family conflict for gifted women</p> <p><u>Activity:</u> Group discussion of interviews with gifted girls focusing on the special needs of gifted girls. Designing a format for observation and interview of gifted girls using research paradigms.</p>
6a	Asynchronous Lesson	<p>Observations of gifted girls in class and writing a description report</p> <p>Structured interview with a girl and a boy from the gifted center regarding views of gifted girls' experience</p>
7	Gifted adults	<p><u>Lecture:</u> Longitudinal studies Transformational vs. transactional giftedness (Sternberg) Measures of potential fulfillment</p> <p><u>Activity:</u> Discussion of a Ted Talk focusing on the retrospective views of gifted adults. Brainstorming and critical thinking on potential fulfillment in different societies.</p>

No of meeting	Topic	Main parts and components
7a	Asynchronous Lesson	Design research questions and measures for gifted adults Forum discussion on goals for nurturing the gifted according to the prospective view of giftedness

No of meeting	Topic	Main parts and components
3a	Concept teaching and teaching through dilemmas and debates	<p><u>Part I - lecture + activity:</u> Different pedagogies for concepts teaching. After each presented pedagogy, the participants will practice it (a concept map, using Wikipedia entries, etc.)</p> <p><u>Part II - lecture + activity:</u> teaching through dilemma discussions and debate.</p>
3b	Asynchronous Lesson	Preparing a lesson using one of the learned methods
4a	Project-based learning	<p><u>Activity:</u> Analyzing several examples of projects</p> <p><u>Activity:</u> Watching a video and discussion in groups about the distinction between project-based learning and a project which summarizes the learning.</p> <p><u>Lecture:</u> The main principles for initiating and planning PBL and the main principles for its success (such as multiple drafts and proper feedback methods)</p>
4b	Asynchronous Lesson	Initial project planning according to the 8 presented model principles
5a	Phenomena based learning and thinking communities	<p><u>Activity:</u> Inventing "fertile questions" based on photographs from <u>Time magazine</u>.</p> <p>A. Individual work - questions about the photographs</p> <p>B. In pairs - sorting the questions</p> <p>C. In groups of four - choosing three "good questions" of each type and reformulating them so that they become fertile.</p> <p><u>Lecture:</u> Understanding the principles of phenomenon-based learning and the course of "Thinking community" from the stage of the fertile question to the project.</p>
5b	Asynchronous Lesson	Formulating a productive question and planning the required concluding performance.

No of meeting	Topic	Main parts and components
6a	Interdisciplinary teaching	<p><u>Group activity:</u> Think about an interdisciplinary activity familiar to you: which subject matters are involved? Why? What was the essence of the relationship between the different subject matters?</p> <p><u>Lecture:</u> planning inter- or multi-disciplinary studies - goals and examples for different types of teaching involving different subject matters; The importance of familiarizing the students with different learning processes in which different logical relationships exist between the subject matters.</p>
6b	Asynchronous Lesson	In groups - initial planning of an interdisciplinary study unit, while explaining the logical relationship between the involved subject matters.
7a	Feedback and assessment in gifted classes	<p><u>Activity:</u> discussion in groups about case studies</p> <p><u>Lecture:</u> How feedback promotes and shapes learning; The importance of learning from mistakes and the class atmosphere needed to promote this.</p>
7b	Asynchronous Lesson	Discuss a case description related to grades or evaluation and its analysis following the lesson.

Course 4: Principals and Models to gifted education

Lecturer **Dr. Daphna Haran**

No of hours Synchronous – 21h Asynchronous
 – practical and clinical assignments - 21h

Main Goals Gifted students have unique pedagogical needs. We will get to know these needs as well as teaching models and strategies suitable for cultivating curiosity, active learning and high order thinking.

Preliminary Program

(suitable for participants with preliminary proficiency and knowledge in the field)

No of meeting	Topic	Main parts and components
1a	Characteristics and needs of gifted and outstanding students in the educational context and our goals	<u>Activity</u> – After watching the video "Above & Beyond"- discussion of the teacher's goals and the characteristics and needs of the students Charli and Maya <u>Lecture</u> - Characteristics of gifted students and their needs in the school environment <u>Activity</u> - Filling in groups of an empty comparison table - characteristics of gifted and outstanding students <u>Lecture</u> – Present the Chabos comparison table of characteristics of gifted vs. outstanding; The implications for the required teaching processes
1b	Asynchronous Lesson	Identifying a gifted and outstanding student - an interview with one of them regarding what they need from the school and their requests from their teachers.

No of meeting	Topic	Main parts and components
2a	Differentiation between gifted students in the context of learning and achievements	<p><u>Short lecture</u> - Diversity in the gifted class and introducing the six types of gifted learners (Neihart & Bates, 1988)</p> <p><u>Activity in groups</u> - Each group receives a type and learns its characteristics; Each group presents the type in front of the class.</p> <p><u>Short lecture</u> - The expression of each type in the classroom, and the importance of reacting appropriately to each of the types.</p> <p><u>Activity in groups</u> - Discussion of prepared case studies</p>
2b	Asynchronous Lesson	Analysis of a student from the center according to one of the types; Writing recommendations for his teachers and parents.
3a	Guiding principles for effective programs for the gifted	<p><u>Activity:</u> Each participant will list 3 guiding principles</p> <p><u>Short lecture:</u> The guiding principles</p> <p><u>Activity:</u> Several written approaches will be presented in three corners of the classroom: The acceleration approach; The deepening and enrichment approach; The differential approach. Each participant will stand next to the appropriate approach to the gifted in his opinion and will justify his choice. Each group will write a speech defending its position</p> <p><u>Lecture:</u> Characteristics and reasoning of each approach and ways of implementing them in class</p>
3b	Asynchronous Lesson	Planning a lesson according to one of the approaches and explaining why the approach is suitable for the students and the topic
4a	Curriculum Differentiation for the Gifted – Maker and Renzulli's models	<p><u>Lecture:</u> Maker's model of differentiated curriculum and Renzulli's Schoolwide Enrichment Model, including examples.</p> <p><u>Activity</u> - Implementing Maker's model</p> <p><u>Lecture</u> - Presentation of Renzulli's model</p> <p><u>Activity</u> - Implementing Renzulli's model</p>

No of meeting	Topic	Main parts and components
4b	Asynchronous Lesson	Planning a lesson according to one of the models presented in the lesson
5a	Cultivating high order thinking	<p><u>Activity:</u> Watching and analyzing Sugata Mitra's Ted Talk; Discuss the meaning of "meaningful learning."</p> <p><u>Lecture:</u> The essence of meaningful learning (the Transfer approach vs. the Participation approach); Thinking and learning and the ways in which skills, strategies, processes and thinking tendencies are developed.</p> <p><u>Activity:</u> Group discussion about the extent to which we should make it difficult and challenging for our gifted students; The importance of learning from failures and mistakes; "optimal frustration".</p>
T	Asynchronous Lesson	Planning an activity designed to cultivate high order thinking strategies including a planned "optimal frustration".
6a	Lesson planning	<p><u>Activity:</u> Each group will watch one video from "Teach like a Champion" and analyze the observed main topic. The components of a suitable lesson for the gifted will be discussed and the groups will build a Classroom Observation Scale.</p> <p><u>Lecture:</u> Characteristics of the appropriate lesson for the gifted - introduction to part A of the Classroom Observation Scale model.</p> <p><u>Activity:</u> Discussion in groups - components of the model</p> <p><u>Lecture:</u> The second part of the model – categorization of asked questions and the related elements (such as number of participants; wait time and types of questions)</p>
6b	Asynchronous Lesson	The participants will teach a lesson or watch a lesson of another teacher, and analyze it according to the model. After the analysis, they will write ideas for improving the lesson to better suit the gifted students.

No of meeting	Topic	Main parts and components
7a	Psycho-pedagogy in the gifted class; Assessment and grades	<p><u>Lecture:</u> The importance of social-emotional class discourse; The initiation of emotional discourse during the lesson and the importance of creating situations in which students will challenge and practice their emotional, interpersonal and social abilities. The importance of using formative (and not only summative) assessment.</p> <p><u>Activity:</u> Brainstorming about grades in the gifted class, taking into account the burden of expectations, through discussion of case studies</p>
7b	Asynchronous Lesson	Planning a lesson which provokes an emotional discourse or reference to the cultivation of social skills in the class.

Course 5: Broad contexts of giftedness: Gifted children in Family, Classroom and Therapy

Lecturer Dr. Daphna Haran and Dr. Inbal Shani

No of hours Synchronous – 21h Asynchronous – practical and clinical assignments - 21h

Main Goals The gifted child engages in interactions in different circles of life - in class, at school and in the family. We will discuss the aspects of giftedness which are evident in the various circles and the best way to intervene for the gifted child's sake.

Preliminary Program

(suitable for participants with preliminary proficiency and knowledge in the field)

No of meeting	Topic	Main parts and components
1a	Labeling and social development	<p><u>Activity:</u> Watching the video "The Abnormal Egg" and discussion</p> <p><u>Lecture:</u> The effects of being labeled as gifted</p> <p><u>Activity:</u> The participants will discuss case studies concerning the difficulties and challenges of the gifted in the regular classroom</p> <p><u>Lecture:</u> Being gifted in the regular classroom - social integration; Social self-concept; How to provide a pedagogical response to the needs of the gifted in the regular classroom.</p>
1b	Asynchronous Lesson	Interviews with children regarding their labelling as gifted – in their own view regarding the different contexts they participate in and in the view of their family and peers.

No of meeting	Topic	Main parts and components
2a	Class atmosphere- Part A	<u>Lecture combined with activity</u> around case studies on various aspects of a class atmosphere arising from characteristics of the gifted: Competition vs. cooperation; Collaboration / group work vs. individualism; Discussion culture; Cultivating emotional discourse during lessons.
2b	Asynchronous Lesson	Analyzing case studies of each teacher in relation to his/her class and implementing taught approaches and methods.
3a	The appropriate teacher for the gifted	<u>Activity:</u> thinking in groups about qualities that characterize gifted teachers <u>Lecture:</u> The appropriate teacher - review of studies and the dual glasses model
3b	Asynchronous Lesson	Each teacher will analyze himself or his colleague, in three aspects of the dual glasses model
4a	The gifted child in the family	Parents of gifted children: characteristics and challenges Parents' consultation Family vs. school expectations <u>Activity:</u> Group work - mapping the differentiated needs of parents of gifted children and the ways to address these needs
4b	Asynchronous Lesson	Interviews with parents regarding their challenges in the family

No of meeting	Topic	Main parts and components
5a	Having a gifted sibling	<p>Challenges of having a gifted sibling (families with one gifted sibling vs. families with a few gifted siblings)</p> <p>The effect of birth order</p> <p>Processes of comparison in the family setting (research-based discussion)</p> <p><u>Activity:</u></p> <p>Group work focusing on designing an interview suitable for understanding the experience of siblings in the family context</p>
5b	Asynchronous Lesson	Interviews with gifted children in the context of their sibling relationships
6a	Therapy practices	<p>Why gifted children need specialized psychologists</p> <p>Challenges in therapy</p> <p>ACT therapy and psychological flexibility</p> <p><u>Activity:</u></p> <p>Analysis of case studies of therapy</p>
6b	Asynchronous Lesson	Analysis of an example of using 'escape room' in group therapy with gifted children
7a	Class atmosphere- Part B	<u>Lecture combined with activity</u> around case studies on various aspects of a class atmosphere arising from characteristics of the gifted: learning together and learning from mistakes; Facing difficult Tasks; Competitiveness and attitude toward grades.
7b	Asynchronous Lesson	Analyzing case studies of each teacher in relation to his/her class and implementing taught approaches and methods.

Course 6: 21st century skills, Creativity and Giftedness

Lecturer Prof. Roza Leikin and Dr. Shelly Rota

No of hours Synchronous – 21h Asynchronous
– practical and clinical assignments - 21h

Main Goals There is a clear link between creativity and giftedness in talented adults when it comes to invention and innovation. Creativity has more than 100 definitions in the research literature. Participants in this course will be introduced to several approaches to the identification and development of creativity. Connections between 21st century skills (critical thinking, social flexibility and cooperation and creativity-directed activities) are integrated.

Preliminary Program

(suitable for participants with preliminary proficiency and knowledge in the field)

No of meeting	Topic	Main parts and components
1a	Different approaches to defining creativity	<u>Lecture:</u> Approaches to defining creativity: Openness and insight, 4P approach, Big ideas approach <u>Activity:</u> Multiple uses test
1b	Asynchronous Lesson	Flexible thinking - Testing gifted students and regular students with multiple uses test
2a	Task Design for fostering creative thinking	<u>Lecture:</u> Tasks in the context of the 4P approach.
2b	Asynchronous Lesson	Task design

No of meeting	Topic	Main parts and components
3a	Creativity and new knowledge	<u>Lecture:</u> Creativity associated with solving unconventional tasks. <u>Activity:</u> Interviewing a peer.
3b	Asynchronous Lesson	Interviewing students with unconventional tasks from different subject matter areas
4a	Cooperative creativity	<u>Lecture:</u> Cooperative learning methods Fostering creativity through cooperation and competition <u>Activity:</u> Cooperative competition with creativity tasks
4b	Asynchronous Lesson	Designing and implementing cooperative competition for students
5a	Creativity and critical thinking	<u>Lecture:</u> Components of critical thinking. Is there creativity without critical thinking? <u>Activity:</u> Critical Thinking Test: Discussion
5b	Asynchronous Lesson	Stories about critical thinking of gifted students
6a	Evaluation of creativity with Multiple solution tasks	<u>Lecture & Activity:</u> Workshop: Types of Multiple Solution Tasks (MSTs)
6b	Asynchronous Lesson	Designing MSTs
7a	Openness and insight	<u>Lecture:</u> Challenging gifted students with Insight allowing problems and insight requiring problems. <u>Activity</u> Task analysis
7b	Asynchronous Lesson	Conducting and analyzing tests in classes with different levels of abilities

4. The list of recommended literature

Books

- Gagné, F. (2020). *Differentiating Giftedness from Talent: The DMGT Perspective on Talent Development*. Routledge.
- Gardner, H. (1983/2003). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- Heller, K. A., Mönks, F. J., Subotnik, R., & Sternberg, R. J. (Eds.). (2000). *International handbook of giftedness and talent*.
- Maker, C. J. (1975). *Training teachers for the gifted and talented: A comparison of models*. Reston, VA: The council for exceptional children.
- McPherson, G. E., & Williamon, A. (2006). *Giftedness and talent*. Oxford University Press.
- Robinson, A., Shore, B. M., & Enersen, D. L. (2021). *Best practices in gifted education: An evidence-based guide*. Routledge.
- Sternberg, R. J., & Ambrose, D. (Eds.). (2021). *Conceptions of giftedness and talent*. London, UK: Palgrave Macmillan.
- Subotnik, R. F., P. Olszewski-Kubilius, and F. C. Worrell (Eds.) (2019). *The psychology of high performance: Developing human potential into domain-specific talent*. American Psychological Association
- Wallace, B., Senior, J., & Sisk, D. (2018). *The SAGE Handbook of Gifted and Talented Education*.

Journals

- *Gifted Child Quarterly*
- *High Ability Studies*
- *Creativity Research Journal*
- *Gifted and Talented International*
- *Gifted Education Press Quarterly*
- *Journal for the Education of the Gifted*

Papers

- Adams-Byers, J., Whitsell, S. S., & Moon, S. M. (2004). Gifted students' perceptions of the academic and social/emotional effects of homogeneous and heterogeneous grouping. *Gifted Child Quarterly*, 48(1), 7-20.
- Binet, A. (1984). *Les idées modernes sur les enfants*. Paris: Flammarion. (Published in English as *modern ideas about children*. Menlo Park: CA: Suzanne Heisler, 1984.)
- Chan, S., & Yuen, M. (2014). Creativity beliefs, creative personality and creativity-fostering practices of gifted education teachers and regular class teachers in Hong Kong. *Thinking Skills and Creativity*, 14, 109-118.

- Dai, D. Y., & Chen, F. (2013). Three paradigms of gifted education in search of conceptual clarity in research and practice. *Gifted Child Quarterly*, 57(3),151-168.
- Deary, I. J. (2000). *Looking down on human intelligence: From psychometrics to the brain* (Vol. 34). Oxford University Press.
- Gagné, F. (2004). Transforming gifts into talents: the DMGT as a developmental theory, *High Ability Studies*, 15(2), 119-147
- Grace A. Schlosser (2001). Stories of Success from Eminent Finnish Women: A narrative study, *High Ability Studies*, 12(1), 61-87.
- Hansen, J. B. & Feldhusen J. F. (1994). Comparison of Trained and Untrained Teachers of Gifted Students. *Gifted Child Quarterly*, 38, 115-121
- Jausovec, N., & Jausovec, K. (2000). Correlations between ERP parameters and intelligence: A reconsideration. *Biological Psychology*, 55(2), 137-154.
- Johnson, J., Im-Bolter, N., & Pascual-Leone, J. (2003). Development of mental attention in gifted and mainstream children: The role of mental capacity, inhibition, and speed of processing. *Child development*, 74(6), 1594-1614.
- Johnson, W., & Bouchard, T. J. (2005). The structure of human intelligence: It is verbal, perceptual, and image rotation (VPR), not fluid and crystallized. *Intelligence*, 33(4), 393-416.
- Kesner, J. E. (2005). Gifted Children's Relationships with Teachers. *International Education Journal*, 6(2), 218-223.
- Lubinski, D. & Benbow, C. P. (2006). Study of Mathematically Precocious Youth after 35 years: Uncovering antecedents for the development of math-science expertise. *Perspectives on Psychological Science*, 1, 316 – 345.
- Meyer, M. L., Salimpoor, V. N., Wu, S. S., Geary, D. C., & Menon, V. (2010). Differential contribution of specific working memory components to mathematics achievement in 2nd and 3rd graders. *Learning and Individual Differences*, 20(2), 101-109.
- Mills, C. J. (2003). Characteristics of Effective Teachers of Gifted Students: Teacher Background and Personality Styles of Students. *Gifted Child Quarterly*, 47, 272-281
- Neubauer, A. C., & Fink, A. (2009). Intelligence and neural efficiency. *Neuroscience and Biobehavioral Reviews*, 33(7), 1004-1023.
- O'Boyle, M. W. (2005). Some current findings on brain characteristics of the mathematically gifted adolescent. *International Educational Journal*, 6(2), 247-251.
- Parker, W. D., & Mills, C. J. (1996). The incidence of perfectionism in gifted students. *Gifted Child Quarterly*, 40(4), 194-199.
- 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.

- Renzulli, J. S., & Renzulli, S. R. (2010). The schoolwide enrichment model: A focus on student strengths and interests. *Gifted Education International*, 26(2-3), 140-156.
- Runco, M. A. & Acar, S. (2012). Divergent Thinking as an Indicator of Creative Potential, *Creativity Research Journal*, 24(1), 66-75.
- Shani-Zinovich, I. & Zeidner, M. (2009). On being a gifted adolescent: developmental, affective, and social issues. In R. Leikin, A. Berman, and B. Koichu (eds.), *Creativity in Mathematics and the Education of Gifted Students*. (pp. 195–219). Sense Publishers.
- Silverman, L.K. (2009).The measurement of giftedness. In L. V. Shavinina (Ed.), *International Handbook on Giftedness* (pp. 947-970). Amsterdam, the Netherlands: Springer.
- Spearman, C. (1923). Further note on the "theory of two factors." *British Journal of Psychology*, 13, 266–270.
- Stanley, J. C., George, W. C. & Cohn, S. J. (1979). *Educating the Gifted: Acceleration and Enrichment*. Baltimore, MD: Johns Hopkins University Press.
- Steiner, H. H., & Carr, M. (2003). Cognitive development in gifted children: Toward a more precise understanding of emerging differences in intelligence. *Educational Psychology Review*, 15(3), 215-246.
- Sternberg, R. (2006). The Nature of Creativity, *Creativity Research Journal*, 18(1), 87-98.
- Stoeger, H., Balestrini, D. P., & Ziegler, A. (2018). International perspectives and trends in research on giftedness and talent development.
- Terman, L. M., & Merrill, M. A. (1937). Measuring intelligence: A guide to the administration of the new revised Stanford-Binet tests of intelligence.
- VanTassel-Baska, J., & Brown, E. F. (2007). Toward Best Practice An Analysis of the Efficacy of Curriculum Models in Gifted Education. *Gifted Child Quarterly*, 51(4), 342-358.
- Wallas, G. (1926). *The art of thought*. New York: Harcourt, Brace.
- Wechsler, D. (1991). *Manual for the Wechsler Intelligence Scales for Children* (3rd ed.), (WISC III). San Antonio, TX: Psychological Corporation.
- Weisberg, R. W. (2015) On the Usefulness of "Value" in the Definition of creativity. *Creativity research journal*, 27(2), 111–124.
- Ziegler, A. & Raul, T. (2000). Myth and Reality: A review of empirical studies on giftedness. *High Ability Studies*, 11(2), 113-136