

"ALEXANDRU IOAN CUZA"UNIVERSITY

FACULTY OF EDUCATION SCIENCE AND PSYCHOLOGY

**The influence of
constructive teaching on
achievements students in high school**

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Structure of the thesis:

Introduction, Six- Chapters, conclusion and reference, –bibliography 121-sources, 6 appendixes, 158 pages of text, 9 tables, key words: specialize in constructivism, constructivist teaching, significant learning, dialogue, cooperative learning, from the whole to the part, gaining active experience, negotiations.

Study field: The study was carried out in Kaabiya High School in 10th and 11th grades, Bosmat Tivon High School served as a control, the experiment was held in Kaabiya High School in which we implemented four principles of a constructivist teaching method, on the other hand in the control school they taught in a frontal teaching method, the students in the experiment school passed a contents examination and filled in questionnaires, in the control school they only filled in questionnaires, in this study there was mainly use of a quantitative research method.

The goal of the study: to improve the students' achievements in the various subjects (in this study in the field of sciences) under the assumption that the students learn in a frontal teaching method, in which they are required to memorize the study material and mostly they find difficulty in the learning process, therefore this study comes in order to examine the connection between constructivist learning and students' achievements, and according to the results to increase the use of this teaching method.

Actually research : The study goals: this is a study which was designed to investigate significant teaching which obtains significant learning, it is considered in our days as a hit, as the teachers did not give up the use of an ancient frontal teaching method.

Constructivist teaching is considered as the hope of the future and it is capable of causing a revolution in the perception of the teachers and students of the learning process.

The meaning of the theory is: use of active teaching in which the student is active and gains experience in learning, it advances the process of connecting new knowledge with old knowledge, and causes profound understanding of the study contents.

The meaning of the study from a practical point of view and use of the results: the results of the study showed a significant connection between students' achievements and a constructivist teaching method and also change in the perception of the teachers and students of the learning process, and this can cause a revolution in teaching and learning, from a practical point of view it is possible to expect that over time in the implementation of this method, that the students will reduce the time that they "hold a pen", in order for them to write what the teacher says until a minimum, and the teachers will start quickly to feel satisfaction in lesson time as the students

work on their tasks, and they are required less and less to intervene and the result is a new role of teachers as guides.

At a national level :the use of this teaching method, is capable of saving time in government expenses on teaching as correct teaching in which the student is active according to the significant teaching method helps him to understand the material well, and thus after time there will be fewer and fewer students who will find difficulty in understanding the study materials in all the subjects and especially in the field of sciences.

Following the increase of the students' difficulties in Israel and in the world in understanding the study contents and their low achievements, we have been witnesses in the last two decades to a constant attempt on the part of those leading in the field of education to promote learning with the goal of raising the students achievements. As it is known the traditional way practiced for change of achievements is allocation of further resources in education and the result is more hours of traditional teaching. This intervention indeed supplies more school hours and it is reasonable to suppose that there will be a small rise in students' achievements, but there is still no treatment of the central problem. As it is known in a frontal lesson, the teacher stands in most of the lessons before his students and delivers knowledge to them, whereas his students are requested to sit and listen, without their being partners in the learning process. Indeed in this way they can recall by memorization items of information which are not connected to the knowledge existing in their brain, but the lifespan of this knowledge is short as it was not rooted by linkage to the existing knowledge

Apart from this, the students got used to holding a pen, in order to write down every piece of information which the teacher delivers. Perpetuation of this method means perpetuation of the passivity of the students, and

hardening the role of the teacher who needs to continue to hold the source of knowledge and be "the conductor of the chorus" and the result is more memorization and less comprehension and analysis in the contents under these circumstances. I decided in 2010 to investigate this subject in order to turn the job of teacher into an instructor of learners, and to change the conception of the learning process with students "from holders of pens" to holders of knowledge and learning skills, whilst the quantities of knowledge are only being piled up.

The word construct: it means structuring knowledge, it originated in the constructivism from the constructivist movement which emerged in Russia after the communist revolution which occurred in the years 1917-1925 and identified with the ideology of revolution, the artists declared then that they strove for "communist expression of material structures", and that the basis for their world was "scientific communism", the constructivist artists strove to create a new art with the help of plastic art and architecture so that it would suit the needs and ambitions of society, therefore the ruling opinion was that the artist must know the materials which he uses from close, and even learn about their traits in personal experience in order for them to know how to use them. This reference to art as produce and to the artist as a worker, derives from the convention, which prevailed in the communist world, that right to existence is only for somebody who works and produces material things.

Constructivism is an overall name of a philosophical, pedagogic sociological, linguistic and methodological approach. A common denominator of all these approaches is that knowledge is built and is not transferred or develops, there is no doubt that a very inclusive argument is concerned here which is explained and interpreted in many ways. Constructivism is considered as a very fluid mixture of theories and ideologies- Harpaz (2000) in Hadas, N. (1996), therefore it is impossible to derive one teaching strategy from the constructivist approach, despite what was said.

It is important for constructivism to take an interest in faulty conceptions of students and describe their thinking methods, likewise it is important for them to know that Piaget is considered as part of the constructivist heritage.

The psychological stream is considered as having the biggest meaning in the field of teaching and learning, constructivism deals with the question how students learn, an answer to this question is found in the assumption that knowledge is not delivered or develops but is built in the consciousness of the learner with the help of concepts and patterns which are found in his consciousness, this approach is found to be in total contrast to the behaviorist approach which sees in the learner as somebody absorbing stimuli and reacting.

It is important to note that Piaget is considered as the greatest founder of this approach, he used at the time a vocabulary when only a few words from his vocabulary sound like useful words in the modern constructivist approach, constructivism deals with learning and not with teaching, the argument of constructivism is that knowledge is not transferred but is built by patterns opposed to the conception of the teacher as a conveyor. Harpaz (2008) in Hadas, N. (1996), dealt with this conflict and said "that anyone who thinks that the learner is like a blank page and learning takes place by one side who transmits and another side which absorbs, 'is sick in his sick mind' ", he offers to change the conception, that only one side transmits and claims that both sides need to be active and the side which is considered as absorbing does not absorb but builds the knowledge.

According to Dr. **Carmela Neshor, Dewey compared (1906)** the learning process to food which is stored in a refrigerator, which one only stores and is not capable of preparing savories from it, this is what happens in the learning process when the teacher delivers material to the student and it is not connected to the existing knowledge, as he does not know what it is possible to do with it. The knowledge stays in his memory for a short period and is forgotten, accordingly the correct conception is that the head of the student is not suitable to be "an empty refrigerator which the teacher needs to fill", but the teachers must be a guide and instructor in order for the student to be able to use the knowledge he acquired, and if we will return to the comparison which Dewey made so this means to prepare "savories from the food in the refrigerator", as otherwise there is no more point in our days in storing much knowledge, as it anyway is stored in huge quantities and the

seeker of knowledge will only need to click on the search engine on the internet.

According to what was said above the interest of teaching in our days is not any more in what the teacher prepares, but in what the teacher causes the student to do.

(Parkins, 1992, within Carmela Neshet). Therefore the magic words according to this approach are instruction of the teacher and activeness of the student, and in order for the student to be active and self-satisfied the teacher needs to know the characteristics of his students, and not to treat them equally, as heterogeneous classes are concerned which place pedagogic challenges before the teacher in everything connected to management of a class. Therefore there is no escape from considering the various starting points of his students in everything connected to differences in levels of thinking, in positions and values, various knowledge bases, learning style, personal preferences, talents etc., and to moderate his teaching method according to these characteristics. Hadas, N. (1996),

difference between the constructivist and frontal teaching method The authors describe the forms of technology and the components of hardware and software which are necessary in the classroom in order to practice the activities which the book contains. They also describe the study process, the function of the teacher and student, and methods of assessment of the learning process. Thus, the internet can be used to enable students to construct sophisticated knowledge bases. It promotes exploration and students can access rare information on the internet, generate and construct information by creating and designing internet sites, and deliver and transfer knowledge by means of the internet. These activities which use the instrument of the internet take advantage of all five traits of meaningful learning. The internet can be used as a learning instrument which enables students to construct knowledge and create learning communities. The participatory characteristic is the most prominent characteristic in this aspect of the new constructivist theory. The students are induced to participate by themselves in the lesson and be active in it.

Video is one of the instruments used as a technology in order to enhance constructivist learning. Whereas in the frontal traditional method, film and video are used only when the students are to digest information. Thus this practice must involve the students being active, constructive, intentional and cooperative. This creation can involve newsrooms, talk shows, documentaries, theater and video conferencing. Also, as technology is the instrument and constructivist learning the methodology, assessment of the learning occurs not after the study has taken place but simultaneously with it. Rubrics can be used to assess learning.

Technology does not instruct students, students only learn when they build the knowledge and gain conception through experience. Also, understanding is not created by means of absorption of the words of a teacher or technological tool, but through students' active interface with a teacher or technological tool.

Thus the authors claim that educational reform and change should be implemented, and post-modernist cognition should be accepted. The traditional format of teaching should not be abandoned, but the new constructivist format should be accepted. The book also treats the subject of future forms of education and future development of the (constructivist) theory of education. There are significant issues to be treated as to what is the best system for educating students. How can knowledge and critical thinking be used in the field of education?

The constructivist theory imposes the greatest burden on the target of the educational process, the student, rather than on the supplier of the information, the teacher and the technological tools. Computers are the key to helping students. The principal technological items used in the book are: video, hypermedia, email chat, bulletin boards and simulations. Individual software or web sites are checked in a detailed fashion, and learning processes are suggested, as well as students' functions, teachers' functions, and learning assessment. There are references and questions included after each chapter, and at the end an index is included. But I do not recommend using this book as a textbook in a course on the introduction of technological education for students with restricted experience in technology. But if students are already experienced in technology this book can enable them to pay careful attention to the function of technology in the classroom.

(D H Jonassen, K L Peck, B G Wilson Special Education (1999)

3-The class community of learning

The prevalent opinion today on constructive teaching: teaching- learning processes and assessment will take place in a constructivist class, when the class "is a community of learners" involved in these actions: in open dialogue and in thinking- data collection, drawing conclusions and generalizations; in joint presentation for the sake of structuring the knowledge; in tasks of research of meaning, in encouragement and in reflective abstraction- discussion, writing and drawing; in raising subversive ideas in context with a realistic context; in subverting the balance enabling learning, by means of raising many possibilities, not questions and hypotheses of knowledge; uniformity, and especially by means of illumination of contradictions; in fostering a rich environment in activity fostering development (Glazerfeld, 1997); in study of the environment rich in technology (Heller and Gordon, 1996; Granon- Brooks, Brooks, 1997) there needs to be assessment in this context. There is none (Posnet, 1996; Salomon, 1997).

For constructive teaching- learning the teaching is done by contemplation of students working with assessment differentiated from the teaching, the assessment is done by means of interactivity of the students and by means of a dialogue between the teacher and the student. Assessment of ideas and materials, in observation of activity the teacher "should peek at the importance of the students, see the cognitive connections in this form enabling usually structuring of knowledge- in fact both of them learn as a result of the assessment". One should ask questions which have more than one answer, questions which arouse thinking in the choice of tasks for assessment in problems requiring interdisciplinary investigation, in tasks requiring creative use of a variety of materials; one should use realistic judgment. It is recommended to refrain from questions which have "correct" or "incorrect" answers. Answers and tasks from this type damage the students' thinking, cancel it and encourage learning by way of personal knowledge (Brooks, Ibid.). They do not expose the cognitive difficulties of the student before the teacher (Granon- Brooks).

This change in the field of reference amongst the rest of the changes which took place in the field of educational thinking in recent years, took place: from a selective education system to a system promoting "the existing of variance between the students, the change expressed in the title. According to this approach, one should consider variance between the students. (Aloni, N. 1994, within: core program, p. 21). The variance in types of action is expressed amongst others in learning styles:

in constructive teaching which was found suitable for changes which took place in the world following the use of technology whose contribution was in the introduction of the internet to the field of education when the knowledge passed from the possession of the educators and adults to the children and to every seeker; the monopoly on the knowledge was finished, the option was opened before the students to reach by a click all the sources of knowledge.

This situation pushed the student to investigate everything they would want, characterized by a quick growth of bodies of knowledge in our period, called in the present discourse the post- modern period. The knowledge existing today in many fields can change as our students will be forced to cope with problems which were not learnt at school. The knowledge is not perceived as final and absolute.

The capacity to learn independently whilst directing "the abilities required for successful functioning, characterizing both the capacity to solve new problems whilst using previous or self- knowledge, and the capacity to think, to consider and adapt to new situations, is the development of these abilities with the learner" (Birnbbaum, 1977, p.12) in recent years the awareness grew of the importance of knowledge and the conceptions which the pre- learning process students bring with them, these subjects rose on the educational agenda following studies which were done in the United States, and they showed unambiguously that even after the students are exposed to the learning process they continue to hold faulty conceptions.

Accordingly it is important to develop a recognition that the students do not come to the study benches with an empty burden of knowledge, thus it is important to see the students as those who accumulated experience and insights during the years of their life, and they continue to adapt them and

develop them also whilst they learn, within the school walls and outside them.

Thus in planning the teaching learning process it is important, therefore, to bring into account a number of basic assumptions

1. Learners reach the formal education system with knowledge, with conceptions and with emotional experiences on many subjects in science and technology, which are the result of their personal experience in phenomena and events connected to these fields.
2. These beliefs and conceptions are immune to a great extent from traditional teaching methods.
3. These conceptions and beliefs are not characteristics of a certain place and time, but are widespread with students of different ages, with various capacities belonging to different nations.
4. The process of learning is an active and adaptive process executed constantly by the learners.

According to the constructivist approach to teaching and learning, in the process of structuring the knowledge learners are influenced by the knowledge base, by the conceptions, former beliefs and positions, and thus the previous knowledge undergoes change in every learning process in general, and in particular in science and technology, the reason for change in knowledge happens following the creation of another meaning for knowledge and there are cases that knowledge is abandoned totally. Hence, it is possible to conclude according to these approaches, that learning is not only a supplement or reduction of details but change and adaptation which the learner must undergo when he adopts new concepts and views of life.

On the other hand by abandoning alternative concepts, it is possible to say that knowledge is temporary, developmental and subjective, and it is built internally with the learners and can pass to others in a cultural and social way. In the learning process the teacher must supply opportunities to learners in order to summon a search for regularity, asking questions, structuring personal models and according to this conception it is possible to define learning: as an interaction between old and new conceptions which

are structured following the experience which the learners undergo, every verbal or non- verbal occurrence is explained with the learner according to his system of values, beliefs, conceptions, thus these facts constitute a proof of the huge importance which the conceptions of students before learning have. Thus early identification of the conceptions of the students can help teachers to summon a learning process which can structure changes in the faulty conceptions (Bell, 1985; Driver & Erickson, 1983)

3-1 "How to they make learning constructive

"How to they make learning constructive constructivism is an overall name for a sociological pedagogic philosophical, linguistic and methodological approach, a claim common to all these approaches is that knowledge is built and is not transferred or created, there is no doubt that a very comprehensive argument is concerned here which is explained and interpreted in many ways. Constructivism is considered as a very fluid mixture of theories and ideologies (Harpaz, 2000) which it is impossible to derive from the constructivist strategic approach on teaching, despite what was stated. It is important for constructivists to take an interest in erroneous conceptions of students and to describe their ways of thinking; similarly it is important for them to know that Piaget's work is considered as part of the constructivist heritage; the psychological stream is considered as having the greatest significance in the field of teaching and learning; constructivism deals with the question how students learn, and an answer to this question is found in the assumption that knowledge is not transferred or created but it is built in the consciousness of the learner with the help of concepts and patterns which are found in our consciousness. This approach was found absolutely contrary to the behaviorist approach which sees in the learner an absorber of stimuli and reaction, it is important to note that although Piaget was considered as the greatest founder of this approach is used at the time, using a vocabulary from which only a few words from sound like useful words , Dr. Yehieli,in. In the modern constructivist approach (2008) . modern constructivism deals with learning and not with teaching.

1 -The argument of constructivism that knowledge is not transferred by built by patterns is contrary to the thinking of Beck (1999) and also contrary to the conception of the teacher as a conveyor deals with this contrast and

said that anyone who thinks that the learner is like a blank page, and learning takes place by one side which broadcasts and another side which absorbs which is mentally ill, he offers to make a change in the conception, that only one side broadcasts and claims that both sides need to be active and the side which was considered as absorber does not absorb but builds the knowledge , Harpaz (2008)

The concept "learning" has many definitions which match the thoughts of education researchers one of which is: learning is defined as behavioral change as a result of the experience of the learner. Behavioral change can be explicit (change in eating habits for example) or tacit change (in knowledge, in positions in thoughts, or in emotions). Experience is experience which the person experiences in his contact with the world (phenomena, people, objects). Many theories exist describing different models for the learning process.

In this paragraph we will concentrate on the constructivist theory which sees, in learning a process during which the learner builds his knowledge as to the world in which he lives. The knowledge which we accumulate is organized in complex schemas connected one to another. Learning means a search for tools which will help us to understand our experiences. When we encounter an idea, an object or a new phenomenon, we try to interpret the new experience and to adapt it to knowledge or the array of rules which we accumulated until now. Existing knowledge is the basis according to which we interpret the new experience, and the interpretation which we accumulate adds and changes the existing knowledge, that is, the schemas which we created according to the accumulation of new knowledge. The more we learn, the interpretation which they gave to phenomena in the past changes and is updated according to the new experiences (Brooks and Brooks, 1997). In other words, the knowledge of the learner is created in a process of assimilation (shaping of new knowledge for existing knowledge structures) and in a process of adaptation (change of the schema so that it will match the new knowledge which was accumulated). this process described as recursive, a process in which existing knowledge helps to build new knowledge which becomes the existing knowledge described.

4-2 The process of structuring knowledge and its arrangement in our brain

Constructivism- learning theory and educational philosophy and its implementation in a "media+" environment.

According to Kromholtz N. Idea Center Tel Aviv University learning is a process in which the learner is involved actively and builds the knowledge and his understandings

The opinion of Jean Piaget is considered as a central opinion on this subject, he was, a Swiss biologist and developmental- cognitive psychologist, who was active in the first half of the twentieth century. He investigated tens of children including his private children, in his investigation he focused on the following points

1. The mechanism with whose help the learner acquires knowledge, creates it and expands it- that is, the learning mechanism.
2. How and where the child organizes the world which he experiences similarly he focused in his investigation on logical structures in which the knowledge is stored.

Piaget claimed that learning is a process in which the learner is actively involved; he builds the knowledge and his understandings. In his claim, all of learning is done by the learner, building in his brain the learnt concepts. Thus according to this approach a person cannot transfer knowledge to another person.

Knowledge is built in the brain of the learner on the basis of his experiences and understandings of reality. In order to give the experience meaning, the person has to build the knowledge- to build an abstract product in his mind.

Accordingly learning is considered as:

1. Building of an abstract conceptual product,
2. It is executed by the learner on the basis of experiences in the physical- external world, and/ or in interaction with people.
3. A synthesis of new experiences and of previous understandings.

Piaget assumed that mental structures exist in the brain of the person, constituting an infrastructure for the various actions involved in the building of new knowledge. This conception of Piaget of the brain of the person recalls the cogitation of the German philosopher Emmanuel Kant (1724-1804). Kant was the first thinker in the modern era who raised the possibility

of the existence of basic thinking patterns in the brain of the person- patterns found in the brain before any learning. According to Kant, the knowledge we have on the world is created thanks to a combination of the action of two factors:

1. Personal- sensory experience- everything that is experienced before and during the things.
- 2- Logical analysis- is done after, or following, the experience

As it was mentioned above, in recent years there has been unanimity that there is no escape from change of the teaching method from a teacher centered one to a teaching method in which the student becomes active, and the teacher will accept the job of instructor. In this situation all types of varied proposals for change are created (part of the proposed changes were executed unsuccessfully in the past due to absence of preparedness on the part of the teachers). In this spirit there is a clear recommendation to teachers in Israel and in the world to teach with a constructivist teaching method. Under these circumstances we (in the year 2010) decided to examine the connection between a teaching method and students achievements and this is in fact one of the main reasons for this study, which was designed to prove the great benefit of the use of a constructivist teaching method to the student and to the teacher.

The study was carried out in two high schools, the Kabiya High School in which the experiment was made- the number of students who participated in the study was 100 students (N=100) from two 11th grade and two 10th grade classes, the number of students in the control high school Bosmat Tivon High School is identical to that in the trial school, the opening marks of both schools are identical, the implementation of the study started on the 15.10.13, the end of the study was on 10.2.14.

As mentioned the matter of the study was implementation of the following constructivist learning principles: 1- Recognition of the perceptions of the students of the study contents, therefore the teachers will ask the students what is known to them on the study subject in order to find faulty perceptions and to treat them. 2- Personal experience, and cooperative and active learning. 3- Learning around bunches from the whole to the part and

connection of the study subjects to big ideas. 4- Teaching lessons in which there is use of thinking strategies (there are other principles which are recorded in the literature survey which were not implemented in the study due to difficulties expected in isolation of variables).

The implementation of the study continued for four months, the implementation in the first month served also for the sake of close instruction for the teacher who implements the study, a teacher who teaches in 10th grade, and 11th grades at a school in which the experiment is carried out. In order to achieve the goals of the study, two stages were executed, a quantitative one and a qualitative one.

At the end of the study we delivered a contents test on the digestive system in 11th grades and on the subject of ecology in 10th grades), the results of the tests showed a significant connection between the study method and the students' achievements [$p < 0.001^{***}$], hereby the first study conjecture was corroborated.

The contents test which we delivered to students included two segments a first segment included knowledge questions and a second part included questions which necessitate a thinking strategy, the results showed that the average of experiment classes was higher but the connection did not come out as significant (no significant statistical difference between the control group and the experiment group in higher order thinking [$t(99) = -0.056$, n.s.]) and thereby the results did not confirm the second study conjecture.

In addition to the contents test the students were asked to fill in a questionnaire, in order to answer the study question if there exists a connection between the teaching method and the students' perception of the significant learning process in which they gained experience? The results showed a significant connection and thereby they confirmed the third study conjecture: [$t(99) = 3.002$, $p < 0.01^{**}$].

In the fourth study conjecture: what is the connection between the teaching method and positions of students towards the science teachers and the study method generally? The results showed a significant connection between the teaching method and the students' positions and thereby the fourth study conjectures was confirmed: [$t(99) = 4.41$, $p < 0.001^{***}$].

On a secondary study question: is there a connection between the sex of the students and their achievements? No significant connection was found.

Qualitative analysis

In an interview with the teacher who executed the study it was found that she was happy from the execution of the study as the motivation of the students rose and likewise also their achievements, in addition to this she said that she will continue to teach by the new teaching method even after the end of the study.

Recommendations

To summarize, the study results confirmed that teaching according to the constructivist approach, which is represented by the principles which were implemented in the study, advanced the significant learning process and thus the students' achievements rose, likewise the students' positions improved positively and significantly towards their teachers and towards the science lessons in which we implemented the study, finally there is no doubt that the results of the study showed how important it is to teach by a teaching method according to the constructivist approach, but in order to pass to this teaching method there is no escape from exposing the teachers to experience in this approach for a period of months, as only by gaining experience will they know how much they are contributed to and contribute. better, and our work will be easier and more satisfying.

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Recommendation

- 1- It is important to connect the students to community life, for example as part of the European states which combine studies and work in factories, for junior high school students in that field which the students choose, as in this way there will be true gaining of experience and they will not need to see only illustrations in the laboratory or short experience.
- 2- Not to cease from finding the balance point between the ambitions of the student in the twenty- first century (and more precisely in the year 2014) and in every year which will come, and ambitions of the education system at a national and world level, that is to stay with the finger on the pulse as we are found in experience which we did not choose, experience in which the knowledge is piled up and without us wanting it huge quantities of knowledge are open before our beloved (our children), until now we saw huge progress in technological and scientific development, but from an educational point of view we felt an almost total disconnection between the parents and children.
Therefore we need to strive first of all to bring material to our students which is relevant to their lives starting from junior school simultaneously with teaching reading and writing until high school in which the study should be adapted to students, so that each student will choose what suits him and will continue in it in universities.
(These recommendations are referred to the education authorities in Israel and in the world)
- 3- It is important to connect the students to community life, for example as part of the European states which combine studies and work in factories, for junior high school students in that field which the students choose, as in this way there will be true gaining of experience and they will not need to see only illustrations in the laboratory or short experience.
- 4- Not to cease from finding the balance point between the ambitions of the student in the twenty- first century (and more precisely in the year 2014) and in every year which will come, and ambitions of the

education system at a national and world level, that is to stay with the finger on the pulse as we are found in experience which we did not choose, experience in which the knowledge is piled up and without us wanting it huge quantities of knowledge are open before our beloved (our children), until now we saw huge progress in technological and scientific development, but from an educational point of view we felt an almost total disconnection between the parents and children.

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- 5- It is important to connect the students to community life, for example as part of the European states which combine studies and work in factories, for junior high school students in that field which the students choose, as in this way there will be true gaining of experience and they will not need to see only illustrations in the laboratory or short experience.
- 6- Not to cease from finding the balance point between the ambitions of the student in the twenty- first century (and more precisely in the year 2014) and in every year which will come, and ambitions of the education system at a national and world level, that is to stay with the finger on the pulse as we are found in experience which we did not choose, experience in which the knowledge is piled up and without us wanting it huge quantities of knowledge are open before our beloved (our children), until now we saw huge progress in technological and scientific development, but from an educational point of view we felt an almost total disconnection between the parents and children.
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7- It is important to connect the students to community life, for example as part of the European states which combine studies and work in factories, for junior high school students in that field which the students choose, as in this way there will be true gaining of experience and they will not need to see only illustrations in the laboratory or short experience.

8- Not to cease from finding the balance point between the ambitions of the student in the twenty- first century (and more precisely in the year 2014) and in every year which will come, and ambitions of the education system at a national and world level, that is to stay with the finger on the pulse as we are found in experience which we did not choose, experience in which the knowledge is piled up and without us wanting it huge quantities of knowledge are open before our beloved (our children), until now we saw huge progress in technological and scientific development, but from an educational point of view we felt an almost total disconnection between the parents and children.

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