The Impact of Teacher's Thinking and Learning Styles Upon his/her Teaching Style

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Abstract

Argument: To teach for a successful intelligence, according to Sternberg, means to integrate and to valorise the creative and practical skills of the students, alongside with their analytical and memorizing skills, allowing them to valorise their intellectual qualities, by offering them a variety of ways to encode information (analytical, creative and practical activities) which facilitates memorizing the proposed materials.

Objectives: The way the teacher prefers to use his cognitive abilities (*thinking style*) influences his preference for certain learning situations (*learning style*), with impact upon his personal style to organize and to use teaching methods (*teaching style*). In this sense, we proposed to build a questionnaire to identify the teaching style used by the teacher in the classroom, according to the theory of Sternberg and to surprise the relationship between "thinking style-learning style" of the teachers.

Sample: This pilot study has been developed upon a sample formed by 100 subjects (30 males and 70 females) randomly selected from the West Region of Romania, between 25 and 65 years of age, who teach different disciplines in high schools and universities. They have at least four (4) years tenure in the field. The subjects were tested between January and May 2006.

Key words: thinking style, learning style, teaching style, questionnaire, performance.

Theoretical background

There have been many tries to define intelligence because this kind of construct is seen differently among different cultures. The most important aspect, that all researchers have been emphasizing, refers to the individual's abilities to adapt to his context. Sternberg (1996, apud Sternberg and Kaufman) suggests that, rather than to pay attention to the classical notion of intelligence, we have to concentrate on the expression "successful intelligence", which is defined as "one's ability to obtain success in life by comparing with personal standards, within the frame of the socio-cultural context". Although this type of intelligence is individually determined, depending on what the person considers a success, it always appears in a socio-cultural context (shaped by values and social norms).

To have a successful intelligence, according to Sternberg, means to have the ability to adapt, to shape and to select those contexts that can offer you the possibility to achieve your personal, social and cultural goals. This thing implies the capacity of individual to identify his strong and weak points and to find

out ways to valorise them, to compensate or to correct them, depending on the situation (Sternberg and Kaufman, 1998).

The theory of a successful intelligence proposed by Sternberg is based on four key elements, namely (Sternberg, 1997):

1. defining the intelligence as the ability to obtain success in life, retrospect to personal standards established according to socio-cultural context in which the individual lives;
2. this ability to obtain success depends on the person's manner to capitalize his potential and on his capacity to correct or to compensate his weak points;
3. the success is achieved by the equalisation between analytical, creative and practical abilities of the person;
4. the balance of these abilities is realized due to the necessity to adapt, to shape and to select favourable contexts in order to valorise them.

These three types of abilities or intelligences – as the author name them, very important in intellectual functioning, are (Sternberg and Kaufman, 1998):

- *analytical abilities* – which are necessary to analyze and to evaluate the options that a person has in his life; the process implies four stages: identifying the existence of a problem, defining the problem's nature, establishing the necessary strategies to solve it and monitoring the solutions of the process.
- *creative abilities* – are useful, in the first place, in generating solutions to solve the problems the person confronts with;
- *practical abilities* – are obvious in options' implementation in a very well defined context and in changing them in functional options.

Unfortunately, in educational context, there is a strong tendency to valorise more the analytical abilities and memorized information, to the prejudice of creative and practical abilities. The *theory for a successful intelligence* proposes us to develop the expertise of students, teaching in a manner in which creative and practical skills are integrated and valorised with analytical and memorize skills, allowing students to valorise intellectual qualities, giving them multiple ways to encode information (analytical, creative and practical activities) which facilitate the retain of proposed materials (Sternberg, 2003).

Teaching for the development of an *analytical intelligence* of the student means to encourage him to analyze the offered information, to evaluate the value of what he has to learn, to explain the way things work, to compare many situations or problems.

When you are interested to stimulate the development of a *creative thinking*, you have to use words plays and role-playing games, to create situations that may offer the possibility to invent and to explore new ways of solving different problems, to imagine scripts within which you can use acquired knowledge or find out new utilities.

Everything is learnt in the classroom becomes important when is contextualized in practical activities. To stimulate a *practical thinking* the pupils have to be encouraged to apply in their daily activity information they got in class, to verify theoretical strategies, to experiment what they know from theory.

Practical situations can be used as starting point or as final point, offering the students the possibility to manage abstract concepts.

When we talk about a theory, we refer to all those more or less systematic organized ideas connected to a certain subject. Starting from this generic definition, we can take as an example the cognitive theories of learning. In case of emphasizing the aspect of *memorizing* in the learning process, we are interested to hear from the student, which those theories are (their classification), how they explain the learning, which are the key concepts they use. If we intend to develop an *analytical thinking*, we ask student to compare Piaget' s theory with Vygotsky's theory, to find out differences and similarities between the two perspectives on cognitive development and functioning offered by the authors. Based on what the student already knows about cognitive theories, we encourage him to think a personal theory through which he can try to explain learning from this point of view, trying, in the same time, to valorise his *imaginative potential*. Moreover, because the value of knowledge is determined by her utility, the student has to be stimulated to think and to apply in practice these theories, in order to improve learning in the classroom, to organize learning context, to use teaching methods and means according to what theory says.

Consequently, the teacher's role is not only to give information which his students have to assimilate and then reproduce it in the assessment process, but he has to stimulate them to generate ideas, to evaluate its and to work hard to make these ideas work in practice, convincing everybody of their value.

The way the teacher prefers to use his cognitive abilities (*thinking style*) influences his preference for certain learning situations (*learning style*), with impact upon his personal style to organize and to use teaching methods (*teaching style*). In his teaching activity, the teacher does not transmit only a certain informational content, but also something from his manner of solving cognitive conflicts or approaching problems, which his students will take subconsciously. His teaching style emphasizes his learning and thinking styles, which influence the students he works with (a certain teaching method determines a certain subsequent learning style) and they become obvious in his way of measuring the performances. A high level of compatibility between teachers' thinking and learning styles and his pupils' styles will conduct to better academic performances.

Research' objectives

In order to reach the objectives of this research – to identify the relationships established between thinking style – learning style - teaching style of the teachers and thinking style - learning style - academic performances of the students - we organized this pilot study in three distinct stages:

1. ***the identification of the relationship between "thinking style – learning style - teaching style" of the teachers:***

- the elaboration of a questionnaire in order to identify the teaching style of the teacher, based on Sternberg's theory of successful intelligence;

2. ***the identification of the relationship between "thinking style - learning style - academic performances" of the students*** (is there a preference of thinking style - learning style in the case of performing students?);

3. ***the identification of the relationship between "thinking style – learning style - teaching style" and "thinking style - learning style - academic performances" in the classroom***.

Sample description

This pilot study has been developed upon a sample formed by 100 subjects (30 males and 70 females) randomly selected from the West Region of Romania, between 25 and 65 years of age, who teach different disciplines in high schools and universities. They have at least four (4) years tenure in the field. The subjects were tested between January and May 2006.

All the obtained information have been submitted to a qualitative interpretation. The most important aspect at this level was to construct a questionnaire to identify the teaching style and what kind of thinking develops the teacher on his students.

Subjects' gender	**Male**	**30**
	Female	**70**
Age	**25 – 34 years**	**31**
	35 - 44 years	**36**
	45 - 54 years	**23**
	54 - …years	**10**
Tenure in the field	**4 - 12 years**	**51**
	13 - 22 years	**24**
	23 - 32 years	**18**
	33 -… years	**7**
Field of teaching	**Human sciences**	**43**
	Human applied sciences	**27**
	Natural sciences	**30**

Table no. 1. Sample description

Methods

Used tests portfolio consisted of three questionnaires, by its application we focused on:

1. the evaluation of cognitive style using "*thinking style inventory*", the short version of Sternberg and Wagner (1994) proposed test. The inventory represents a Likert scale type with 6 steps, from 1–*very strong disagreement* to 6–*very strong agreement,* made up by 65 items, equally distributed for each cognitive style that evaluates thirteen styles (legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, local, global, intern, extern, conservator and liberal). It is a self-evaluation questionnaire; every subject answers these questions taking into account the agreement or disagreement to their content;

2. the evaluation of learning style using "*learning style inventory*", proposed by Honey and Mumford (1986), which is based on Kolb's model of experiential learning. The questionnaire has 40 items which evaluate 4 learning styles – active, reflective, theoretic and pragmatic. It is a self-evaluation questionnaire; every subject answers these questions taking into account the agreement or disagreement to their content;

3. the evaluation of "*teaching style for a successful intelligence*" using a questionnaire constructed by us (Paloş, 2006) and based on Sternberg's theory of successful intelligence. The inventory represents a Likert scale type with 6 steps, from 1–*very strong disagreement* to 6–*very strong agreement*, made up by 23 items which surprised thinking type that teacher encourages to his students in teaching activity, distributed

for each ability (5-reproductive, 5-analytical, 7-creative and 6-practical abilities). It is a self-evaluation questionnaire; every subject answers these questions taking into account the agreement or disagreement to their content.

Results and discussions

I. The *style* is considered to be a preferred manner to do something, which remain stable in time and within the variety of the activities. *Thinking style* reflects rather an attitude toward the things then an ability, what somebody prefers and how prefers to do that thing (Sternberg, 1994). Alternatively, thinking style refers to the person's preference to think upon the materials which he learnt or he learns, for instance to approach it global, to evaluate, to get over the appearance, and so on.

Cognitive style identifies the manners through which individual reacts to different situations and includes in his structure stabile attitudes, preferences and habitual strategies that define individual style in perceiving, rehearsing, thinking and solving problems. That means cognitive style emphasizes general manners and structural properties of cognitive system, aspects that do not depend on the personal preference. It develops in tight relation with personality traits and includes typical manners of thinking, too (Messick, 1984).

The way in which a person uses different senses (visual, kinestesic and so on) to comprehend, to organize and to retain experience, defines his learning style. *Learning style* includes individual learning strategies repertoire (behaviours, stages, operations, techniques which students use to facilitate their acquisition, retain, rehearsal and utilization of information) combined with cognitive style (the way in which information is organized and represented). Learning strategies could change, but style's dimensions stay constant (holistic-analytic, verbal-visual, and so on) (Wiiteman, 1997).

We constructed a questionnaire in order to identify the teacher's teaching style that facilitates the development of reproductive, analytical, creative or pragmatic thinking of pupils, based on Sternberg's theory of successful intelligence. A first statistical analysis upon the questionnaire consisted in an exploratory factorial analysis using *principal axis factoring method,* with oblique rotation.

Factorial structure of the questionnaire respects, in an acceptable extent, theoretical model of the starting point:

- optimal factorial solution is for four (4) factors, as we can see in figure no.1;
- the items are grouped on these factors, according to the way they are constructed. There are items with high loadings on the others factors too, but this is due to the strong relationship between these factors, and because is very difficult to undertake a clear differentiation between fundamental operations (analysis, synthesis, comparison, and so on) and instrumental operations (algorithmic, heuristic) which are implied in analytical, creative and pragmatic thinking.

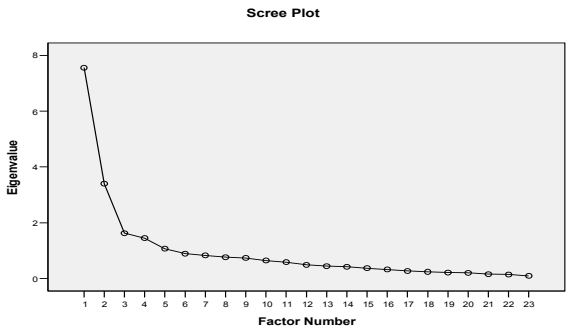

Figure no. 1.Cattell's screeplot

Table no. 2. Items distribution on factors

	Practical	Reproductive	Analytical	Creative
Practical 22	,814			
Practical 4	,611		,393	
Practical 8	,561			
Practical 20	,536			,371
Practical l6	,487			
Practical 12	,482			,360
Reproductive 9		,892		
Reproductive 5		,834		
Reproductive 17		,696		
Reproductive 13		,667		
Reproductive 1		,648		
Analytical 2			,695	
Analytical 6	,402		,615	
Analytical 10			,467	
Analytical 14	,360		,369	
Creative 11				,866
Creative 23				,709
Creative 19				,581
Creative 3				,540
Creative 15				,491
Creative 7				,461
Analytical 18			,426	,439
Creative 21				,363
α Cronbach	**.85**	**.86**	**.76**	**.83**

A. In the development of the students' *reproductive thinking*, during the teaching activity, the accent is put on the assimilation and reproduction of the information, stimulating the student's capacity to memorize. We talk about a linear thinking, reproductive regarding its qualitative aspect, whit a high level of stereotype and automatism.

The internal consistency quotient of the scale which we have proposed to use to identify the teaching style that stimulates the development of a reproductive thinking of students is *α Cronbach .86*

The teacher who adopts a teaching style that emphasizes the development of a students' reproductive thinking, encourages them to accumulate and reproduce a considerable volume of information, without giving them the possibility to "to think on their own", to analyze the proposed information. The teacher perpetuates what is familiar, with rules and procedures already known, avoiding the change and the exploration of another perspective, considering, maybe, that the volume of information means progress in thinking and knowledge, that is a necessary condition but not a sufficient one.

The preference for this teaching style could be also influenced by the person's tenure in his profession, because teaching the same discipline a long period of time could conduct to a kind of routine and a certain "indolence" in promoting new ways of teaching or learning.

	Unstd.coeff	Std coeff	Std.error	t	sig
(Constant)	-4,412	5,302		-,832	,408
Reflective	,192	,108	,181	1,783	,078
Legislative	-,384	,171	-,229	-2,250	,027
Local	,420	,184	,211	2,279	,025
Liberal	,419	,152	,299	2,748	,007
Conservative	,519	,149	,360	3,482	,001
Tenure	,075	,041	,153	1,840	,069
Reproductive					

Table no. 3. Dependent variable: reproductive teaching style

B. In the development of the student's *analytical thinking*, during the teaching activity the accent is put on the systematically analysis and evaluation of the alternatives, the explanation of the way the things are happening or functioning, the appreciation of the value of the information, "breaking the whole in pieces", on the logic and rational.

The internal consistency quotient of the scale which we have proposed to use to identify the teaching style that stimulates the development of an analytical thinking of students is *α Cronbach .76*

Adopting a teaching style to facilitate the development of an analytical thinking of the students they work with, is encountered at the teachers who organize and restructure materials by their own cognitive rules, according to their personal preferences, beforehand they made a critical analysis, compared and evaluated ideas and problems they confronted with.

Their light conservatory tendency could be determined by their adhesion to rules and procedures, which were established after personal analyses, and they do not want to give them up.

	Unstd.coeff	Std coeff	Std.error	t	sig
(Constant)	6,142	3,698		1,661	,100
Legislative	,645	,117	,632	5,494	,000
Judicial	,409	,109	,353	3,765	,000
Monarchic	-,169	,097	-,156	-1,748	,084
Anarchic	,184	,108	,135	1,696	,093
Global	-,267	,095	-,241	-2,823	,006
Intern	-,219	,095	-,223	-2,315	,023
Conservative	,208	,081	,237	2,568	,012
Analytical					

Table no. 4. Dependent variable: analytical teaching style

C. In the development of the student's *creative thinking*, during the teaching activity the accent is put on synthesis, the discovery and the elaboration of a new principle in data relationship – an unusual one, sometimes "defying" the logic. One looks for personal ways to think and to do things, others than everybody else does, taking from experiences and taking on intellectual "risks".

The internal consistency quotient of the scale which we have proposed to use to identify the teaching style that stimulates the development of a creative thinking of students is *α Cronbach .83*

Teachers, who through their teaching style contribute to the development of a creative thinking of their students, are persons who chose themselves personal ways of action, according to personal rules. They prefer those situations that are less structured, and give them the possibility to reorganize and restructure them the way they wish, changing varied parameters of the situations.

One variable that can influence their creativity is the tenure of the activity with students, their openness toward the relation, rich experience in the field, with the possibility "to infer" easier what works or not in the classroom.

On the other hand, their learning style is an *active* one, involving in everything that is new, being opened to experiences and challenges, enthusiastic, unskeptical, and sometimes without thinking too much at the consequences.

	Unstd.coeff	Std coeff	Std.error	t	sig
(Constant)	14,540	3,275		4,440	,000
Active	,321	,102	,269	3,151	,002
Legislative	,344	,159	,219	2,171	,033
Global	-,378	,148	-,222	-2,553	,012
Liberal	,541	,128	,411	4,219	,000
Tenure	,095	,035	,208	2,700	,008
Creative					

Table no. 5. Dependent variable: creative teaching style

D. In the development of the student's *practical thinking*, during the teaching activity the accent is put on finding out lots of application for what is learnt, experimentation, innovation, enthusiasm, diversity…processing a large amount of information using mental operations and procedures which demonstrated their utility and opportunity in similar situations.

The internal consistency quotient of the scale which we have proposed to use to identify the teaching style that stimulates the development of a practical thinking of students is *Cronbach .85*

Teachers that are centered on action and putting in practice plans and ideas to make it works and, in the same time, to convince others that it works, adopt in the classroom a teaching style that facilitates the development of a pragmatic thinking of their students. They outrun existing rules and procedures and try "to make things work".

	Unstd.coeff	Std coeff	Std.error	t	sig
(Constant)	16,283	3,388		4,806	,000
Legislative	,232	,136	,176	1,704	,092
Liberal	,498	,114	,451	4,373	,000
Age	-,131	,076	-,339	-1,733	,087
Tenure	,137	,075	,359	1,834	,070
Pragmatic					

Table no. 6. Dependent variable: pragmatic teaching style

Learning style includes individual repertoire of learning strategies (behaviours, stages, operations, techniques used by students to facilitate the acquisition, memorize, retrieve and utilization of the information) combined with cognitive style (the way information is organized and represent).

Active learning style – which involves implication and openness toward new experiences, enthusiasm in approaching them, first action and then reflections upon consequences, rich social relationships centered on person itself, is not preferred by those persons with a analytical and reproductive teaching style.

Learning style		Practical teaching style	Reproductive teaching style	Analytical teaching style	Creative teaching style
Active	Pearson Correlation	1	**-,546(**)**	**-,457(**)**	-,183
	Sig. (2-tailed)		,000	,000	,074
	N	100	100	100	100

Table no. 7. Active learning style relation' with teaching styles

Reflective learning style – based on thinking in detail before reaching a conclusion upon very precisely analysis and observation of different perspectives of experiences, is preferred by those persons who adopt in their classroom activity an *analytical* and *creative teaching style*, and less by persons with a pragmatic teaching style.

Learning style		Practical teaching style	Reproductive teaching style	Analytical teaching style	Creative teaching style
Reflective	Pearson Correlation	**-,546(**)**	1	**,654(**)**	**,417(**)**
	Sig. (2-tailed)	,000		,000	,000
	N	100	100	100	100

Table no. 8. Reflective learning style relation' with teaching styles

Theoretical learning style – in which analysis and synthesis are very important, in which things have to be clear, logical, to have meaning and to fit with the whole, trying to maximize the certainty, is preferred by those persons with a *reproductive teaching style* and *creative style* too – maybe as a foundation for new discoveries, for understanding the way certain things are working and pass over the habits, the routine, to outrun known "logical".

On the other hand, persons with a pragmatic teaching style don't like this learning style, maybe because is too "static" for them, and they need action, to make things work, to apply in practice what they already know from theory.

Learning style		Practical teaching style	Reproductive teaching style	Analytical teaching style	Creative teaching style
Theoretical	Pearson Correlation	**-,457(**)**	**,654(**)**	1	**,504(**)**
	Sig. (2-tailed)	,000	,000		,000
	N	100	100	100	100

Table no. 9. Theoretical learning style relation' with teaching styles

Pragmatic learning style – is specific to persevering and confident persons, who try to solve problems, who take practical decisions and those with an *analytical teaching style*, who want to check how theoretical aspects work in practice, prefer it. In the same time, it is preferred by those persons with a teaching style that stimulates a reproductive thinking, maybe as a source for new knowledge, which can be added to what they already know.

Learning style		Practical teaching style	Reproductive teaching style	Analytical teaching style	Creative teaching style
Pragmatic	Pearson Correlation	-,183	**,417(**)**	**,504(**)**	1
	Sig. (2-tailed)	,074	,000	,000	
	N	100	100	100	100

Table no. 10. Pragmatic learning style relation' with teaching styles

It is obvious that *thinking style* (the manner of using cognitive abilities) is reflecting in *teaching style* – the teacher's way to organize and transmit information to students. At it turn, *learning style*, which includes thinking and cognitive style but also the preference for certain learning situations, is found in this relation.

There are researches that show us that academic performances are considerable when there is a match between teacher's teaching style and cognitive or learning style of students (Geary and Sims, 1995), these preferring those teaching/learning activities which take in consideration personal style. The absence of this compatibility could cause failure, frustration and lack of students' motivation (Peacock, 2001, Reid, 1995). In addition, both teachers and students "look for" those activities that "fit them" depending on the preferred style (that does not mean it is necessary the best for learning).

Educational implications

Identifying the relationships between the fourth variables: thinking style – learning style – teaching style – academic performances seems to be very important and useful in educational practice, at least from three perspectives:

- ***teacher's point of view*** – referring to his preference for certain teaching methods influenced by his thinking and learning styles, as well as his training for educational activity according to his personal characteristics;
- ***student's point of view*** – referring to the combination of teaching methods which can offer a big variety of alternatives to encode information and, in the same time, conduct to an efficient learning, as well as choosing the best methods of assessment which can stimulate thinking style of students and valorise their potential (essays, projects, oral exams, and so on);
- ***educational relation's point of view*** – the compatibility between thinking and learning styles of teacher and his students conduces to better academic performances of the students.

Cognitive and learning styles give us information more about how the information is processed and less about "how well". Considered to be a result of the interaction between cognitive styles and personal variables (such as motivation, attitudes, locus of control - Schmeck, 1988, apud Witteman, 1997), learning

style is very important in building knowledge. If the teacher identifies and knows the style of his students, he has the possibility to organize a large variety of learning groups and every student could benefit from the advantages of one or other learning style and, in the same time, he could compensate the disadvantages of the others styles (Wiiteman, 1997). The educator could also structure learning context in a manner that helps the student to assimilate the proposed materials and to build his knowledge.

Limits of this study

The results we have obtained after developing this pilot study do not pretend to be representative or generalizing, but we think that they cannot be neglected either. The first step was to construct a questionnaire that identifies the teaching style that teacher uses in his/her class activities, according to Sternberg theory of successful intelligence. In the same time, we want to achieve the other two objectives, too. Due to this reason, we intend to increase and to diversify the structure of the sample, in order to see the degree of validation of our conclusions by the results.

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Questionnaire

Teaching style for successful intelligence
(according to Sternberg theory)

Constructed by **Ramona Paloş**

To teach for a successful intelligence means to use a set of techniques to encourage students to involve into a type of learning which stimulates a reproductive thinking, but in the same time facilitates an analytical, creative and practical learning.

The next questionnaire tries to identify your personal teaching style that you often use in your teaching activity. There are no good or bad answers, but it is very important to be sincere. We ask you to mark with a cross, in the right column, your answer for each question, depending on your agreement or disagreement with the content of this question. The levels of agreement are the following: 1-very strong disagreement, 2-strong disagreement, 3-disagreement, 4-agreement, 5-strong agreement, 6-very strong agreement.

Items	**v.s.d. 1**	**s.d. 2**	**d. 3**	**a. 4**	**s.a. 5**	**v.s.a. 6**
1. In my teaching activity I emphasize the situations in which I can develop the memory of my students.						
2. When I teach, I emphasize the capacity of students to analyze the information they get (why a thing is happening).						
3. I use in my teaching activity different games (role-playing, jokes…) to make the learning easier.						
4. After I teach e lesson I encourage my students to apply in practice what they learnt in the classroom.						
5. I prefer the teaching situations within my students can reproduce/repeat knowledge they assimilated in the classroom.						
6. I prefer the teaching situations within my students can/may evaluate the problems proposed to/for learning (how, why, how well, and so on).						
7. In my teaching activity I encourage my students to explore new ways and manners of doing things.						
8. In the classroom, I emphasize the practical activities of my pupils (projects, action plans, experiments, practical activities and so on).						
9. The way I use in teaching encourages the reproductive thinking of my students						
10. In my teaching activity I emphasize the capacity of my pupils to explain the way certain processes are happening or how certain things are functioning (how a certain thing is happening).						
11. In my classroom activity I valorise the students' imagination in solving problems (imagine the situations,						

explore new ideas, and so on).						
12. Through my teaching style, I encourage my pupils to implement in practice planes and strategies, which were verified in the classroom.						
13. In my teaching activity, I emphasize the students' capacity to assimilate a bigger volume of information.						
14. I prefer the teaching situations where my students can judge the value of the different given information (different laws, models, methods, and so on).						
15. In my teaching activity, I encourage my pupils to assume different situations and then to think what could happen if things would be as they supposed.						
16. The way I teach encourages my students to use learnt theoretical aspects in solving different problems.						
17. In my teaching activity I facilitate and appreciate the use of memory in the learning process.						
18. In my teaching activity, I emphasize the development of students' capacity of systematically analysis, the logical thinking.						
19. Through my teaching style, I stimulate my students to discover new ways of functioning, principles or laws that can be applied in different situations.						
20. In my teaching activity I encourage my students to experiment in practice things that they know from theory.						
21. In my teaching activity, I encourage my pupils to do and think in a different way than the others, even to try "defying" what it is logical sometimes.						
22. After finishing my classes, I encourage my students to find out practical applications for what they learnt.						
23. The way I organize my teaching stimulates the creative thinking of my pupils.						

Scoring the scale

Teaching style which facilitate the development of **reproductive thinking**	**1, 5, 9, 13, 17**
Teaching style which facilitate the development of **analytical thinking**	**2, 6, 10, 14, 18,**
Teaching style which facilitate the development of **creative thinking**	**3, 7, 11, 15, 19, 21, 23**
Teaching style which facilitate the development of **practical thinking**	**4, 8, 12, 16, 20, 22**

For each item you have to summarize the points according to the levels of agreement or disagreement with the content of the question (from 1 to 6). The interpretation of the score is according to the theory of Sternberg.