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Characteristics of the Communication Between Parents and Students of the Preparatory Class. Barriers, Positive Factors, and Responsibilities of Teachers

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Abstract

Keywords:

parent-children communication;
school-family partnership;
positive learning environment;
positive pedagogy;
student-centred paradigm;
efficient communication.

This article aims to investigate the factors that influence the quality of communication between parents and children. At the same time, we were interested in establishing and highlighting the teacher's responsibilities in order to optimize parent-children communication, during the preparatory grade. The conducted survey reveals the important role of teachers in optimizing parent-children communication and the beneficial role of promoting children's qualities and their positive behaviors. The study reveals the importance of the positive pedagogy practices that encourage teacher-parent-children communication and a positive learning environment at school and at home, the key to success in the student-centered paradigm. According to the discussions with the parents, preparatory graders don't offer parents complete information about what happens at school and often they give them short and sometimes irrelevant information. Teachers have an important role in creating and maintaining a good cooperation with parents during the primary education level. Their role becomes more important when they can help parents communicate better with their children and create a positive climate for communicating and learning together.

Zusammenfassung

Schlüsselworte:

N Eltern-Kinder Kommunikation; Schule-Familie Partnerschaft; positives Lernumfeld;
positive Pädagogik, studierendenzentriertes Paradigma; effiziente Kommunikation.

Dieser Artikel hat zum Ziel die Untersuchung der Faktoren die die Qualität der Kommunikation zwischen Eltern und Kindern beeinflussen. Gleichzeitig waren wir interessiert, die Verantwortungen des Lehrers zu bestimmen und hervorzuheben, um die Kommunikation zwischen Eltern und Kindern während der Vorbereitungsklasse zu optimieren. Die durchgeführte Umfrage zeigt die wichtige Rolle des Lehrers in der Optimierung der Kommunikation zwischen Eltern und Kindern und die positive Rolle der Förderung der Qualitäten der Kinder und des positiven Verhaltens. Die Studie zeigt die Wichtigkeit der positiven pädagogischen Praktiken, die die Kommunikation Lehrer-Eltern-Kinder sowie auch ein positives Lernumfeld in der Schule und zu Hause, der entscheidende Erfolgsfaktor im studierendenzentriertes Paradigma, fördern. Entsprechend den Diskussionen mit den Eltern, bieten Vorbereitungsklassen den Eltern keine umfassenden Informationen über das was in der Schule passiert und sie erhalten oft kurze und manchmal nicht relevante Informationen. Die Lehrer haben eine wichtige Rolle im Aufbau und in der Aufrechterhaltung einer guten Zusammenarbeit mit den Eltern während der Grundschulbildung. Ihre Rolle wird umso wichtiger, wenn sie den Eltern helfen können, besser mit den Kindern zu kommunizieren, und ein positives Umfeld für Kommunikation und gemeinsames Lernen, zu schaffen.

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1. Introduction

The way that parents communicate with their children is decisively influencing their process of development. According

to C. Cuciş (2002, p. 49) family is the "first factor which forms the person in a multidirectional perspective". The education given within the family is very important if we take into account the large period of time that children spend with their families. We consider that the systematic education from school should be

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realized with a strong cooperation between family and school. The start of the elementary school is an important moment for all the educational participants. The preparatory grade is part of the Romanian educational system and could be defined as a year of accommodation and transition from kindergarten to school activities, which are more complex, more serious and more diverse. The majority of children enrolled in the preparatory grade are 6 or 7 years of age. It is the time when parents and teachers meet each other, understand their expectations, their objectives and their action plans regarding children's education. Family and school should always act together considering their common goals. (Răduț-Taciu, M.-D. Bocoș & O. Chiș, coord., 2015, p. 324). At the beginning and during preparatory grade, family should be actively involved in the children's education.

A good family involvement and a consistent partnership between teachers, parents, and the community should be realized at all educational levels. Parents are interested to know information about what children learn at school, about their school results and performances, about their learning preferences. A good cooperation between school and family is advantageous for children, parents and for teachers. (R. Răduț-Taciu, M.-D. Bocoș, O. Chiș (coord.), 2015, p. 324). Preparatory graders are generally participating with enthusiasm at school activities, but sometimes they refuse to share this with their parents. These observations were noted during the discussion with 20 parents that were interested in children's school evolution and school behavior. A good occasion of communication about the child's positive abilities and their authentic learning experiences is common workshops for parents and children. Workshops for parents and preparatory graders could be considered as a good form of learning, cooperating and acting together in an atmosphere based on trust, respect, positive interactions, appreciation and liberty of expression. (M.-D. Bocoș, coord., 2016). The child would be happy to interact with his family and with the teacher and will understand that everyone's efforts are concentrated on his education and well-being.

Interactive activities and student-centered learning activities are considered efficient and should be realized during the parent-children workshops. We consider that when we cooperate well and treat parents as real partners involved in the educational process we can obtain better learning results, we can improve children's motivation and we can teach according to children's individual needs and particularities. The teacher should be the person who strengthens the relation between the child and the parent, by suggesting activities that they can make together, talking about child's preferences and desires that he shared with the teacher and his classmates. He also should talk about the child's positive learning experiences, about his strengths and his qualities.

2. Methodology and research results

This quantitative research used as the main data collection instrument a questionnaire composed of 6 questions. The questionnaire was applied on a sample of 90 parents of the children enrolled in the school year 2015-2016 into the preparatory grade. Questions were opened or semi-opened. The survey conducted was realized in the online environment. The purpose of the study is to establish the efficiency of communication between the parents and the students and the strategies that teachers could apply in order to support parents in communicating and cooperating better with their children.

We were interested to find the answer to the following questions:

- How important is the teacher's role in optimizing the parent-child communication, considering the parent's opinion?
- What are the teacher responsibilities in order to cooperate well with the families and encourage positive relationships between parent and children?

All the respondents are females, aged 23 to 40 years, and their mean age is 30.9 years. Participants live in the following counties from Romania: Alba, Cluj, Constanța, Mureș, and Tulcea. According to their answers to the first question, we can conclude that the majority of respondents have one, two or three children. Just one of the respondents has four children and two of them have more than four children (see Table 1).

Table 1. The description of the participants considering the number of their children

The number of children	Number of participants	Percentage
1 child	25	27.8%
2 children	46	51.1%
3 children	16	17.8%
4 children	1	1.1 %
4 or more than four children	2	2.2 %

Analyzing the answers given by the parents to the question number 2, we can consider that the majority of respondents appreciate they have a good communication with their children, a small part of them consider communicating inefficiently with their child (see Table 2).

Table 2. Parents' opinion regarding the quality of communication with their children

Quality of parent-child communication from parent's perspective	Number of participants	Percentage
Efficient	85	94.4 %
Inefficient	5	5.6%

Question number 3 reveals the main factors that are influencing negatively the communication with children. The majority of respondents stated that their busy schedule and the lack of free time are the factors which negatively influence the communication with their children. A small part of participants considers children aren't interested and sometimes refuse to talk to adults about what happened at school, because of their increased interest in playing and talking with other children. The family's problems are a frequent cause of incomplete or inefficient communication between the parent and the child. One of the respondents appreciates that the children's increased interest for the computer or television has a huge influence on the quality of communication with them (see Table 3).

Table 3. Factors which influence the quality of communication between children and parents

Parent's responses	Number of times that the option was selected	Percentage
The lack of time or busy schedule	51	47.2%
Low interest of the child for talking with the adults.	24	22.2%
More frequent problems of the family	32	26.9%
Computers, television and others devices used by the child for play and fun	1	0.9%

Question number 4 has the role of investigating the opinion of parents regarding the impact of organizing the parent-children workshop in the school environment. We were interested to find out if common activities realized at school can help them communicate better with their children. The majority of the respondents appreciate that these types of activities could offer them the chance to communicate more efficiently with the children. Their answers help us conclude that the simultaneous participation of children and parents to the educational

workshops is a factor that influences positively the communication between parents and children (see Table 4).

Table 4. Impact of organizing parent-children workshops from parent's perspective

Parents' responses	Number of participants	Percentage
Yes, the participation within the workshop could help improve my communication with my children	87	96.7%
No, the participation within the workshop couldn't help improve my communication with my children	3	3.3%
I don't know if the participation within the workshop could help improve my communication with my children	0	0%

Answers given to the question number 5, revealed that all the parents are interested to find out information about the child abilities and preoccupations, more frequently. They consider the teacher should talk to them more often about their children's positive qualities, about their interests and about their abilities or talents.

The last question of the questionnaire has the purpose of investigating if an efficient cooperation with the teacher can help parents improve their communication with the children. All the respondents appreciate that an effective cooperation with the teacher has a positive effect on their communication with children (see Table 5).

Table 5. Parents' opinions regarding the role of the teacher in optimizing parent-child communication

Parents' responses	Number of participants	Percentage
Yes, the teacher has an important role in optimizing parent-child communication	99	98.9%
No, the teacher has no influence on the communication with the child	1	1.1%
I don't know if the teacher has an important role in optimizing parent-child communication	0	0%

3. Conclusions and discussions

The factors that are influencing negatively the communication between parents and children are very diverse, one of the most frequently identified factors are the lack of time of the parents

and their busy schedule. At the same time, teachers could help parents communicate better with their children.

The main responsibilities of teachers are to:

- Observe and note every important aspect of the children's activity;
- Discuss with parents, in a different context, about their children's qualities and preoccupations;
- Organize parent-child workshop in the school environment;
- Talk to parents about the importance of good parent-child communication;
- Encourage the children to talk more often to adults about what happened at school;
- Create a positive learning atmosphere, student-centered learning experiences based on the children's interest and their age-specific particularities;
- Make parents aware of their huge role in the development process and the importance of establishing clear and common goals with school representatives;
- Ask parents for information about the period of time and the manner how they want to be involved in the educational process;
- Suggest activities that can be realized at home and can be beneficial for both the parent and the child;
- Invite parents to get involved into activities, make them aware of the children's progress, about performances in class and about the activities preferred by children;
- Create the context for various communication, adapted to each situation;
- Listen to the parents' opinion, ask them about child's preferred activities and games.

We consider the role of the teacher is very important in optimizing school and family communication, according to all participants. The educational workshops for parents and children could be a context for outlining the child's qualities. In order to offer objective and relevant information to the parent, he should cooperate well with the rest of the teachers that teach the class. At the same time, we can cooperate with the school counselor. Some of the limits of the study are the small number of participants and the fact that only the parents' opinions were

considered. For a good child development, a qualitative cooperation is necessary between the teacher, the parent, and the child. Future investigation directions are: to create and implement educational workshops for parents and children and to test their effects on the consistency of the school - family partnership, investigating teachers' opinions about the effective strategies they use with success, to actively involve families in children's education, and to investigate the child's opinion regarding the activities they would like to do with their parents in the school environment.

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Diana-Crina Marin is currently a teacher at „Pavel Dan” High School Câmpia Turzii and a Doctoral Student at Babeș-Bolyai University. Her research areas are related to discover innovative modalities to consolidate the school-family partnership, considering that the school and family should be real partners in children's education. She is also interested to find the most efficient teaching practices that could be used with success in the educational process

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Possibilities for improving the learning to learn competency of students from technical schools - results of an experimental research

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Abstract

Keywords:

learning to learn competency;
learning difficulties;
critical reflection;
metacognitive reflection;
strategic decisions making;

We made the transition from an industrialized era to an era of knowledge, putting more and more emphasis on the ability to learn effectively, to be flexible and to adapt to the changing society of knowledge. The ability to learn faster and better than others has become crucial for welfare. Since this is one of the formalized eight European key competences, the formal pre-university education should provide a proper learning environment in order to develop this competence to all students. In this study, we propose to evaluate the impact of the intervention program centered on an operational model of development of learning to learn competency in order to diminish the frequency of learning difficulties in studying Romanian language and literature so that the learner reaches the authentic, reflexive and strategic learning. The sample of subjects includes 106 students from technical high schools and colleges whose limits are situated mainly in the direction of efficiently managing the cognitive, metacognitive, emotional and motivational resources. We used an experimental inter-subject design, using sample / unique group technique, as the same single group of students with learning difficulties was pursued at different stages and its evolution had analyzed. Finally, we analyzed the results of research that open wide possibilities for structured pedagogical actions which aim to stimulate critical reflection, metacognitive reflection and strategic decisions making.

Zusammenfassung

Schlüsselworte:

das Lernen lernen Kompetenz;
Lernschwierigkeiten;
kritische Reflexion;
metacognitive Reflexion;
strategische Entscheidungsfindung;

Wir haben den Übergang von einer industrialisierten Zeit zu einer Ära des Wissens gemacht, mit mehr Wert auf die Fähigkeit, effektiv zu lernen, flexibel zu sein und a den Änderungen der Wissensgesellschaft anzupassen. Die Fähigkeit, schneller und besser als die anderen zu lernen ist von entscheidender Bedeutung für das Wohl. Als eine der acht Schlüsselkompetenzen, die auf europäischer Ebene formalisiert ist, muss die formale voruniversitäre Bildung eine förderliche Lernumgebung für die Entwicklung dieser Fähigkeit bei allen Schülern anbieten. In dieser Studie schlagen wir uns vor, die Auswirkungen eines Interventionsprogramms, das auf ein operatives Modell für die Entwicklung der Kompetenz das Lernen lernen konzentriert ist, zu bewerten. Das Interventionsprogramm soll auch die Verringerung der Häufigkeit den Lernschwierigkeiten in rumänischer Sprache und Literatur ursachen, so dass die Schüler nach authentischem, reflektierendem und strategischem Lernen streben. Die Teilnehmer an dieser Studie sind 106 Schüler von Hochschulen und Fachhochschulen deren Grenzen in erster Linie auf eine effiziente Verwaltung den kognitiven, metakognitiven, emotionalen und motivationalen Ressourcen liegen. Wir verwendeten ein experimentelles interindividuelles Design, die Technik der einzigartige Gruppe; ein und dieselbe Gruppe von Schülern mit Lernschwierigkeiten wurde in verschiedenen Phasen verfolgt, um ihr Evolution zu analysieren. Schließlich analysieren wir die Ergebnisse der Forschung, die zahlreiche Möglichkeiten für strukturierte Bildungsaktivitäten eröffnen. Diese Aktivitäten zielen darauf ab, die kritische, metakognitive Reflexion und die strategische Entscheidungsfindung zu stimulieren.

1. Paper Rationale

We made the transition from an industrialized era to an era of knowledge, putting more and more emphasis on the ability to learn effectively, to be flexible and to adapt to changing knowledge society. The ability to learn faster and better than others has become crucial for welfare. The sum of knowledge, skills and attitudes make up an individual's competency. This represents a set of knowledge, skills and attitudes that individuals appropriate them and prove their effectiveness in a particular context leading to results. Competency-based learning is built on a system of teaching and learning that constantly develops students' autonomy and learning to learn ability. Thus, students become real organizers of their own learning and therefore need motivation and supervision, as well as the development of cognitive strategies and goals that will help them learn and reflect on their learning. Learning difficulties are temporary obstacles in learning activities that affect the input of information, their processing and the output of process, both in terms of cognitive and metacognitive, in the case of persons who have basic intellectual capacities in terms of structural and functional integrity. Therefore, developing the learning competency at students with learning difficulties is an important pedagogical stake.

2. Paper theoretical foundation and related literature

Nowadays the concept of competency is a point of reference, with major success in explaining, appreciation, evaluating and adjusting a varied registry of social activities; competency constitutes an individual or collective feature to select, mobilize, combine and use efficiently in a given context, a system, an integrated assembly of knowledge, skills and attitudes and to resolve successfully certain tasks. One of the shorter and more operational definition of competency describes competency as dynamic or potential knowledge that can be mobilized in a large number of different or similar situations, by mobilizing *savoir-dire*, *savoir-faire*, *savoir-être* (Minder, M., 2011). Constructivist approaches and interpretations (Eraut, 1995; Dall'Alba and Sandberg, 1996; Stoof et al., 2002; Sandberg and Pinnington, 2009 apud Ripamonti, S., Scaratti, G., 2011, Andronache, D., 2013) believe that qualitative manifestation of competency is directly influenced and dependent on the contextualized experiences that individuals are living. It is not only the context that can influence the quality of the competency manifestation, but also subjective experiences of individuals, determined by context. Therefore, the definition of competency should be guided by the context and by the area in which it manifests itself. The acquisition, modeling and

development of competencies are an ongoing and graduated process, since, on the one hand, the knowledge and abilities held by an individual evolve, consolidate and enrich continuously and, on the other hand, they are reorganized, restructured and permanently transformed into integrated assemblies, gaining a growing degree of complexity (Peculea, L., 2015). Regarding the educational field, the current direction of education towards the concept of competency is the effect of a deeper reflection on the psychological complexity of knowledge in general and of learning in particular, in order to find new resources to improve the instructional and educational approaches. So, Therefore, there is a great variety of perspectives to define competence which may lead to the risk of confusion among both experts, responsible for the design of educational programs based on training and competence development, but also among practitioners, those who implement competency-based training programs (Andronache, D., Bocoş, M, 2015).

The pedagogical issue of competencies is combined with lifelong education. According to the definition given by the EU Commission (2000), lifelong learning includes all activities directed towards a specific purpose, whether formal or informal, undertaken on an ongoing basis, with the aim to improve the knowledge, skills and competencies. The idea of lifelong learning is comprehensive and covers the entire life of an individual („from the bud and to the grave "). Lifelong learning is defined as „intentional learning where people engage throughout their lives for personal and professional fulfillment and for improving their quality of life" (Dunlap, J.C., Grabinger, S., 2003). Educators play a critical role in the complex process of students' development as lifelong learners.

In this context, learning to learn is an essential tool for lifelong learning. Therefore, education and training have to secure the learning environment in order for this competency to be developed for every citizen. "Learning to learn" is one of the desirable competencies proposed by EU for citizens. The expression "learning to learn" is accompanied by four goals of the present school: learning to know, learning to do, learning to live together, and learning to exist (Delors, J., 2000). Therefore, the Romanian school must become the school of innovative learning and in depth learning (Chiş, V., 2005), a school of forming and developing the competencies. In this paper we choose the definition of the European Union (European Commission, 2006), which supports the existence of three structural dimensions of learning to learn competency: cognitive, metacognitive and emotional and motivational dimensions combined with socio-cultural learning environment. Thus, according to Hoskins and

Fredriksoon (2008), the concept of learning to learn is studied in order to consider an European framework and to test the measurement of the "learning to learn" expression. The definition emphasizes that this combination of capacities must be used in multiple and different contexts by people who have gained them and, thereby, reference is made to the fact that this competency is rather a general one than one related to a specific study discipline. Being a transversal type of competency, the learning to learn competency could not be attached strictly to just one discipline from the curriculum at the pre-university level. Thus, learning to learn competency could be developed either by a self-standing approach, based on learning the techniques, the methods and learning strategies, independent from the traditional disciplines or by means of infusion in disciplinary or inter-disciplinary approaches, therefore contributing to the development of other key-competencies and becoming a result of the latter.

The contemporary school is a school of great individual diversity, which tends to be a school for all - an inclusive school, therefore, the categorization of the learning difficulties should reflect this diversity as well as the diversity of the educational support that students need. Among the causes of learning difficulties, recent specialist studies attribute a great importance to social factors, so that school difficulties are manifested in school requirements and a certain context, the school context, becomes important (Cairo, M., 2008). Students who don't have specific learning difficulties don't manifest specific disorders, but they are slower, less strategic, generalize less knowledge and have more difficulties to connect tasks as a consequence of the fact that they don't transfer learning strategies (Bosson, M., 2008), that metacognitive skills are low level for this students (Borkowski et al., 2000; Fuchs et al., 2003; Wong, 1994; Björklund, 2005) or they are trying to compensate for difficulties, overusing the ones they are most familiar (Saint-Laurent et al., 1995 cited Vianin, P., 2011).

We say that learning is strategic when the learner is conscious about the process of learning and is controlling his/her efforts in using certain personal habits and strategies (Paris, Lipson and Mixson, 1983 apud Vianin, P., 2011). According to Butler (1998), strategic learning involves "a recursive cycle of cognitive activities, including tasks analyze, selection, adaptation or invention of strategies, monitoring performance as well as changing approaches that are needed". Therefore, effective strategic learning should promote all these activities cognitive, as well as motivational and emotional processes. Since many of the learning experiences are unplanned and experiential, the key for an effective learning is reflection that transforms experiences in learning. The reason that some

people are poor reflective learners is because they have a limited repertoire of reflective questions research. Its importance, however, is in providing opportunities to practice them. Reflective learning does not represent what happens with the learner, it represents what the learner does with what happens to him. Reflection helps learners to link new learning experiences to previous ones, so that they can assimilate unknown, particular items, in a holistic and wide-range learning (Jordi, R., 2011).

Learning is enhanced by *critical reflection* which involves "creating the meanings and conceptualizing from experience" (Brockbank and McGill, 1998). As educators, we need to facilitate critical reflection to allow students to go beyond a superficial understanding of their world toward a deeper and meaningful learning. Trilling and Fadel (2009) define critical thinking as "the ability to analyze, interpret, evaluate, summarize and synthesize information" (Pacific Policy Research Center, 2010, p. 7). According to Candy, Harri-Augstein and Thomas (1985), *metacognitive reflection* is "a specific approach which allows students to analyze their own learning process in a systematic manner and to discover their personal hypothesis and constructions of what they are producing as a way for students to identify and question their own strategies." Metacognitive reflection implies the evaluation, monitoring and control of personal cognition or mental functioning (Flavell, 1979; Jost, Kruglanski și Nelson, 1998; Metcalfe și Shimamura, 1994). Reflection offers students the context in which they use their *ability to make decisions* when analyzing their own performance, as well as their colleagues' performance, questioning what they have learnt and making decisions regarding the possible alternatives of the problem in question. Being able to take informed decisions by considering the positive and negative consequences of actions and selecting the most suitable option is an important skill for promoting effective learning. A high level of control can lead to increased motivation and interest, giving students the opportunity to exercise control over their learning and to involve them in decision-making processes (Alexander, Jetton, 2003; Moos, Azevedo, 2008 apud Azevedo, R., Alevin, V., 2013).

3. Methodology

Our work aims to be the result of a research effort whose theoretical and methodological premises will become the starting points for formulating landmarks of the design work regarding the improvement of learning activities to students. Therefore, *the main aim* of this research is to stimulate the development of learning to learn key-competency by means of implementing an intervention program to 11th grade students

with learning difficulties in studying Romanian Language and Literature, so that the learner reaches the authentic, reflexive and strategic, efficient, autonomous/independent learning based on comprehension. The research that we suggest has as a **general objective** the elaboration and implementation of a formative intervention program centred on an operational model of development of learning to learn competency at cognitive, metacognitive and non-cognitive levels, for 11th grade students with learning difficulties in studying Romanian language and literature.

Starting from the identified problems in the analysis of the school results of 11th grade students, and on their learning difficulties, we have elaborated the following **hypothesis of the research**: *The implementation of an educational intervention program to 11th grade students in order to value entirely, in personalized manner and in a socio-constructivist framework the critical reflection, the metacognitive reflection and the strategic decisions making, will diminish the frequency of learning difficulties in studying Romanian language and literature.*

The **sample of subjects** included within the observational research was a number of 186 teachers and 560 students from 8 technical high schools and colleges from Cluj-Napoca. After coding the names of students, interpreting the results of pre-test evidence and analyzing the school results in Romanian language and literature discipline were included in the unique experimental group a sample of 106 students from 11th grade with learning difficulties from three technical high schools and colleges. Thus, the sample of subjects gathers students whose limits are situated mainly in the direction of efficiently managing the cognitive, metacognitive, emotional and motivational resources. So we used an experimental inter-subject design, using sample / unique group technique, as the same single group of students with learning difficulties was pursued at different stages and its evolution had analyzed. One of the first directions of sample content formation was the identification of the themes and contents that were to be included in the experimental approach. The contents were chosen according to the specific program from the curricular area Counseling and Orientation for 11th grade. A second direction of sample content formation was the decision regarding the strategic and reflexive processes and behavior that were to be practiced during the intervention.

The behaviors frequency of using the critical thinking abilities when studying the Romanian language and literature (critical reflection) was measured by **Motivational Strategy Learning Questionnaire (MSLQ)** developed by Pintrich, Smith, Garcia and McKeachie, 1991 (critical thinking subscale) translated

and adapted by us. From the repertoire of methods for assessing metacognition in school learning, available in literature, we selected the scale developed by G. Schraw and RS Dennison (1994) and named by the authors **Metacognitive Awareness Inventory (MAI)** (translated and adapted by A. Glava, 2007), that we decided to use in pre-test and post-test phases of this investigative approach. Another instrument used to measure strategic decisions making was **Metacognitive Awareness of Reading Strategies Inventory (MARS)** created by Mokhtari and Reichard, 2002, problem-solving strategy subscale, translated and adapted by us for measuring the degree of practicing the problem-solving strategies in reading texts. Both of the psychometric qualities of the instruments produced in their original form translated and adapted for the Romanian school population and achieving significant correlations between the variables represented the interest points in the pilot study of instruments.

4. Results

In the pre-test phase we used the analysis of global average scores and on subscales of questionnaires/inventories applied. Thus, we calculated the means of the scores by summing the scores obtained by subjects and calculating the arithmetical mean of the scores for the entire sample of subjects, students with learning difficulties. Also, we were interested in analyzing the way in which the three variables correlate to each other. At the end of the pre-test phase, the results indicated that the experimental group contains an impressive number of students who cannot regulate their strategic and reflective behavior in learning or who can only succeed at a medium level. Descriptive statistical analysis performed indicates that there is a predominance of low scores on metacognitive reflection variable before starting the experiment. Also, students have shown a slightly low level of decisions making abilities regarding learning strategies in reading situations. Subjects were unaware of the intrinsic value of learning, their usefulness, considering they have low effectiveness of reflective and strategic abilities.

For determining the existence of certain differences between the three variables within the experimental group we have used Paired-Samples T Test in order to compare the means. Considering the statistical data, we can assert that the average level of the critical reflection development during the post-experimental stage ($M = 5,02$, $AS = 0,73$) is significantly higher ($t = -18,52$, $df = 105$, p bidirectional $< 0,005$) as opposed to the average level of the critical reflection development during the pre-experimental stage ($M = 4,12$, $AS = 0,67$). Test t data shows that there is a significant difference

between the average scores obtained by the subjects during the pre-testing and post-testing stages. In order to identify the degree of impact of this difference we have calculated Cohen's d coefficient based on test t value for pair samples (having dependent scores). After calculating d Cohen (d

Cohen = 5,79, r = 0,94), we can conclude that there is a strong effect due to our intervention regarding the development of critical reflection during the post-experimental stage as opposed to the pre-experimental stage.

Table 1. The results of test t for the experimental group regarding the critical reflection during the pretesting and posttesting stages

	Paired Samples Test							
	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference Lower	Upper			
CR_pretest & CR_posttest	-0,90000	,50010	,04857	-0,99631	-0,80369	-18,529	105	,000

In the case of metacognitive reflection, we can conclude that the average level of its development during the post-experimental stage (M = 4,05, AS = 0,44) is significantly higher (t = -51,21, df = 105, p bidirectional < 0,005) as opposed to the average level of metacognitive reflection development during the pre-experimental stage (M = 3,02, AS = 0,45). In what concerns the increase of the effect size regarding metacognitive reflection, Cohen's d coefficient, d = 7,03, meaning for a r = 0.96 represents a powerful effect of our intervention.

Table 2. The results of test t for the experimental group regarding the metacognitive reflection during the pretesting and posttesting stages

	Paired Samples Test							
	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference Lower	Upper			
MR_pretest & MR_posttest	-1,02094	,20523	,01993	-1,06047	-,98142	-51,217	105	,000

Corroborating data from descriptive statistical analysis with the T test-pairs values, we can state that the average level of the strategic decisions making process development during the post-experimental stage (M = 4,21, AS = 0,48) is significantly higher (t = -37,95, df = 105, p bidirectional < 0,005) as opposed to the average level of the strategic decisions making process development during the pre-experimental stage (M = 3,10, AS = 0,56). We also mention that in the case of the strategic decisions making development, our intervention had a strongly significant effect (d Cohen = 5,10, r = 0,93).

Table 3. The results of test t for the experimental group regarding the variable of strategic decisions making during the pretesting and posttesting stages

	Paired Samples Test							
	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference Lower	Upper			
SDM_pretest & SDM_posttest	-1,10877	,30074	,02921	-1,16669	-1,05085	-37,958	105	,000

These results demonstrate that during the experimental approach, because of exercising critical reflection, metacognitive reflection and strategic decisions making in complex learning situations, there has been a significant

increase in the incidence of learning behaviors, of cognitive, metacognitive, non-cognitive dimensions, an optimization of awareness, planning, monitoring and control of learning.

Intending to identify the degree of correlation between the three variables regarding the development of learning to learn competence during the post-testing period, we have used Pearson's correlation coefficients. Thus, after the data analysis we can notice that between the three processes contributing to the development of learning to learn competence, there are significant positive correlations ($p < 0,001$). Therefore, the

level of development of critical reflection positively correlates with the level of metacognitive reflection at a $r = 0.78$ and with that of strategic decisions making at a $r = 0.80$. Also, the level of the development of metacognitive reflection positively correlates with the level of strategic decisions making at a $r = 0.76$.

Table 4. Correlations obtained between the three variables in the posttest phase

		Critical reflection	Metacognitive reflection	Strategic decision-making
Critical reflection	Pearson Correlation	1	,786**	,809**
	Sig. (2-tailed)		,000	,000
	N	106	106	106
Metacognitive reflection	Pearson Correlation	,786**	1	,760**
	Sig. (2-tailed)	,000		,000
	N	106	106	106
Strategic decision-making	Pearson Correlation	,809**	,760**	1
	Sig. (2-tailed)	,000	,000	
	N	106	106	106

** . Correlation is significant at the 0.01 level (2-tailed).

In other words, the average values in the applied inventories are significantly higher in posttest for each of the three variables that contribute to the development of learning to learn competency, than the values obtained in applying the same inventories in the pretest phase. In the same vein, the correlations between the three variables are kept positive and become significantly stronger in posttest. Also, we mention that although the correlation coefficients do not have an equal value with 1, although they do not indicate a perfect correlation between the variables, these correlations are significant. Moreover, the development of a competence and its structural components happens in time therefore we expected an unequal correlation between critical reflection, metacognitive reflection and the process of strategic decisions making. Thus, the existence of certain significant correlations between these components, although not perfect, intends to complete the rest of the statistical data and emphasizes the efficiency and functionality of our model for developing the learning to learn competence.

5. Discussions

In the pre-testing stage, analysis of mean scores obtained for the three categories of variables and their correlation with the global scores mean obtained by all subjects at administered inventories allow us to observe that the critical reflection variable is above the group mean (4.12), with a score higher than the mean (3.11), while the metacognitive reflection variable is slightly situated below the group mean (3.02). This means that students' cognitive approaches are more valued in educational practice than the metacognitive ones focusing on observation of the learning process. Scales and subscales data allow us to focus on the trends in the processes of critical reflection, metacognitive reflection and strategic decision making with the advancement in the intervention program. Thus, statistical data was found between the three processes that contribute to the development of learning to learn competency, as between critical reflection, metacognitive reflection and strategic decision-making there are significant, but not strong correlations ($p < 0.001$). To represent the data included in the correlation coefficients, mentioned above, we

realized specific scatter diagrams, stating that there is no evidence of a curvilinear relationship or undesirable influence of aberrant values.

The statistically significant differences between the results obtained from the practice activities during the pre-testing and post-testing stages along with the evolutions emphasized during the formative intervention by means of qualitative and quantitative tools, allow us to appreciate the hypothesis that stood at the basis of this experiment as being validated. Using critical reflection, metacognitive reflection, strategic decisions making and involving subjects in complex learning situations in an intervention program articulated proved their formative efficiency in the sense of activation and optimization learning behaviors and, consequently, a decrease of learning difficulties faced by 11th grade students.

The findings regarding the hypotheses confirmation are based on the comparative results of the experimental group before and after intervention. These results have shown, based on t-test and Cohen's d coefficient, which measures the effect size, the pattern of development of learning to learn competence, proposed by us, is functional, causing superior results to the experimental group in the two points of intervention. Also, based on Pearson correlations, which proved to be positive, significant, it can be concluded that between critical reflection, metacognitive reflection and strategic decisions making, being promoted by the development model of learning to learn competence, there are interrelations and interdependencies. Thus, the students in the experimental group with a high level of critical reflection have a high level of metacognitive reflection and also a high level of strategic decisions making and vice versa, as well as the students with a high level of metacognitive reflection have also a high level of strategic decisions making and vice versa. Positive correlations between the three variables obtained in pre-test phase maintained to post-test phase, even more, they become highly statistically significant. Examining the scatter diagrams on relations between critical reflection and metacognitive reflection, between critical reflection and strategic decision-making and between metacognitive reflection and strategic decision-making, we can say that there is no evidence of a curvilinear relationship or undesirable influence of aberrant values.

Experimental results validate the effectiveness of the model, but we must admit that they aimed only to stimulate critical reflection, metacognitive reflection and strategic decisions making; the generalization of this model based only on these variables is not sufficient to develop the learning to learn competency. Our intervention has allowed each student with

learning difficulties, on the one hand, and the group itself, on the other hand, to evolve in terms of the orientation of cognitive interests, the search for answers to complex questions, the analysis and synthesis of information and opinions, ensuring to understand the new and the learning, achieved in a broad sense as approach that goes beyond school and classroom space in the context of life situations of students with learning difficulties.

6. Conclusions

Intending to improve dysfunctional aspects related to learning processes, the educational research undertaken in the development of learning to learn competence aimed to argue and demonstrate the importance and necessity for experimental intervention focused on developing learning to learn competence to students with learning difficulties from 11th classes in the context of studying the Romanian language and literature. At the same time, we believe that the research carried out is a pleading for shifting the emphasis from teaching to the learning, from informative side to formative one, thus contributing scientifically to improve the educational process. We also believe that the results of the experimental approach, which was to implement an intervention program that values entirely critical reflection, metacognitive reflection and strategic decisions making within a socio-constructivist framework, demonstrate that the development of learning to learn key-competence is a viable solution for improving students' learning, their learning autonomy and responsibility, for optimizing strategic and reflective learning.

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The Influence of Scouting Activities Upon the Students' School Performance. Analysis for Mathematics and the Environment Exploration and Communication in the Romanian language

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Abstract

Keywords:

scouting activities;
the scout method;
school performance;
the after-school program;
young students;
cubs;

Through the present study we wish to show the degree in which the scouting activities, based on the scout method, have a significant positive influence upon the school performance of the first grade pupil at Mathematics and the environment exploration and Communication in the Romanian language. The applicative pedagogic research takes place over one year, following the pupils from the first grade, in the two semesters. In the study are involved: five classes, out of which 41 pupils have enlisted at the scouts, constituting the experimental lot, and their colleagues, 90, being the control lot. The scouts attended weekly meetings and outdoor activities which prove their efficiency according to the statistical processing of the SPSS program.

Zusammenfassung

Schlüsselworte: Pfadfindertätigkeiten;
Pfadfindermethode; schulische Leistung;
Schulhort;
Grundschüler;
Wölfchen

Durch diese Studie möchten wir zeigen, inwiefern die Pfadfindertätigkeiten, die gemäß der Pfadfindermethode aufgebaut sind, einen positiven Einfluss auf die schulische Leistung der Erstklässler in den Fächern Mathematik und Naturkunde und Kommunikation in rumänischer Sprache haben. Die angewandte pädagogische Forschung wird während eines Jahres durchgeführt und beobachtet Erstklässler in den zwei Semestern. In der Analyse nehmen fünf Klassen teil, aus deren Mitgliedern 41 Schüler sich in die Pfadfindergruppe eingeschrieben haben – sie bilden die experimentelle Gruppe. Ihre 90 Kollegen bilden die Kontrollgruppe. Die Pfadfinder haben an wöchentlichen Treffen und an Aktivitäten im Freien teilgenommen, die sich laut der statistischen Bearbeitungen mit der Hilfe der SPSS Programme als wirksam erwiesen haben.

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1. Argument

Sir Robert Baden-Powell, the initiator of the scout movement, said: We try to make these children happy, healthy, helpful citizens. And you will see, should you send your children to the scouting, that we help school. There they are taught in order to succeed at examinations. We teach them to build up a character to succeed in life. But can scouting influence school performance? Through this research we wished to see if the answer to this question is a positive one; if scouting can positively influence young students' performance, students who

have to face many challenges, among which those of adaptation and integration into the formal environment.

The studying of the non-formal curriculum offered by the National Organisation „Romania's Scouts”, especially that of the Cubs age group (7-10 years), in the non-formal and school environment, we think it will highlight the strengths and the opportunities offered through the scout method.

2. The theoretical substantiation

The scout method is a specific pedagogic method which is a part of the non-formal education, having successful results over more

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than 100 years of scouting. In order to reach scouting's purpose, the adult volunteer members (the leaders) use in their activities with the children and young pupils an educational system formed out of 7 combined elements: learning by doing, teamwork, the symbolic frame, the system of personal progress, nature, law and the scout's promise, as well as the adults' support. The scout pedagogy aims six areas of development, which are: physical, intellectual, emotional, social, spiritual and character development. (www.scout.ro)

The National Organisation „Romania's Scouts” has an educational offer which lasts for 16 years (from 5 to 21 years), being a continuous one which is based on an annual non-formal

curriculum adapted to each age group. The activities of the organisation are dedicated to children and young adults, being divided on age groups as follows: 5-7 years, cubs (7-10 years), scouts (11-14 years), explorers (15-18 years), and seniors (18-21 years). We will take into consideration the cubs' age group.

By comparing the school's educational offer for the primary classes and that of the National Organisation “Romania's Scouts” for the cubs' age group, we have noticed similarities between their finalities. Here is a cutting up from The School Syllabus for Communication in the Romanian Language, 1st grade and one from The Intellectual Development Area, from the scout method, in order to highlight this aspect.

Table 1. Cutting up from *Communication in the Romanian language*, First grade (2012)

Formal education		
Grade	Specific competences	Example of learning activities
1 st	2.1. Articulation of statements using accent and intonation according to the communication intention	- exercises – game of diction, songs, rhythmic counting

In the class, in order to achieve these specific competences, the primary teacher suggests a diction game, with an accent on having a correct pronunciation of each word.

Table 2. Cutting up from *The intellectual development – Baloo's territory* (Petrea, E., 2010)

Non-formal education	
Educational objective	Activity
☑ To form and develop vocabulary	- Diction exercises

At the meeting with the scouts, the leader will suggest the cubs a song as a game, which requires the clear and correct pronunciation of each word: Look and watch that little mouse. This song is accompanied by movement. The lyrics are the following: Look and watch that little mouse,/ Look and watch that little mouse,/ It is so big,/ And it is so strong,/ Look and watch that little mouse. The song repeats itself and each time we “cut” the last letter from the final word in the line.

The poem is repeated at different intensities, from a normal intensity speech to a whisper and then to yelling. After that, the poem is repeated from a normal rhythm of speech to more alert and then slower rhythms. In all the speech forms, the children are encouraged to pronounce all the sounds correctly and in full

length. At the end the children say how they felt all through the game.

Through both activities the correct pronunciation of words, the finalities (specific competences, the educational objectives) are followed as being compatible, the scout method supporting and completing the classroom activity.

3. Methodology

The purpose of the research is to establish in what way the activities based on the scout method have a positive significant influence over the school performance of the first grade pupils. Since we considered that the school performance can be influenced also by the young pupil's attending the after-school

program, we have taken this aspect into consideration as well.

Starting with the multiple educational influences that the scouting has in general, and particularly those that can be correlated with the formal education we have shaped the following hypothesis:

The general hypothesis: The capitalization in formal contexts of the learning and forming experiences, lived by the 7/8 year-old children in the non-formal scouting educational activities has a significant influence over the school performances at *Mathematics and the environment exploration* and *Communication in the Romanian language*.

The secondary hypothesis: The attendance at the *after-school* program (extended program) has a moderator effect in the relationship between the attendance of the non-formal scouting activities and the school performance of the first grade pupils at *Mathematics and the environment exploration* and

Communication in the Romanian language.

As it can be seen from the secondary hypothesis, there was a moderation procedure. The moderator variable: attending the *after-school* program intervenes in the relationship between the independent variable: attending the non-formal scouting activities and the dependent variable: the school performance of the first grade pupils.

The type of statistic procedure selected for analysis was the factorial ANOVA, analysis which presumes highlighting the differences between the averages of groups according to their spreading (variation) and not according to the direct difference between them. The conceptual and the statistic models are presented in Figure no. 1 and in Figure no. 2.

The conceptual and the statistic models are presented in Figure no.1 and in Figure no.2.

Figure 1. The conceptual model of the solution used to check the secondary hypothesis

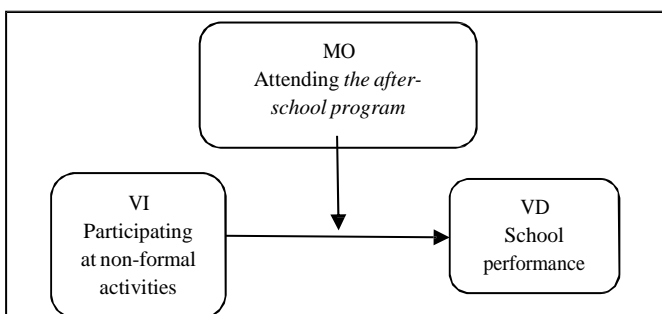
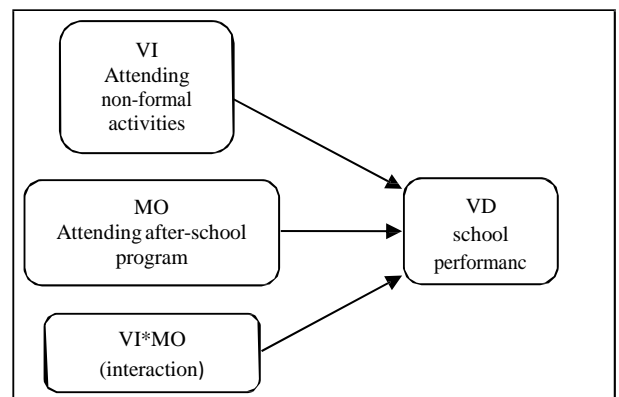


Figure 2. The statistic model of the solution used to check the secondary hypothesis



The experiment is the main method of investigation used in research with the intention of verifying the hypothesis. In the research there was used an experimental inter-subjects design, which means comparing two groups: an experimental one and a control one.

In order to prove its efficiency, the intervention program, the scout method, was used at the experimental lot starting with the preparatory grade, the psycho-pedagogic experiment taking place for 19 months, from December 2014 until June 2016. The performances which are analysed are from the first grade, since only then the pupils start receiving grades.

The experiment was organised in Tîrgu-Mureş County within the activities that took place at the Local Centre Tîrgu-Mureş – The National Organisation Romania’s Scouts, at the Cubs age

group (7-10 years). Two units were created (one unit is a form of scouting organisation in which a group of 20-30 children or young people are active), where the students who wanted to be enlisted within the organisation were randomly distributed.

During the experiment, for three semesters, weekly meetings took place with each unit and also outdoor activities with the other units of cubs, explorers and a summer camp together with all the age groups within the Local Centre Tîrgu-Mureş. During these meetings and activities we followed a convergence between the specific competences suggested in the syllabus for the first grade and the educational objectives specific for the scout method, more precisely the objectives correspondent to the areas of social, intellectual and emotional development,

according to the scouting pedagogy within The Guide of the Leader Cub, by Elena Petrea.

For each meeting and activity, meeting sheets were made (for example Annex 1), these being the equivalent of the activity projects within the formal education.

Another research method that we used is the method of researching curricular documents and of other school documents. The catalogues belonging to each class participating to the study were used, in order to follow the grades obtained by the pupils.

4. The participants' sample

Following the presentations to the parents, they chose to enlist or not their children to the scouts. Therefore a number of 41 students from five classes, constituted the experimental lot, and the other 90 classmates were the control lot. We chose this way of selection as it is a non-formal activity, at which the participation must be volunteer and it is a part of the individual's time, which he chooses to allocate.

Table no. 3, Between-Subjects Factors, highlights the number of participants at the research for each of the factors' values. It is important to have a sufficient number for each value and not to be very big differences between groups.

Table 3. The Between-Subjects Factors Table

Between-Subjects Factors			
		Value Label	N
Scouting	1.00	Yes	41
	2.1	No	90
The schedule frequency: after-school	1.00	Yes	68
	2.00	No	63

In the case of the analysis for *Mathematics and the environment exploration* the Levene Test of the variants equality indicates an uneven dispersion between the subgroups, $p(\text{sig.})=0,267$ indicating the rejection of the un-homogeneity hypothesis.

Table 4. Levene's Test for *Mathematics and the environment exploration*

Levene's Test of Equality of Error Variances ^a			
Dependent Variable: Mathematics and the environment exploration			
F	df1	df2	Sig.
1.332	3	127	.267

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Scouting + After-school + Scouting * After-school

In the case in which p would be lower than 0,05 it would have been significant and the co-linearity phenomenon

The pupils enlisted at the scouts joined, within the National Organisation Romania's Scouts – Local Center Tîrgu-Mureş, the children who were already members of this organisation. We consider this aspect beneficial as one of the scouting principles is "the big one helps the little one", where "the little one" can also be the one who has less experience in scouting, it is not only about age.

We would like to underline the fact that school performance was followed at Mathematics and the environment exploration and Communication in the Romanian language, since at these subjects were observed different grades. For the other subjects, in the majority of cases, the grade was unique, and that was Very well.

Two types of analysis were made, for each of the two subjects. Since the number of participants from the two lots is not equal, the Levene Test was made, bi-variated test in order to establish the degree of similarity between the variations of two samples (dependent and independent), measured on a scale. (www.orznm.ase.ro/spss)

would have appeared, also the variant could not have been estimated. But, in order for p not to be significant, therefore, there is no co-linearity, the variant of the investigated parameters' estimation increases and the trust intervals are higher and higher.

Also in the case of the analysis for *Communication in the Romanian language* the Levene Test of the variants' equality indicates an uneven dispersion between subgroups, $p(sig.)=0,105$ indicating the rejection of the un-homogeneity hypothesis.

Table 5. Levene's Test for *Communication in the Romanian language*

Levene's Test of Equality of Error Variances ^a			
Dependent Variable: Communication in the Romanian language			
F	df1	df2	Sig.
2.090	3	127	.105
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.			
a. Design: Intercept + Scouting + After-school + Scouting * After-school			

5. The content sample

The scouting pedagogy has its own contents, organised and structured according to the specific of maturity and educational needs belonging to each age group, tailored in a symbolic frame, in a story. Regarding the age group that we are discussing, the symbolic frame is *The Jungle Book*, by Rudyard Kipling, the children being able to identify with certain characters from the story, in order to get involved, to progress.

Through the symbolic frame are aimed a series of development areas, each associated with a character from the

Jungle Book. The development areas are made gradually, in the 4 years dedicated to this age group, the children being aware that they are in the territory of the character that rules that area of development.

The standard model of implementation of the symbolic frame means the division of the development areas over 4 years, and we overlapped the research at the first two years, going through the territories of Chill, Baloo and Kaa, which means the areas of social, intellectual and emotional development.

Table 6. The organising of the personal progress system at the Cubs' age group

Year	The first half of the scouting year (October - February)	The second half of the scouting year (March - July)
I	The enlisting time, meetings with parents, the entrance of the little wolf into the Haitic, adjusting	Chill's territory (social development)
II	Baloo's territory (intellectual development)	Kaa's territory (emotional development)
III	Bagheera's territory (physical development)	Hathi's territory (spiritual development)
IV	Akela's territory (character development)	A training period for the passing at the daredevils, the next age branch.

6. The results obtained and discussions/ the analysis of the results

There were two types of analysis made, one for *Mathematics and the environment exploration* and one for *Communication in the Romanian language*, which we will present in turn.

Table 7. The Between-Subjects Effects Test for *Mathematics and the environment exploration*

Tests of Between-Subjects Effects								
Dependent Variable: Mathematics and the environment exploration								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	25.373 ^a	3	8.458	26.670	.000	.387	80.010	1.000
Intercept	615.070	1	615.070	1939.496	.000	.939	1939.496	1.000
Scouting	6.602	1	6.602	20.818	.000	.141	20.818	.995
After-school	4.064	1	4.064	12.816	.000	.092	12.816	.944
Scouting*After-school	7.188	1	7.188	22.666	.000	.151	22.666	.997
Error	40.275	127	.317					
Total	739.000	131						
Corrected Total	65.649	130						

a. R Squared = .387 (Adjusted R Squared = .372)

b. Computed using alpha = .05

The Between-Subjects Effects Test synthesizes the main indicators of the analysis:

The F value=26,670 from the Corrected Model line, which tests the global effect is significant. The effect of participating at the scouting activities cumulated with the *After-school program* influences significantly the pupils' performances at *Mathematics and the environment exploration*.

The F value=20,818 from the Scouting line indicates a significant effect of participating at the scouting activities over the performances at *Mathematics and the environment exploration*. The „eta partial square” value (0,141) indicates an increased value of the effect in the relation between the two variables.

The F value=12,816 from the *After-school program* line indicates a significant effect of participating at the after-school program over the performances at *Mathematics and the environment exploration*. The „eta partial square” value (0,092) indicates a reasonable increase of the effect in the relation between the two variables. The influence of the *After-school program* over the performances at *Mathematics and the environment exploration* is lower than that of participating at scouting activities.

The F value=22,666 from the Scouting * *After-school program* line indicates a cumulated effect of participating at the scouting activities and at the after-school program over the performances at *Mathematics and the environment exploration*. The „eta partial square” value (0,151) indicates a high value of the effect in the relation between the two variables. Therefore, we notice that by introducing the *After-school program* variable, the effect over the performance at *Mathematics and the environment exploration*, the variable grows having a significant moderator effect in the relation between the independent variable (Participating at the scouting activities) and the dependent variable (*Mathematics and the environment exploration*).

Table 8. The Between-Subjects Effects Test for *Communication in the Romanian language*

Tests of Between-Subjects Effects								
Dependent Variable: Communication in the Romanian language								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	23.083 ^a	3	7.694	21.492	.000	.337	64.476	1.000
Intercept	620.587	1	620.587	1733.450	.000	.932	1733.450	1.000
Scouting	6.044	1	6.044	16.883	.000	.117	16.883	.983

After-school	3.629	1	3.629	10.137	.002	.074	10.137	.885
Scouting * After-school	.605	1	6.605	18.450	.000	.127	18.450	.989
Error	45.467	127	.358					
Total	751.000	131						
Corrected Total	68.550	130						

a. R Squared = .337 (Adjusted R Squared = .321)

b. Computed using alpha = .05

The Between-Subjects Effects Test synthesizes the main indicators of the analysis:

The F value=21,492 from the Corrected Model line, which tests the global effect is significant. The effect of participating at the scouting activities cumulated with the *After-school program* influences significantly the pupils' performances at *Communication in the Romanian language*.

The F value=16,883 from the Scouting line indicates a significant effect of participating at the scouting activities over the performances at *Communication in the Romanian language*. The „eta partial square” value (0,117) indicates an increased value of the effect in the relation between the two variables.

The F value=10,137 from the *After-school program* line indicates a significant effect of participating at the after school program over the performances from *Communication in the Romanian language*. The „eta partial square” value (0,074) indicates a reasonable increase of the effect in the relation between the two variables. The influence of the *After-school program* over the performances at *Communication in the Romanian language* is lower than that in the case of participating at scouting activities.

The F value=18,450 from the Scouting * line, the *After-school program* indicates a significant cumulated effect of participating at the scouting activities and at the after school program over the performances at *Communication in the Romanian language*. The „eta partial square” value (0,127) indicates an increased value of the effect in the relation between the two variables. Therefore, we notice that by introducing the *After-school program* variable the effect over the performance at *Communication in the Romanian language* increases the variable having a significant moderator effect in the relation between the independent variable (Participating at scouting activities) and the dependent variable (*Communication in the Romanian language*).

7. Conclusions

This study contributes to the highlighting of positive effects that the non-formal education, especially scouting, has over the young pupil concerning school performance. Testing the hypothesis of the research we noticed that the non-formal scouting educational activities have a significant positive influence over the school performances at Mathematics and the environment exploration and Communication in the Romanian language at the first grade pupils, and attending the after-school has a moderator effect in the relation between the two variables (the independent variable – participating at the scouting activities and the dependent variable – the two school subjects).

The grades obtained by the pupils can be determined by other influences as well, but in this research there were similarities found between the finalities of the two forms of education; even more, there was a convergence between the finalities through the activities suggested by the scouts.

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The Intellectual Activation of the Students – Paradigm of University Education. The Theoretical Approach of the Concepts

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Abstract

Keywords:

intellectual activity;
style of intellectual activity;
techniques of intellectual activity;
strategies of intellectual activity;

The present article proposes a theoretical foray into the issues of the intellectual activity of students. We have defined the techniques of intellectual activity as being the instruments with the help of which we accumulate and process the information coming from various areas of knowledge. However, intellectual activity does not imply only the assimilation of such information, but also connecting it to information previously assimilated, and its transfer towards other areas; it implies intellectual restructuring and complex cognitive investments. We have presented several taxonomies of intellectual activity techniques, with short considerations on them. We were also concerned with the study of the style of intellectual activity and we have considered it to be the specific, personal, particular way through which an individual makes use of and develops methods and techniques for intellectual work, perfecting himself in cognitive and metacognitive terms. We have placed a special focus on strategies of intellectual activity as well. Depending on the conditions of the development, we find strategies involved in the activity of the students in a formal context and individual study or intellectual work strategies involved in the activity carried out by students at home or in other contexts that develop a non-formal and informal type of education (individual study).

Out of these strategies we have analyzed following of the teacher's lecture and the taking of notes. We advocate the acquisition of scientifically validated strategies early on, for once acquired they will become productive in the later development of the individual.

Zusammenfassung

Schlüsselworte:

geistige Aktivität;
Stil der intellektuellen Tätigkeit;
Techniken der geistigen Aktivität;
Strategien für geistige Tätigkeit

Dieser Artikel schlägt einen theoretischen Einblick ins Thema der geistigen Aktivität den Studenten. Wir haben die Techniken der geistigen Aktivität als Instrumente, wodurch wir Informationen erhielt aus verschiedenen Bereichen des Wissens sammeln und verarbeiten, definiert. Aber die geistige Aktivität beinhaltet nicht nur Assimilation von diesen Informationen, sondern auch ihre Verbindung mit denen erhielt bisher und ihre Übertragung auf anderen Bereichen, verlangt intellektuellen Umbesetzungen und komplexe kognitive Investitionen. Wir stellten mehrere Taxonomien den Techniken der geistigen Aktivität vor, mit kurzen Überlegungen zu ihnen. Wir waren besorgt auch mit dem Studium von dem Stil der intellektuellen Aktivität und wir betrachteten es als spezifische und bestimmte Art und Weise, durch die eine Einzelperson Methoden und Techniken von geistigen Aktivität verwendet und entwickelt und seine kognitive und metakognitive Fähigkeiten perfektioniert. Besonderer Aufmerksamkeit haben wir den Strategien den geistigen Aktivität gegeben. Je nach Bedingungen der Durchführung finden wir Strategien beteiligten in der Aktivität den Studenten in formalen Kontext und Selbststudium oder Strategien der intellektuellen Arbeit beteiligt in der Aktivität geleistet von den Studenten zu Hause oder in anderen Kontexten, die die informellen Bildung entwickelt (Selbststudium).

Von diesen Strategien haben wir die Verfolgung des Lehrers Darstellung und Notizen nehmen untersucht. Wir plädieren für den Erwerb von validierten wissenschaftlichen Strategien, so früh wie möglich, weil einmal gelernt, diese werden produktiv für die weitere Entwicklung des Individuums.

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1. Techniques of intellectual activity

The major changes we are witnessing in the area of university education lead to the necessity of building a coherent university

pedagogy, one strongly anchored in the academic realities. The paradigms in university education focus first on the priority of the formative in relation to the informative within the two types

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of complementary activities in the academic community – the teaching activities and those of scientific research. Then it is necessary to crossover from a pedagogy of listening to an education of change and emancipation of the one being educated, to intensify the mutual relations between the university and the community, and, last but not least, **to place the student in the center of the university teaching activities**. This last paradigm has its cornerstone in the intellectual, the emotional-volitional, and the physical activation of the students. The activation must be seen not just as a way to optimize the informative-educative activities, but also as an opportunity for the development of intellectual activity techniques among the students, and our efforts in the present study are focused in this direction. (Ionescu, 2003).

Mastering the methods and techniques of intellectual activity is the prerequisite that provides the individual with a better adaptation to the transformations that take place in the contemporary society. The role of the school is, par excellence, to ensure the integral development of the personalities of the students, with an accent on the intellectual component. Its structure contains precisely the intellectual activity, namely certain techniques that are indispensable to its evolution. The familiarization of the students with these techniques involves teaching them how exactly to learn. 'Learning how to learn' is not only a matter of technique, of formation of skills for the assimilation and organization of knowledge, but also a matter of internal tension, of organization of studies, of channeling these towards the area of interest for each individual.

It is necessary that we first clarify the concepts that we will discuss. The Explanatory Dictionary of the Romanian Language gives the following definitions for the concepts addressed: techniques are an array of procedures and skills used in a field of activity, in our case the intellectual one. Methods are procedures or an array of procedures used in the achievement of a purpose. Intellectual activity is the activity that belongs to the intellect, to the mind, a work that is oriented towards a certain purpose. Thus we can consider that the methods and techniques of intellectual work are an array of procedures used in intellectual activity.

From the definitions found in the scientific literature we note that the intellectual work is 'an array of prescriptions regarding the hygiene, the organization, and the methodology of intellectual work, developed with the purpose of reducing the effort and increasing the efficiency of this work' (Lăzărescu, 1973, p.37). These prescriptions are rules that can be applied in the case of the organization and the methodology of intellectual work, but we consider that the intellectual activity is a particularly complex activity that involves stages, actions, and

that cannot be reduced to the aspects in the abovementioned definition.

The technique of intellectual work includes thinking, with its entire cognitive, affective and motivational wealth, includes reason, as a restriction in the endless freedom of thought, and the intellect, with its logical and analytical power. We note the aesthetic approach to the definition, as well as the emergence of the keywords: thinking, reason, intellect.

'Intellectual work implies certain actional-instrumental techniques that are indispensable to its functioning at a high level efficiency' (Nicola, 1994, p. 132). In the definition of I. Nicola, we appreciate the fact that the accent in intellectual work is placed on techniques seen not only as some instruments, but also as intellectual activities, as possibilities of taking action with the purpose of enhancing its efficiency.

Intellectual work is the activity of producing, creating or maintaining of the facets pertaining to the intellectual or knowledge area: culture, science, education etc.' (Bernat, 2003, p.133). We note from the definition the fact that intellectual activity is an activity which involves cognitive effort and determines the development of imagination and creativity.

The instruments of intellectual work are reading and writing.

The definition that we will be working with in our endeavour is the following: **the techniques of intellectual activity as being the instruments with the help of which we accumulate and process the information coming from various areas of knowledge. However, intellectual activity does not imply only the assimilation of such information, but also connecting it to information previously assimilated, and its transfer towards other areas; it implies intellectual restructuring and complex cognitive investments. As such, we consider that we are entitled to rather talk about strategies of intellectual work in the activity of pupils and students.**

The acquirement of intellectual activity techniques cannot be reduced to the mere memorization of some rules of intellectual and practical activity (the two aspects being correlated). Intellectual activity requires certain operations undertaken systematically, successively, that is to say it requires the formation of certain abilities. We note that these abilities for intellectual work must be acquired/formed as soon as possible, even starting with the curricular cycle of fundamental acquisitions or with the curricular cycle of development. Research notes that, for example, most of the subjects (students of the VIth grade) of a study carried out do not know how exactly to learn, how to approach a study material, regardless of its nature (prose or poetry), regardless of the subject they are studying for. They stated that in the Ist grade the teacher indicated

that they should 'read the poem at home as many times as it takes to be able to recite it with the book closed'. Is this an efficient intellectual work technique?

For these reasons we advocate the acquisition of scientifically validated strategies early on, for once acquired they will become productive in the later development of the individual.

2. The style of intellectual work

The employment of intellectual work strategies leads to the outlining of **the personal/individual style of intellectual activity**.

We define **the style of intellectual activity as being the specific, personal, particular way through which an individual makes use of and develops methods and techniques for intellectual work, perfecting himself in cognitive and metacognitive terms**. The style of intellectual work is influenced by the educational paradigms capitalized on in a certain historical era.

Generally speaking, in a style of intellectual work an amalgamation of various methods and techniques of intellectual work is predominant, and that is why we talk about **strategies of intellectual work**. The literature discusses a habitual style of intellectual work (operates with a certain type of reasoning, a known one) or a creative/original one (experiments with different ways or strategies of solving the tasks). There is a discussion about a style of intellectual work focused on a single manner of approaching the study material and a style in which there is a concurrence of varied methods and techniques of intellectual work. We encounter persons with an intellectual work style that develops permanent learning and that is characterized through the tendency of always learning, considering the acquired knowledge to be insufficient. We are also talking about general styles of intellectual work (common to several subject areas and several situations) and particular styles (specific to a subject or certain situations).

In the circumstances of contemporary society, we opt for, especially in the case of students, a prospective (anticipative, foreshadowing), proactive intellectual work style that will employ modern, fast, and efficient methods and techniques of intellectual work, based on the personality profile, in order to successfully answer the opportunities that emerge on the path of personal development.

3. The classification of intellectual activity techniques

The bibliography read (Dumitru, 2000) offers us a large array of taxonomies of the 'techniques of intellectual work', based on their purpose: namely, that of information, of observation, of research, of processing, and of creation; based on curricular areas: there are general techniques, applicable regardless of the type of intellectual activity undertaken, and specific ones, adapted to a subject or object of learning.

It is known that the diversity of methods and techniques of intellectual work encompass: heuristic techniques, algorithmic techniques, which once acquired can be perfected; starting from techniques specific to the action of unmediated exploration or unmediated knowledge of reality, to the actual transformation of it, techniques of implementation in the actional component, from techniques of administering and managing of the information, to those of conveying or expressing ideas, from techniques of creative capitalizing of the information into personal, original products, to those of evaluation and auto-evaluation, from techniques of individual (independent) work to those of interdependent work (group work, teamwork), from methods imposed by the particularities of a formal education to those particular to an informal education. (P. Muresan, 1990)

The most significant methods and techniques of intellectual work in the general category would be the following (according to I. Nicola, 1994):

- The usage of special learning processes, based on the content and complexity of the task and the particularities of the person studying;
- The usage of auxiliary instruments for the purpose of solving learning tasks: dictionaries, encyclopaedias, internet, mass-media;
- The development of abilities for efficient usage of the documentary research sources and for the elaboration of outlines, worksheets, abstracts, summaries, papers, essays, portfolios;
- The familiarization with the particularities and requirements of the observation and experimentation technique, with the ability to observe and investigate the phenomena of reality;
- The creation of correlations between the knowledge assimilated through the various learning subjects; we are talking about intra-disciplinary, inter-disciplinary, trans-disciplinary correlations;
- The permanent employment of strategies for developing the creativity in solving learning tasks.

Considering some of the abovementioned techniques as being valid, we cannot fail to highlight the fact that some of the statements of I. Nicola are sufficiently general to be able to function as definitions of the concept at hand.

A different taxonomy is that realized by L. Țopa (coord., 1979):

- The development of the ability to organize a daily routine;
- Learning various methods of reading;
- Gaining knowledge through the concrete-abstract-concrete cycle;
- The methods that support the learning and self-learning process;
- Promoting learning through discovery and research.

We note a lack of unity concerning the terminology used in the abovementioned taxonomy; the techniques of intellectual work are not explicitly worded, having apparently a general character: methods, learning, development of abilities, etc.

P. Mureșan (1990) considers as part of the techniques of intellectual work the following:

- Techniques of reading, identifying and cataloguing information;
- Strategies for analysing, ordering, classification, combination, interpretation and development of information;
- Comparative and multiple-criteria analysis of points of view, of perspectives, of approaches, of types of organizing the information;
- Methods of research, analysis of alternative languages;
- The usage of interactive systems and computers, etc. and proposes the following taxonomy:

1. Methods and techniques of informing, researching, processing, storing of information and knowledge

1.1 Exploration and fast identification of information sources

1.2 Selection and multiple-criteria structuring of information

1.3 Techniques for simple, selective or fast reading

1.4 Techniques for consulting dictionaries, handouts, encyclopaedias and for efficiently working with them

1.5 Selection and codification of information

1.6 Analysis, synthesis, structuring and essentializing of information into concepts, models, hypothetical structures, schemes, logical plans, etc.

1.7 Usage of programming languages, of the Internet, creation of data entries and electronic databases

2. Methods and techniques of learning

2.1 Understanding, structuring and assimilation of knowledge

2.2 Operating with new knowledge and making associations and transfers

2.3 The realization of abstracts, summaries, essays, reviews, research plans, portfolios, etc.

3. Methods and techniques of researching (exploration, investigation), experimentation and development of knowledge

3.1 Personal investigation

3.2 Techniques of observation and experimentation

3.3 Developing hypothesis

3.4 Questioning

3.5 Task solving

3.6 Organizing experiments

3.7 Estimating options and alternatives

3.8 Issuing predictions and weighing chances

3.9 Building of hypothetical reasoning and strategies of probabilistic thinking

3.10 Techniques of analysing, processing, validation and statistical interpretation of data

4. Methods, techniques and procedures of creativity

4.1 Brainstorming

4.2 SINELG - The interactive system of note-taking for the streamlining of reading and thinking

4.3 Synectics

4.4 Philips 6/6

4.5 Clustering

4.6 Panel discussion

4.7 Problematization

4.8 Know/ Want to know/ Learned

4.9 Cubing

4.10 Jigsaw

4.11 Gallery walk

The taxonomy put forth by Pavel Mureșan is somewhat more complex, probably due to its proximity, chronologically speaking, to present times, and thus adapted to the transformations that have taken place meanwhile in the field.

We will opt for a dichotomy of strategies of intellectual work **based on the conditions in which the event takes place: strategies involved in the activity of the students in a formal context and individual study or intellectual work strategies involved in the activity carried out by students at home or in other contexts that develop a non-formal and informal type of education (individual study).**

4. Strategies of intellectual activity in a formal context

In what follows, we will elaborate on the strategies of intellectual work involved in the activity of students in a formal context.

In a formal context, the intellectual activity of the student is especially complex and involves:

Following the teacher's lecture. The teacher's lecture involves verbal and nonverbal communication, namely the interaction between teacher and student, and at the same time the transmission and exchange of messages between them. Following the teacher's lecture involves self-preparation for its reception. It is known that the activities take place consecutively, in a logical manner, building together a unit of information, of knowledge, of skills, of abilities, the lack of one of these interrupting the creation process of the entire unit and making its understanding impossible going forward. It is indispensable that the student be present for each sequence with the previous structures having been very well assimilated and integrated in his own cognitive system. To the intellectual self-preparation, an emotional/psychological self-preparation is added. The knowledge of previous sequences creates a state of psychic comfort, an emotional equilibrium and, together with internal tensions caused by problematization, they lead to the establishment of a motivational framework optimal to personal development, especially from an intellectual perspective. (Linksman, 1996)

At this point in time, focusing the student's attention becomes absolutely necessary. The fact that during a lecture focusing becomes an effort for anyone is a truism. The ability of rationally distributing attention to the essential points of a lecture must be cultivated from early on.

During the teacher's oral lecture, the student **receives, selects, decodes and recodes the information presented. He also tries to understand, structure and assimilate information, to**

transform it into concepts, models, hypothetical structures, schemes, logical plans, subsequently operating with new knowledge and making associations and transfers, integrating them, in a flexible manner, in his own cognitive schemes.

Taking notes based on the teacher's lecture is a skill of intellectual activity and represents not only an indispensable requirement of ulterior individual study, but also an efficient procedure of focusing the attention. (Carter, Bishop, & Lyman, 1998).

The taking of notes is the activity through which we recall information when we are listening to a speaker. The notes taken represent an important alternative source for studying, along with the textbook and the relevant bibliography. The functions of note-taking are multiple:

- It represents an external method for storing information. Information cannot be completely memorized after a presentation or a group discussion, but once written down, it can always be accessed and reviewed. (Băban, 2001)
- It facilitates the decoding and updating of the material.
- It allows the basic structuring of the material while it is being taught.

Thus, note-taking is an ability that involves the employment of external methods of storing information which enables the encoding and updating of the material and permits a structuring of it right as it is being taught. (Golu, 1983).

The effectiveness of notes depends on their type. The most useful are the notes that are a relatively complete and comprehensive depiction of the presented material, containing summaries of the main ideas and that provide details and personal elaborations based on the given material.

Notes can be taken in various ways, but generally two options are used: A first possibility implies a two-step procedure: recording and processing. A second possibility refers to the concurrent recording and processing of the information. **A couple of rules that can be of use in streamlining the recording are: abbreviations, schemes, numbering, highlighting key words, highlighting the content with the use of the layout, using colours, plans, graphs, examples, etc.**

Research shows that over 60% of students meet with difficulties when reading their own notes. It often happens that this activity, which is essential to the effectiveness of learning, gets transformed into an exercise of massive and tiring mechanical recording that is unselective and uncritical, non-evaluative and unsystematic. Research has concluded that most of the students only succeed in recording 50% of the essential

problems and ideas presented to them, instead recording over 60% of the more or less significant details.

We distinguish, generally speaking, between several types of notes: summarizing, reproducing, enumerating, schematic, through paraphrasing, graphic organizers, etc. (Fischbein, 1973).

Experience shows that when it comes to the issue of note-taking it is absolutely necessary to master if not a system then at least a practical method for a correct and essentialized recording of the material heard or read, a method appropriate for the subject area broached. In any activity of note-taking the basis can be a simple, unified, and legible record, with classifications and systematizations or special differentiations of the primary and secondary ideas, of the different types of content.

Within the activities there are various **situations/learning contexts in which the student processes information**, or there are moments of **personal reflection**: during the assessment of fellow students, in moments of reinforcement and recapitulation, etc. What is important is that these situations be properly exploited by the student.

The moments of the activities offer students the opportunity of **first acquiring and then practising and developing various reading techniques**.

Furthermore, during the sequences of transmission and acquirement of knowledge, **the students familiarize themselves with the particularities and requirements of the observation and experimentation technique, with the ability to observe and investigate the phenomena of reality, subsequently actually undergoing activities of research, realizing experiments, etc.** The intellectual activity during these experiments generally entails the following strategy: confronting students with a problem, issuing hypotheses, developing a research plan, implementing the research plan, performing the experiment, recording the data and the results of the experiment,

drawing up conclusions and comparing them to the hypotheses in order to establish whether it has been confirmed or not.

The intellectual activity that takes place in a formal context specifically implies **the employment of strategies of analysis, of sorting, of classification, of combination, of interpretation, and of development of information and knowledge, the permanent employment of creative strategies in solving learning tasks.**

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Using the Cornell System for Notetaking at Pedagogical High Schools Students

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Abstract

Keywords:

Pedagogical disciplines;
improving school performances;
skill for individual studying;
note-taking subskill;
Cornell system

This article intends to establish to what extent introducing a modern note-taking technique (Cornell system), as an instrument in forming and developing the skill to study individually, can lead to an increase in the school performances of the students from pedagogical high schools. In this accomplished research, designed to be conducted as a psycho-pedagogical experiment, we have developed the experimental situation with the following phases: the observational phase, baseline data gathering / pre-experimental phase; the proper experimental phase, with a developmental purpose; the final phase, results assessment, the post-experimental phase or post-test. The quantitative and qualitative interpretation of the data obtained through the analysis of the tests and of the notes taken by the students proves that the usage of the Cornell system is considered an appropriate intellectual exercise and also a challenging element for pupils, from a cognitive standpoint. Note-taking using the Cornell system leads to the development of the skill to study individually and contributes to: the improvement of the school performances of the students from the pedagogical high schools at the "Classroom management" discipline, and the development of an effective individual studying style.

Zusammenfassung

Schlüsselworte:

pädagogische Fächer;
Verbesserung der Schulleistungen;
Individuelles Studium/Selbststudium;
Notiznehmen;
Cornell System;

Die vorliegende Arbeit möchte feststellen, wie weit die Einsetzung vom Notiznehmen (Cornell System) als Instrument für die Bildung und Entwicklung des Selbststudiums zur Erhöhung der Schulleistungen der Schülern aus pädagogischen Schulen beitragen könnte.

Im Rahmen dieser pädagogischen Forschung wurden 30 Schullehrer sowohl Frauen als auch Männern, von verschiedenen Altersgruppen und mit unterschiedlicher Erfahrung im Arbeitsfeld (Arbeitserfahrung zwischen 2 und 20 Jahre) die unterschiedliche Fächer unterrichten, vom Gymnasium „Horea, Cloșca și Crișan“, aus Abrud eingestzt.

Die Zahl der in der Forschung eingesetzten Schülern (sowohl in der Feststellungsphase als auch bei der Experimentphase selbst und Endphase) beläuft sich auf 29 Schüler, aus der elften Klasse, Fachrichtung Pädagogie, Spezialisierung Lehrer-Erzieher, vom Gymnasium Liceul „Horea, Cloșca și Crișan“, aus Abrud. Die angewandten Methoden könnten folglich gruppiert werden : Methoden für die Untersuchung der Daten aus dem Lebenslauf und anderer Schuldokumenten, Methoden für die Sammlung der Daten (Umfrage führen), Methode der pädagogischen Experiments, Methode der Prüfungen und anderer schriftlichen Bewertungen, Methode der Messung von Forschungsdaten.

Im Rahmen der als einer psychopädagogischer Experiment durchgeführten Forschung, haben wir für das Experimen folgende Phasen entwickelt : die Feststellungsphase, die Phase der Datensammlung/die vor dem Experiment selbst; die Versuchsphase selbst, für Bildungszwecke; die Endphase, die Bewertung von Ergebnissen und die nach der Bewertungsphase oder die Postbewertung. Die quantitative und qualitative Bewertung der Daten durch das Prüfen von den Arbeiten und Notizen der Schülern beweist, daß die Anwendung des Cornellsystems eine nützliche und intellektuelle Übung als auch eine kognitive Herausforderung für die Schüler ist. Das Notiznehmen mit Hilfe des Cornellsystems führt zur Entwicklung der Fähigkeiten des Selbststudiums und trägt zur Verbsserung der Schulleistungen der Schülern aus den pädagogischen Gymnasien im Fach: „Das Management/die Leitung der Schulstunden“ und Entwicklung einer eigenen und effizienten Methode des Selbstlernens.

1. Introduction

The way that parents communicate with their children is decisively influencing their process of development. According to C. Cucuș (2002, p. 49)

Individual study, like any other complex human activity, must be learned. The individual learning includes a certain technique, implies certain organizing, assimilation and control skills that are developed through imitation, guidance, exercise.

In 2013, Bocoș, M. was referring to the fact that the active student is that student that is aware that “learning to learn” new cognitive strategies does not require just the preparation of an appropriate fertile field for the seeding, sprouting and blossoming of new knowledge, but also a permanent and systemic restructuring of the existing acquisitions and cognitive schemas, a continuous reorganization and hierarchy of these acquisitions and schemas, in order to give meaning to the knowledge, to possess declarative, procedural and strategic knowledge; also, it is about adopting a metacognitive attitude in learning and about being interested in perfecting one’s own metacognitive strategies (M.-D. Bocoș, 2013).

Researches have noticed that most of the students and courses participants manage to write down only 50% of the essential problems and ideas that are presented to them, but, in turn, they record over 60% of the more or less significant details. More often than not there appears day-dreaming, the flow of ideas and other pursuits that distract one’s attention.

1. Methodology elements, sampling and research design

The purpose that we have assumed in the present research was to establish to what extent introducing a modern note-taking technique (Cornell system) – as an instrument in forming and developing the skill to study individually – can lead to an increase of the school performances of the students from pedagogical high schools.

During the unfolding of the investigative activity we started from the following **research objectives**:

- analysis of the learning activity of the students during Pedagogy classes, (Classroom Management);
- investigating the skill for individual studying and the subskill of note-taking in students.

Independent variable: using the Cornell system for note-taking at the Classroom management discipline.

Dependent variables: the quality of the individual studying style, the level of school performances.

This pedagogical research has involved a **sample** of 30 teachers from the “Horea, Cloșca and Crișan” High School, Abrud, Romania, males and females, with a diverse distribution regarding age and work experience in the field (seniority in the field of education being between 2 and over 20 years) and teaching various specialities. The teachers sample was established through stratified random sampling.

We have chosen the within-subjects experimental design, which implies following the same group during all the stages of the experiment. The students involved in this investigative endeavour (both in the observational and the proper experimental phases, and also in the final phase) were 29 students from the eleventh grade, pedagogical profile, primary-school teacher - educator specialty, from the “Horea, Cloșca and Crișan” High School, Abrud, Romania.

The used methods can be classified in the following manner: research methods for the curricular documents and for other school-related documents, methods used for data gathering (survey based on questionnaires), pedagogical experiment method, testing method and other means of written assessment, research data measuring methods.

In this accomplished research, designed to be conducted as a psycho-pedagogical experiment, we have developed the experimental situation with the following phases:

- the observational phase, for baseline data gathering / pre-experimental phase;
- the proper experimental phase, with a developmental purpose;
- the final phase, for results assessment, the post-experimental phase or posttest.

The observational phase had in sight the following objectives:

- analysing how students study individually in general and specifically at Pedagogy discipline;
- inquiring how students take notes and use them in learning;
- analysing how teachers stimulate individual studying and the personal reflection of the students during classes.

The conclusions that emerge directly are the following: students identify individual studying with the studying done at home. In most of the cases, they assign 1-2 hours per day for individual studying, time that, in my opinion, could be considered insufficient. At the disciplines that they consider the

most important, students prefer reading the lessons as the main form of studying. The time assigned for individual studying at Pedagogy is 50%-75% of the time assigned to individual studying. Regarding the studying style at Pedagogy, students prefer reading the lessons. Students usually take notes, consider them important, but they do not have a specific technique that they use constantly.

As a conclusion after applying the questionnaire to the teachers we can assert that:

- teachers consider that the note-taking process plays an important role in the students' learning activity;
- the questioned teachers stimulate the individual studying in students and the personal reflection of these students during classes;
- although they ask students to take notes, the questioned teachers do not mention that they would use specific techniques for the development of this skill.

For this research phase we have pursued the following operational objectives:

- to analyse how students take notes and how they use them during pedagogy classes;
- to establish if the differences between the results obtained in the pretest phase and those obtained in the other phases of the experiment are statistically significant, regarding the level of school performance at the Classroom management discipline.

For the pretest administration phase we have pursued the following operational objectives:

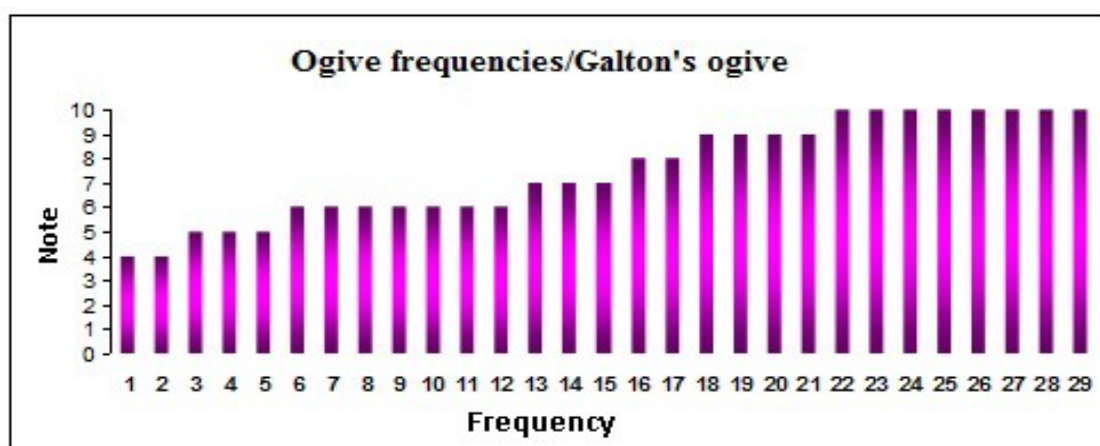
- to analyse how students take notes and how they use them during pedagogy classes;
- to establish if the differences between the results obtained in the pretest phase and those obtained in the other phases of the experiment are statistically significant, regarding the level of school performance at the Classroom management discipline.

During the first hour when the experiment began, some suggestions and general rules for note-taking were presented to the students, rules that they were asked to write down and apply during classes and the Cornell system for note-taking and versions of this system were also presented. The theoretical aspects were also detailed: construction, structure, advantages, disadvantages, the importance of note-taking through Cornell system, and the students were asked to take notes at the Classroom management course using this system.

During the post-experimental phase was used the same methodology as in the pretest sequence.

The data obtained by students after posttest administration are graphically represented below, using the frequencies' ogive / Galton's ogive.

Figure 1. The data obtained by students after posttest administration



Statistical significance, in the phase of the difference between the mean obtained by the students following the administration of the assessment test in the pretest phase and the final assessment test (posttest).

In our case (pretest – posttest), we consider the two students samples, with volumes of $n_1 = 29$ and $n_2 = 29$ respectively, with the values of the means $m_1 = 5.62$ and $m_2 = 7.51$ respectively, for which the sums of squares have the following values:

$$\sum (x - m_1)^2 = 114.83 \text{ and } \sum (x - m_2)^2 = 125.25.$$

We intend to establish if the difference between means is statistically significant.

The value of the t ratio will be:

$$t = \frac{|m_1 - m_2|}{\sqrt{\frac{\frac{1}{n_1} + \frac{1}{n_2}}{29 + 29}}} = \frac{|5.62 - 7.51|}{\sqrt{\frac{4.28}{1}}} = \frac{1.89}{0.53} = 3.56$$

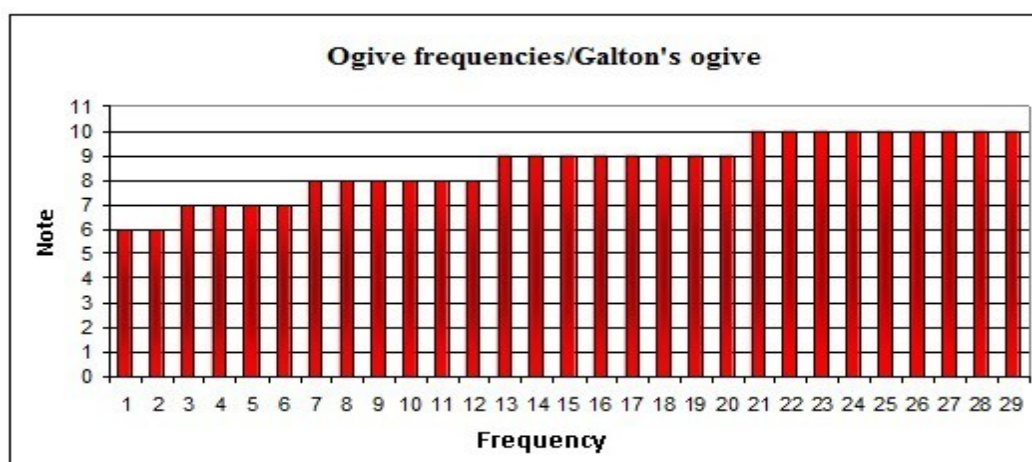
It can be noticed that the value we have computed for t is much greater than the t value from the table, corresponding to $n = 56$ ($n = 29 + 29 - 2 = 56$), at the significance level of $p = 0,05$ (value which is 2) and also greater than the t value at the significance level of $p = 0,01$ (value which is 2,66). Therefore, for the value $t = 3.56$ that we have computed, we can infirm / neglect the null hypothesis and we can accept the specific hypothesis, considering that the difference between the two means **is statistically significant** at the significance levels of $p= 0.05$ and $p= 0,01$, respectively.

In order to verify the stability in time of the intellectual activity strategies in the students individual study following the ending of the experiment, we have recourse to the retesting of the subjects through an assessment test with a similar structure to those in the pretest and posttest phases.

Practically, our purpose was to verify if there can be established a connection between the Cornell note-taking technique and the knowledge durability/endurance.

The data obtained by the students after the retest administration are graphically represented below, using the frequencies' ogive / Galton's ogive.

Figure 2. The data obtained by students after retest administration



Statistical significance, in the phase of the difference between the mean obtained by the students after the administration of the distant assessment test (retest) and the final assessment test (posttest).

Following the computing of the t ratio, we can determine the probability that the differences between the means can be due only to random factors and the probability with which the null hypothesis is tested, respectively, consulting the table developed by Student – a special table that contains the values of the t ratio for various significance levels and for various degrees of freedom.

In our case (retest – posttest), we consider the two students samples, with volumes of $n_1 = 29$ and $n_2 = 29$ respectively, with the values of the means $m_1 = 8.62$ and $m_2 = 7.51$ respectively, for which the sums of squares have the following values: $\sum (x - m_1)^2 = 44.83$ și $\sum (x - m_2)^2 = 125.25$.

We intend to establish if the difference between means is statistically significant.

The value of the t ratio will be:

$$t = \frac{|m_1 - m_2|}{\sqrt{\sigma^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} = \frac{|8.62 - 7.51|}{\sqrt{3.03 \left(\frac{1}{29} + \frac{1}{29} \right)}} = \frac{1.11}{0.44} = 2.52$$

It can be noticed that the value we have computed for t is much greater than the t value from the table, corresponding to $n = 56$ ($n = 29 + 29 - 2 = 56$), at the significance level of $p = 0,05$ (value which is 2) and also greater than the t value at the significance level of $p = 0,02$ (value which is 2.39). Therefore, for the value $t = 2.52$ that we have computed, we can infirm / neglect the null hypothesis and we can accept the specific hypothesis, considering that the difference between the two means **is statistically significant** at the significance levels of $p = 1.5$ and $p = 0,02$, respectively.

3. Developing the final conclusions. Valorisation of the research

The experimental endeavour that we have designed and implemented is enclosed in the requirements of the nowadays modern and democratic school, that place in the centre of its pedagogical and didactic reflection, the relations of the students with the knowledge, the progressive building of new knowledge by the students, the development of new epistemological constructions into an integrating and systemic vision.

The results obtained after the deployment of the experiment entitle us to assert the following:

- using the Cornell system during note-taking, the students permanently structure and restructure the information, integrating it easily into their own cognitive schemas;
- the regular usage of the Cornell system in note-taking will lead to the mediation of an active, interactive and even proactive attitude towards the work tasks, towards the pedagogical disciplines and towards knowledge in general among the students;
- the usage of the Cornell system in note-taking contributes to

the improving of the students school performances.

The quantitative and qualitative interpretation of the data obtained through the analysis of the tests and of the notes taken by the students prove that the usage of the Cornell system is considered an appropriate intellectual exercise and also a challenging element for students, from a cognitive standpoint, that leads to the development of the skill to study individually and contributes to: the improvement of the school performances of the students from the pedagogical high schools at the “Classroom management” discipline, and the development of an effective individual studying style. This aspect leads to the validation of the working hypothesis.

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Time Management, Constellation of Interests and Students' Attitude Towards E-learning Platform

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Abstract

Keywords:

parent-children communication;
school-family partnership;
positive learning environment;
positive pedagogy;
student-centred paradigm;
efficient communication.

The communication process and the current information flow were optimized in the last decade, because of the growing number of technical discoveries. The communication between teachers and students in the academic environment is facilitated by the e-learning Platform. Although in the Romanian universities, the use of e-learning platforms is not frequent. Our study started from the question: what are the factors which influence the students' attitude towards the use of e-learning platform? Our hypothesis is that the students' attitude towards e-learning platform is influenced by their constellation of interests. The second hypothesis is that time management has a positive effect on the constellation of interests, influencing the time dedicated to culture/hobbies and professional/educational domains. The participants 229 were students at the University Transilvania of Brasov, from several faculties. The following instruments were used: The constellation of interests questionnaire (adapted upon E.S.Magher, 2005); Time Management Questionnaire – assessing time management behaviors, such as setting goals and priorities, scheduling and planning behaviors, perception of control of time; The Use of E-Learning Platform Questionnaire (aiming to identify dimensions such as: frequency of use, facilities, number of hours per week, type of applications, number of online courses attended, etc.); Attitude towards Online Education and e-learning Platform Questionnaire measuring perceived utility of e-learning platform, superiority of e-learning methods towards traditional learning methods, positive / negative affects generated by e-learning, perceived learning opportunities. The scale included also questions about the type of information that they find interesting on E-Learning platform, the aspects which need improvement, areas of interests included on the e-learning platform. The results showed that students with high academic interests (scientific and professional interests) have a positive attitude towards the use of E-learning platform and tend to use it more frequently than students with low levels of academic interests. The results also showed that the use of e-learning platform enhance situational interest of students, e-learning being perceived as an appealing form of learning, that optimizes time management.

Zusammenfassung

Schlüsselworte:

N Eltern-Kinder Kommunikation; Schule-Familie Partnerschaft; positives Lernumfeld;
positive Pädagogik, studierendenzentriertes Paradigma; effiziente Kommunikation.

Der Kommunikationsprozess und der Informationsfluss wurden in den letzten Jahren dank der Neuerungen im Bereich der Technik erstaunlich stark optimiert. Die schnelle gegenseitige Verständigung zwischen Studenten und Professoren wird im Hochschulwesen durch die e-Learning-Plattform erleichtert. Jedoch ist die Frequenz ihrer Verwendung, der Zugriff zur Plattform nicht das, was erwartet wird. Unsere Untersuchung ist von der Frage ausgegangen, was beeinflusst die Einstellung der Studenten bezüglich der Nutzung der Plattform? So ist die Hypothese entstanden, dass die Konstellation der Interessen der Studenten deren Haltung zur e-Learning-Plattform bestimmt. Die zweite Annahme ist, dass ein Zeitmanagement auf die Interessenkonstellation einen positiven Einfluss ausübt, die die Zeit beeinflusst, die der Kultur gewidmet wird, den Hobbies, dem Beruf, der Ausbildung. Die 229 Teilnehmer waren Studenten an verschiedenen Fakultäten der „Transilvania“ Universität aus Brasov. Die verwendeten Arbeitsinstrumente waren: Testbogen zur Interessenkonstellation (nach E.S.Magher, 2005); Fragebogen für die Nutzung der e-Learning-Plattform (um folgende Dimensionen zu identifizieren: die Frequenz der Benutzung, Einrichtungen, die Anzahl der Wochestunden, die der Plattform gewidmet sind, die Art der zugegriffenen Anwendungen/ Programme, die Anzahl der verfügbaren Online-Kurse usw.); Der Fragebogen Haltung der Studenten gegenüber der e-Learning-Plattform (betraf die Meinung der Studenten von der Bedeutung einer e-Learning-Plattform an der Hochschule, die Berichterstattung in den Medien über die Existenz der Plattform, was ihnen daran gefällt, was sie nicht mögen, was sie verbessern würden, was würden sie

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beseitigen, wenn es Informationen gibt, die wiederholt werden, wenn Informationen sind, die sie auf der Plattform finden wollen, die aber nicht zu finden sind, welche Fachgebiete, die ihren Interessen entsprechen, sollten in den Bereich der Plattform aufgenommen werden usw.). Die Ergebnisse zeigten, dass die Studenten mit hohen akademischen Ansprüchen (mit wissenschaftlichen und beruflichen Interessen) eine positive Einstellung gegenüber der Nutzung der e-Learning-Plattform haben und dazu neigen, häufiger die Plattform zu benutzen als Studenten mit niedrigen akademischen Interessen. Die Ergebnisse zeigten ebenfalls, dass der Einsatz der e-Learning-Plattform das Interesse der Studenten für das Studium fördert. Die e-Learning-Plattform wird als eine attraktive Lernform wahrgenommen, die zugleich eine Optimierung des Zeitmanagements bedeutet.

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1. Introduction

The communication process and the current information flow were optimized in the last decade, because of the growing number of technical discoveries. Improving academic results through time management (Indreica et al, 2011; Remali et al, 2013; Sotskov et al, 2014; Yang et al, 2015) constitutes a priority for educational systems focused on development of learning competences (Remali et al, 2013; Sengodan & Iksan, 2012; Cazan, 2011), on personal development (Truța, 2011), and on enhancement of intrinsic motivation (Haber et al, 2014; Ahn & Shin, 2014; Samfira et al, 2015). The use of technology in education is no longer an aim, but a necessity resulted from the technological evolution, even though there are risks related to the negative impact on students, such as addiction (Rahmani & Lavasani, 2011) or inhibition of learning (Kalyuga, 2011).

There are several aspects approached in the literature regarding students' perception of educational alternatives offered by mass-media (Brandabur & Aldea, 2012) and students' attitudes towards e-learning platform (Cazan & Indreica, 2011; Popovici & Mironov, 2015; Yatigamma et al, 2014; Weli, 2015). A distinct perspective is given by the studies showing that introduction of E-Learning platform as a learning tool for students significantly changed the use of electronic resources and lead to learning efficiency (Virtič, 2012). But, it is necessary that the student to be motivated for individual learning in order to reach an efficient learning. Motivation can be driven, among others, by the learning styles (Remali, 2013; Sengodan, 2012), and can be enhanced by learning strategies, Cazan & Aniței, 2010), by self-regulated learning (Cazan, 2011) or even by an individualized art-therapy program (Magher, 2005).

As a result of technology evolution, access at information is no longer an issue. The abundance of information, however, increase "time crisis" which appear to be insufficient nowadays for completing daily tasks. ELearning platform faces the "time crisis", facilitating the access at information which can only improve the education process. Implementation of such a platform does not always has the anticipated effect regarding time management (Indreica, 2014). Students are still not

succeeding in assimilating all the information and give "time crisis" as a pretext for not fulfilling learning tasks.

2. Purpose of study

The communication between teachers and students in the academic environment is facilitated by the e-learning Platform. Although in the Romanian universities, the use of e-learning platforms is not frequent. Our study started from the question: what are the factors which influence the students' attitude towards the use of e-learning platform?

Our hypothesis is that the students' attitude towards e-learning platform is influenced by their constellation of interests.

The second hypothesis is that time management has a positive effect on the constellation of interests, influencing the time dedicated to culture/hobbies and professional/educational domains.

3. Methods

3.1. Sample and procedure

The participants were 229 students at Transilvania University of Brasov, from two faculties: Faculty of Letters and Faculty of Economics. Out of these, 96,1% (220) were female and 3,9% (9) male; 65,1% (149) were first year students, 18,3% (42) in the second year, and 16,6% (38) in the third year of university studies – 35,8% (82) were from the Faculty of Letters and 64,2% (147) from the Faculty of Economic Sciences. A percentage of 23,1% (53) came from rural areas and 76,9% (176) from urban ones.

3.2. Instruments

The following instruments were used:

- *The constellation of interests questionnaire* (adapted upon Magher, 2005) – aiming to classify interests on activities in several fields (housing, leisure sport, scientific, professional and cultural field) and to ranking them on the amount of time allocated during an entire week (rank I – less than 1 hour/week, rank II – 1-5 hours/week, rank III – between 6-10 hours, rank IV – between 11-15 hours, rank V – over 15 hours per week,).

- *The Use of E-Learning Platform Questionnaire* contained 17 questions (factual, closed-response, multiple-choice, and open-response questions) - they concerned: gender, rural/urban origin, year of study, faculty, knowledge/absence of knowledge about the existence of the platform, definition of the e-learning platform, use of the platform (technical skills for using the platform), frequency of accessing the platform, number of hours allocated to each access of the platform, time of access, reasons for using the platform, the most important information searched on the platform, knowledge about platform services, knowledge about types of information contained on the platform, advantages of using the platform, disadvantages of using the platform, its utility. The answers were analysed and several categories were created, in order to analyse the data quantitatively.
- *Attitude towards Online Education and e-learning Platform Questionnaire* measuring perceived utility of e-learning platform, superiority of e-learning methods towards traditional learning methods, positive / negative affects generated by e-learning, perceived learning opportunities. The scale included also questions about the type of information that they find interesting on E-Learning platform, the aspects which need improvement, areas of interests included on the e-learning platform. The attitude towards: using the platform, importance, efficacy, content, and design of the platform and the interface.
- *Time Management Questionnaire* contained 20 items, with answers on a scale from 1 to 5 (1 - never, 2 - sometimes, 3 - often, 4 - most times, 5 - always); they aimed at: determining the order of activities, writing lists of activities in the order determined by priorities; grouping resembling things to gain efficiency; prioritizing activities; planning rest and recreation the same way as organizing activities; establishing work time for each activity; observing the time allotted for each activity; knowing exactly how they spent their time at the end of the day; carrying out their most important duties every day; resisting the avoidance of duties; concentrating on the activities to be carried out, not just on the ones they like; allocation, in the personal schedule, of enough time for meal / coffee / relaxing / conversation breaks; not allotting time for unnecessary activities; collaboration for achieving a difficult goal; finishing each time what one has started; conducting the proposed activity immediately, without delay, even if it's something unpleasant; avoiding long conversations on the

phone; primary meeting deadlines for school tasks; studying each day the courses/the bibliography; using time management techniques. The questionnaire was created by the author of the present research and includes 20 items measured on a five point Likert scale. A high score reveals the use of efficient time management strategies. The questionnaire has a high reliability, the analysis revealed an Alfa Cronbach coefficient of .95. There may be some standard errors generated both by the study respondents, as well as the construction of the questionnaire.

4. Findings and results

4.1. The constellation of interests and time management

The individual involves in an activity is catalyzed by the energy driven by the motives. These motives can be either intrinsic or extrinsic in nature (Magher, 2005), giving the direction of our involvement in different interests.

Taking into consideration the complexity of the activities specific to the investigated age stage (18 – 25 years) and the complexity of social statuses, we grouped the activities from the constellation of interest into five distinct domains: 1) house-keeping; 2) leisure/ entertainment; 3) sport; 4) cultural/ hobbies; 5) professional/ educational domain.

In our sample, the number of interests varies between a minimum of 10 and a maximum of 38. The percent of respondents who marked more the 30 activities is relatively small (28.8%). This situation leads us to place more emphasis not on the total number of activities from an area of interests, but on the percent of activities on each domain (for example, the qualitative analysis revealed that a high number of interests can also reflect an excessive involvement in leisure activities). We expected, based on the social statuses that the professional/educational domain will lead. But the analysis of means shows that the leisure activities have the higher mean (table 1). Regarding the number of interests by domains, there are small values for sport (17.5 % of respondents report more than 3 sport activities, but no more than 6) and for cultural/ hobbies. House-keeping domain has higher values but the activities from this domains are rather performed out of necessity (only 20.1% allocate more than 7 activities to house-keeping, with a maximum of 9; qualitative analysis of responses shows that respondents perform these activities because they live in a students' dormitory or with rent).

Table 1. Domains of interests– means

	Total no. of interests	House-keeping	Leisure/ Entertainment	Sport	Cultural/ Hobbies	Professional/ Educational domain
<i>M</i>	21.79	4.86	5.965	2.21	3.95	4.81
<i>N</i>	229	229	229	229	229	229
<i>SD</i>	9.161	1.795	1.627	1.278	3.874	4.235

Table 2. Time allocated to each domain of interest – means

	Time allocated to house-keeping	Time allocated to leisure/ entertainment	Time allocated to sport	Time allocated to culture	Time allocated to professional/ educational domain
<i>M</i>	2.55	4.30	2.56	2.33	2.43
<i>N</i>	229	229	229	229	229
<i>SD</i>	1.069	.832	1.109	1.740	1.780

Regarding time management, on a scale from 1 (not at all) to 5 (always), the means are approximately 2 at all items (with a mean of 1.91 being the smallest and 2.38 the highest). It is noticeable a lack of interest from participants regarding time management from its simplest attitudes (writing a to-do list, prioritizing activities, allocation of time to each activity and following the schedule) to more complex attitudes (focusing on all activities, regardless of the pleasure involved). Paradoxical, “the time crisis” is given by 86.02 % (197) of the participants as a reason for failure in completing all activities included in the daily program.

4.2. The constellation of interests and the attitude towards eLearning platform

Our study started from the question: what are the factors which influence the students’ attitude towards the use of e-

learning platform? Our hypothesis is that the students’ attitude towards e-learning platform is influenced by their constellation of interests.

As expected, students with technical abilities have a more favorable attitude towards the use of E-learning platform than those with lower levels of technical abilities: $t(227) = -7.19$, $p < .001$.

The Spearman correlation coefficients between the number of interests and some aspects of the attitudes towards the E-Learning platform: those students with more interests have better technical abilities of using computers, they are also access the E-learning platform more frequently, they report a higher number of hours of online work, of types of information and of services accessed.

Table 3. Spearman correlation coefficients between the number of interests and the dimensions regarding the use of the E-learning platform

Use of Platform	Number of interests
Technical abilities	.373**
Access of platform/week	.760**
Number of hours per access	.346**
Number of information accessed	.510**
Number of services known	.461**

Note. $p < .001$, $N = 229$

The Spearman correlation coefficients between the number of interests in the academic/professional domain and some aspects of the attitudes towards the E-Learning platform: the higher the number of interests in the academic domain, the higher are the technical abilities and the frequency of use. Also, the time

allocated to the academic field, is positively associated with these dimensions. The results shows that students with high academic interests (scientific and professional interests) have a positive attitude towards the use of E-learning platform and tend to use it more frequently than students with low levels of academic

interests. The results also shows that the use of e-learning being perceived as an appealing form of learning. platform enhances situational interest of students, e-learning

Table 4. Pearson correlation coefficients between the dimensions regarding the use of the E-learning platform, the academic professional domain and the time allocated for this domain

Use of Platform	Academic/professional domain	Time allocated for the academic/professional domain
Technical abilities	.315**	.335**
Access of platform/week	.717**	.733**
Number of hours per access	.346**	.349**

Note. $p < .001$, $N = 229$

Concerning the attitude towards the E-learning platform, the independent t test analyses revealed that the students with positive attitudes towards the E-learning platform have a higher number of interests.

Table 5. The differences between the students with positive and negative attitude towards the E-learning platform regarding the number of interests

	Attitude towards the E-learning Platform	Type of attitude	N	M	SD	t
Number of interests	Use	negative	159	16.35	4.47	-36.758**
		positive	70	34.17	2.76	
	Importance	negative	125	14.81	2.97	-21.753**
		positive	104	30.19	6.68	
	Efficiency	negative	137	15.25	3.36	-24.602**
		positive	92	31.54	5.72	
	Content	negative	153	15.96	3.93	-32.165**
		positive	76	33.54	3.81	
	Design	negative	125	14.78	2.91	-21.989**
		positive	104	30.22	6.64	

Note. $p < .001$

The analysis regarding the differences between the reasons for accessing the platform and their association with the number of interests revealed an interesting result. One Way ANOVA showed that there are statistically significant differences between the five types of reasons regarding the number of interests: $F(4,228) = 61.16, p < .001$.

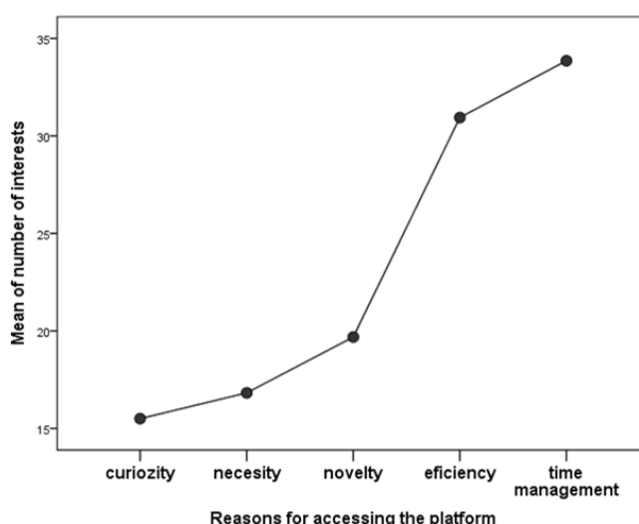


Figure 1. The differences between the reasons for accessing the E-learning platform on the number of interests

The Post hoc analysis revealed that students who reported that the reasons for accessing the E-learning platform are the time management and the efficiency had the highest number of interest. The results showed that the benefits of the platform are highlighted for those students who have more interests, the platform being a learning environment which supports the time

management strategies. Time management reasons are the highest, the differences being significant for all the other dimensions, besides efficiency (Table 6).

Table 6. Post hoc analysis: The differences between the reasons for accessing the E-learning platform on the number of interests ^aGames-Howell

(I) Reasons for accessing the platform	(J) Reasons for accessing the platform	Mean Difference (I-J)
Curiosity	Necessity	-1.32
	Novelty	-4.18
	Efficiency	-15.44**
	Time management	-18.35**
Necessity	Novelty	-2.86
	Efficiency	-14.12**
	Time management	-17.03**
Novelty	Efficiency	-11.25**
	Time management	-14.17**
Efficiency	Time management	-2.914

Note. ** $p < .01$

4.3. Time management and the constellation of interests

The second hypothesis is that time management has a positive effect on the constellation of interests, influencing the time dedicated to culture/hobbies and professional/educational domains.

The Pearson correlation revealed a highly significant association between time management and the total number of interests: $r(229) = .81, p < .001$.

Time management also correlates significantly with all interest domains and with the time allocated for each domain. An interesting result is the negative association between time management and leisure/ entertainment domain showing that the students who have more interests in the recreational domain, have inefficient strategies of time management

Professional/ educational	.815**
---------------------------	--------

Note. ** $p < .001, N = 229$

Concerning the differences between the students from the two different study programs, the independent t tests revealed that the students from the Faculty of Letters have significantly more efficient time management strategies and reported a higher number of interests than the students from the Faculty of Economics.

The linear regression technique showed that the number of interests and the study program are also efficient predictors of the time management strategies. We used a hierarchic technique; the first model included only the number of interest as predictor, the second model added the study program. Both models were efficient, the included variables being statistically significant

Table 8. Differences between the students from the two study programs

	Faculty	N	M	SD	t
No. total interest	Letters	82	24.18	10.03	2.79**
	Economics	146	20.53	8.37	
Time_management	Letters	82	52.90	31.66	3.71**

Table 7. Pearson correlation coefficients between domains of interests and time management

Domains of interest	Time management
House-keeping (number of interests from total)	.570**
Leisure/ Entertainment	-.525**
Sport	.477**
Cultural/ hobbies	.825**

Table 9. Hierarchic multiple linear regression for the prediction of the time management strategies

Model	R	R ²	F	df	sig	Predictors	Constant	Unstandardized coefficients	t
1	.809	.655	429.29	1,227	.000	Number of interests	-13.89	2.60	20.71**
2	.815	.665	9222.91	2,227	.000	Number of interests Study program	-2.58	2.56 -6.08	20.08** -2.52*

Note. ** $p < .01, * p < .05$

Dependent variable: Time management strategies; Model 1: Predictors: Number of interests Model 2: Predictors: Number of interests, study program.

5. Conclusion

The results showed that students with high academic interests (scientific and professional interests) have a positive attitude towards the use of E-learning platform and tend to use it more frequently than students with low levels of academic interests. The results also showed that the use of e-learning platform enhance situational interest of students, e-learning being perceived as an appealing form of learning, that optimizes time management. The area of interests directly influences students' attitude toward using platform which sustains the necessity of a program aimed at managing the constellation of interests.

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Designing Curricular Frameworks for Critical Thinking Development

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Abstract

Keywords:

critical thinking;
skills;
evocation;
making sense;
reflection

In order to adapt successfully at a changing society, students will need the ability to select the correct information, to adapt them to the context and decide what is and what is not important, so they will need to think critical. This paper aims to approach critical thinking seen as a skill required in today's social context when holding information does not prevail, but how it is used. This article will present the need of the critical thinking, but also the need to designing a curricular framework aiming to develop it.

Zusammenfassung

Schlüsselworte:

Kritisches Denken;
Fähigkeiten;
Evokation;
Sinn machen;
Reflexion;

Dieses Papier soll kritisches Denken als Fähigkeit in dem heutigen sozialen Kontext sehen als nicht erforderlich beim Besitz von Informationen sondern wie diese verwendet werden. Dieser Artikel zeigt die Notwendigkeit für die Erstellung von kritischem Denken. Um sich erfolgreich an eine sich wandelnde Gesellschaft anzupassen, benötigen die Schüler die Fähigkeit, die richtigen Informationen auszuwählen, sie an den Kontext anzupassen und zu entscheiden, was ist und was nicht wichtig ist, also müssen sie kritisch denken.

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1. Introduction

In today's society, when information is no longer a problem, being able to find it is relatively easy now, in books, libraries or on the Internet, the question now is selecting what is relevant. So, for students to know or learn to select what is important, relevant, valuable or useful or learn to create connections between information, training critical thinking plays an important role.

There are many definitions of critical thinking data over time but most include concepts such as: careful analysis, evaluation, knowledge, personal beliefs. Barnes (2005) says critical thinking process encourages students to learn that what is important is not what it seems on the surface, the truth can not be found on the surface, thus maintaining a healthy skepticism is an essential condition for critical thinking. According to the National Council for Excellence in Critical Thinking (USA), critical thinking is

based on a set of skills meant to help students in conceptualizing, analyzing, evaluating and applying information in practice. So we can define critical thinking as an active process of goal-orientated knowledge through which information is reinstated or reinvented. In order to adapt successfully at a changing society, students will need the ability to select the correct information, to adapt them to the context and decide what is and what is not important, so they will need to think critical.

2. Critical thinking can be learned through an adequate curricular framework

Browne & Freeman (2000) consider critical thinking as a mental habit that involves examination, testing and practical training, so it is a process that is not born naturally. So to develop student's critical thinking, teachers must create the necessary

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learning framework built on the premise: what we know determines what we can learn.

The development of critical thinking presented in the literature as a sustainable curricular framework refers to Evocation, Making sense of and Reflection - *The EMR* (Temple Ch. Et al., 2003)

Evocation is the stage in which occurs prior discussion with the student on the subject to be taught: what is known about the subject, what do we want to know, what do we want to know in addition, why must we be aware of these issues?

Making sense is made by students as they seek information to confirm their expectations.

Reflection is the previous discussion by answering questions raised by the evocation phase.

So creating this framework, the student makes several important cognitive activities, he is actively involved in trying to remember what it knows about a topic, determinate him to analyze his knowledge, to analyze, to compare and begin to reflect on the subject that he will then study in detail. By involving critical thinking, learning new correlation is no more than adjusting what is already known, in order that students understand new information on the background of previous knowledge.

Another goal pursued by the ERR in the development of critical thinking is the activation of students. To ensure critical thinking students must be actively involved in the learning process and will thus be aware of their thinking, their own cognitive schemes and in this manner learning process will become more efficient, because understanding sustainability depends on linking new knowledge with existing schemes .

Another way for ERR to contribute to learning critical thinking is to establish objective investigation, when there is an aim study becomes more efficient. Establishing learning objectives will make much easier self-evaluation because it exists a self-reference system, an already established performance indicator. Also, setting learning objectives can determine developing critical thinking from the prospective of analyzing the manner in which we can improve the learning process if the results do not coincide fully with the objectives set.

3. How to recognize a student who thinks critically?

Of course, we know the definition of critical thinking, we can implement the framework for the development of critical thinking, but how can we tell if after creating the ERR system our students have learned to think critically, which are the manifest behavior of critical thinking? A student who learned the

components of critical thinking manifests the following behaviors (R. Paul, R. Elder, 2003):

- Formulates problems and asks questions
- Accumulates and evaluates relevant information, interprets them
- Reach conclusions and solutions, evaluating them critically after relevant standards
- Thinks free, sees alternative solutions, does not give up
- Communicates, cooperates with others to find solutions to complex problem.

So critical thinking is self-directed, self-regulated and self-assessed, thereby implies effective communication in order to reduce student's self-centeredness. For students to get and to show such behavior is needed, of course, their involvement in specific activities, but at the same time it is necessary to respect some general conditions (Paul R. R. Elder, 2003):

a. All judgments have a purpose

- Students will have the time to determine theirs purpose
- Students will be helped to distinguish the main purpose of the secondary ones
- Students will be encouraged to review constantly the progress in achieving the goal
- Students will be helped to set realistic goals and relevant

b. All judgments are an attempt to solve problems or an attempt to respond to a question

- Encourage students to ask themselves questions in many different forms
- Encourage students to cut the cube in the sub-questions question
- Encourage students to ascertain whether the question or problem has only one correct answer

c. All judgments are produced from a particular perspective

- Encourage students to present their point of view
- Encourage students to identify other points of view and to identify both strengths and weaknesses

d. All judgments are based on data and information

- Teach students to limit claims to those which are supported by evident information

- Encourage students to seek information that could contradict their knowledge and other information to support them
- Encourage students to ensure that all information that they use are clear, accurate and relevant to the point of view they are backing
- Students must ensure that they reviewed the necessary information

e. All judgments have implications and consequences

- Encourage students to identify positive and negative consequences of their thinking
- Encourage students to consider as many possible consequences of their thinking

It is noted so that critical thinking training is carried out systematically by encouraging the students to analysis, self-analysis, reflection and communication, looking at reasoning from several points of view in order to improve learning.

As a conclusion, to the analyze made above to reasoning we can draw critical thinking elements. They are (Temple Ch. et al., 2003):

- Establish purpose
- Identify the relevance of information
- Establishing inferences/ conclusions
- Identify concepts
- Anticipate the consequences
- Formulation of the view
- Formulating questions

To use efficiently these elements, during the learning process students should be encouraged to answer to the next questions:

Establishing the goal:

- What do I want to accomplish?
- Which side are my goals?

Identification of the relevant information:

- Which information I use to achieve the goal?
- Which is the relevant information?

Setting inferences/ conclusions:

- How have I come to that conclusion?
- Is there another way to interpret information?
- Could have I reached a different conclusion?

Identify key concepts:

- Which is the main idea?
- Can I explain this idea?

Anticipating the consequences:

- Which are the consequences of my behavior?

The wording of point of view:

- How can I justify my point of view?
- There may be others?

The wording of questions:

- Which are my doubts?
- How should I formulate questions to obtain the desired information?

As mentioned above, creating the Evocation, Making sense of and Reflection frame, is a fundamental element in the conduct of an activity that wants to develop student's critical thinking.

4. Conclusions

Critical thinking is a complex process that begins with the assimilation of knowledge, the acquisition of cognitive operations and cognitive procedures for processing information, continues with the formation of beliefs and convictions which lead to decision making and ends with the manifestation of appropriate and effective adaptive behavior.

Not all knowledge is useful and valuable. Knowledge has value when they are understood and thereby prove useful in solving the problems of life and can be put into practice in a creative, constructive manner. To successfully cope with daily demands, people need to know many things, to obtain more information. But the explosion of information and human ability to have unfettered access to information around the world often creates confusion and causes anxiety. In a fast changing world, a democratic and open society where information is rapidly deformed, people must learn to discern between what is important or not, between what has valuable and practical use and which does not possess such qualities, to dismiss with arguments false information, irrelevant and unnecessary and to retain the most genuine, relevant, useful. That means they must think critically, creatively, constructively, efficiently. Critical thinking is a condition and a way to achieve effective learning which is essential for the development of individual personality.

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A New Way of Thinking in the Era of Virtual Reality and Artificial Intelligence

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Abstract

Keywords:

Innovation;
artificial intelligence;
virtuality;
metamodernism;
psychology of hope;
education;

The immersive technologies and artificial intelligence have a major impact in transforming all the aspects of contemporary social life. The present paper emphasizes the necessity to acknowledge these changes and to prepare for their increased emergence into our day to day society. We discuss the consequences of the latest investments and innovations in the domain of Immersive Virtual Environment and AI and the importance of promoting anticipatory and proactive thinking in order to adapt ourselves to this new reality.

Zusammenfassung

Schlüsselworte:

Innovation;
künstliche Intelligenz;
Virtualität;
Metamodernismus;
Psychologie der Hoffnung;
Bildung

Immersive Technologien und künstliche Intelligenz haben einen großen Einfluss auf die Transformation aller Aspekte des modernen sozialen Lebens. Die vorliegende Arbeit betont die Notwendigkeit, diese Veränderungen anzuerkennen und sich auf ihr vermehrtes Auftreten in unserer alltäglichen Gesellschaft vorzubereiten. Wir diskutieren die Konsequenzen der jüngsten Investitionen und Innovationen im Bereich immersive virtuelle Umgebungen und künstliche Intelligenz sowie die Bedeutung, das antizipative und proaktive Denken zu fördern, um uns an diese neue Realität anzupassen.

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1. Introduction

The emergence of the knowledge and information into society has forced us to live in a society based on the creation, dissemination and utilization of mass amounts of technology and ideas at an unprecedented rate.

A few decades ago terms like cyberspace, virtual reality and artificial intelligence were used more often in science fiction literature, but now we can see that these terms are part of today's mainstream scientific and academic conversation and

literature. One of the reasons for this terminology inflation could be the development of science and technology at a very accelerated rate.

Is contemporary society ready to assimilate all these developments and acquisitions? What impact will they have on real life activities of common citizens? How will we relate toward a computer or a humanoid robot when they become smarter than us, for example? Will we perceive it like a device or will we treat it similar to a human being? Are we ready to live and to be real in a virtual world? How would we change our way of thinking (Faggella, 2013) what kind of politics and

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regulations should be developed as our society becomes adjusted to all these challenges?

All these justified questions require answers, and the educators need to be prepared with knowledgeable responses considering that the educational system is the domain that is building and rebuilding itself through a permanent adaptation to the societal changes. Schools and universities have to be fields that react promptly to any changes produced in society, they need to be ready to provide solutions to the problems facing contemporary society (Witeck, 2015).

The present paper tries to ring an alarm bell to the challenges faced by current society with the fast-paced development of immersive technologies and AI. We also want to emphasize the need of initiating changes in the way of thinking of contemporary society as the need to adjust becomes more apparent. In this respect, our option is for metamodernism, understood as a new way of thinking that promotes anticipatory and proactive thinking.

Metamodernism is a trend which attempts to unify; to harmonize and settle the conflict between modern and postmodern by using desirable positioning towards existing theories, as well as supporting the involvement of seeking solutions to problems not only combating or questioning them.

2. Innovation and Investments Virtual Reality and Artificial Intelligence

During the last period, we witnessed an intensification of research in the fields of virtual reality and artificial intelligence. This research is now encompassing more areas of society, which about 10-15 years ago we could not even imagine. Nowadays the world of Virtual Systems, Immersive Virtual Environments and AI seems to be slowly getting closer to our real world.

The development of these new technologies at such a fast pace is, partially, due to the economic collapse generated by the financial crisis of 2007-2008, the worst financial crisis since the Great Depression of the 1930s, in our opinion. Besides the many negative consequences, the global financial crisis opened the door to reconstruction and paved the way for new investments and innovations. Even if, as a state policy, many leaders have understood that the key to overcome the crisis is the drastic reduction of costs, some companies like Facebook, Google, Microsoft etc. decided that the best way to go forward for reconstruction is not to reduce the spendings, but to accelerate investments in research and innovation. The massive influx of advancements throughout the realms of virtual reality (VR) and artificial intelligence (AI) create new challenges for

understanding where the potential advancements will continue to lead.

Virtual reality is a computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside and gloves fitted with sensors (Stevenson & Lindberg, 2010a). A similar purpose of immersing the user in a virtual environment has the augmented reality which is defined as a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view (Stevenson & Lindberg, 2010b). Both systems are immersive technologies, having the quality of generating a three-dimensional image which appears to surround the user (Stevenson & Lindberg, 2010c). They share various common features like providing a computer-generated image and a three dimensional image or creating a virtual environment. At the same time, each system implies immersion, but with a different intensity – starting from a Semi-Immersive Virtual Environment (in the case of Augmented Reality) and ending with a Fully Immersive Environment (in the case of Virtual Reality).

As can be seen today, the major investments are made in augmented reality, but these trends could be changing in the near future with the release of Oculus Rift, the first consumer VR headset capable of delivering true presence (Abrash, 2016). A company like Facebook who has 1.65 billion monthly active users on its social network intends to draw more users into interactive networking through such techniques as live video, but assisted user interfaces and cutting edge algorithms (Metz and Simonite, 2016). At the same time, the fact that VR might work better for social networking and video games is a certainty (McKalin, 2016). Taking into account these considerations, it is possible that in the near future the investors will expand their interests further into innovation for VR systems. Moreover, other Tech giants companies like Microsoft, Google, Apple, Samsung, HTC and others are working to develop or to improve their own systems of VR headsets and these will entice the gaming/software companies to join more heavily into the creation of new games and software.

The recent opinions of the researchers in the domain suggest that soon virtual reality will merge with augmented reality (Robertson, 2016). Therefore, based on the facts above, we believe that the use in the future of a term such as virtuality (VRT) which captures the similarities shared by augmented and virtual reality and their intended finality is welcome in specialized literature.

As for the areas of AI, we also notice a significant increase of investments. According to CBInsights (2016), these

investments increased nearly 7x over the last five years. The fields considered the most competitive are disease diagnosis, climate modelling, drug discovery, macroeconomics, particle physics, material sciences, theorem proving, and protein folding (Schmidt apud. Erico Guizzo, 2016). The future investments in AI can only be expected to increase as the continuing race to develop an Artificial Super Intelligence (AIS) is being undertaken by big tech companies and government agencies across the globe. This race for developing superior AI will also imply a reconceptualization of the meaning of AI and we take into account the future trends in the development of AI regarding the creation of conscious machines.

Starting from the current definitions of AI (see Oxford and Cambridge dictionary) and the perspective of Bostrom (2003, 2016) regarding the concept of Superintelligence, it is likely that in the near future, the term of Artificial Intelligence will be replaced by Artificial Super Intelligence. Artificial Super Intelligence (ASI) can be understood as a multitude of evolving technologies which can give machines the ability to have some of the qualities that the human mind has (such as perceptions, speech recognition, learning and decision making). These machines can have an intellect at or above and beyond the level of most gifted human mind, and could be aware of their own existence, sensations, thoughts and surroundings. In the scenario that we will develop and create ASI, (as achievements are accumulated and monumental breakthroughs are being made), the experts have to now take into consideration the ethical issues of creating intelligent life (Vezina, 2016) as well as the moral status of AI (Clark, 2016 and Mitcham, 2011) and ASI.

Someone could say that it is not necessary at this time to study all the implications derived from AI development; that we are still too far away from that point where we will be able to build Artificial Super Intelligence machines.

Up until a few years ago, we thought we would have a long while yet to prepare for the development of AI creativity (Boden, 1998). Our opinion is that it is hard to predict how far or how close we are until that point of development. Recent advancements released into mainstream used by the general populace leave us questioning just how near this future is. Nearly two decades later, we now find that story writing or particularly tiresome work such as number crunching in accounting is being done in stages almost indecipherable as non-human. For example, organizations like the Associated Press, Yahoo, and Comcast use Wordsmith software offered by Automated Insights, which automatically crafts blog posts, business reports, and sports summaries from spreadsheets. Wordsmith inputs data into user-designed sentences like it is

playing a game of ad libs (Furness, 2016). Yet, despite the immense benefits AI can bring, there is certainly a current need at an international level to regulate the development of the field to prevent and avoid the appearance of risky and dangerous results (Sainato, 2015).

An illustrated example in this respect is the Tay episode, and the consequences of this incident on the way in which society is ready to receive the deep changes which the development of new technologies involve. Not a long time ago, most of the scientists who were working on the development of the AI suggested that a computer could be as smart as a human being (Bostrom, 2014).

This optimistic attitude received a great impetus this year after the Google DeepMind Challenge Match or AlphaGo versus Lee Sedol (Metz, 2016). Some of the scientists or media started to say that a computer will be as smart as a human being in the next 10-15 years, and few seem to disagree with these opinions.

After a short time, however, the ease of corruptibility was exposed to us, proving to programmers and the public alike that we are not so close as we thought we were. It was the moment when an artificial intelligence chatterbot (Tay) for the Twitter platform released by Microsoft Corporation caused controversy by releasing inflammatory tweets and it was taken offline around 16 hours after its launch. This event made us to think if conversational computing (Nadella apud. Knight, 2016) will be the new major paradigm in computing.

From our point of view, the Tay episode was not such a bad thing at all. The problems began because some of the Internet users saw the Chatbot Tay just like a player in a new game, they did not see it like a Microsoft project for improving the AI.

In a cyberworld where some people are enjoying harassing one another, where people like to see hours of work completely destroyed (e.g. Minecraft grieving), where thousands of people like to watch grieving youtube videos, it demonstrates to us that the AlphaGo victory against Lee Sedol was a big step in the study of AI but many vital steps will need to be taken before AI is capable of dealing with all the people from a social network.

We still have a lot of research to do until we can build a (ro)bot who can really think like a person, but at the same time we need to take into consideration that we need to find a way to make people think a bit differently, to be able to build a society ready for an Era of AI.

For building this society, could the analysis of the role of social media in social mobilization help us find a way in which we can make changes in the way of thinking of today's society? Analyzing the connection between how people abused Chatbot

Tay and the grieving from some games could make AI machines work better?

3. Metamodernism - a new way of thinking emerges

We live now in a world where we are „intoxicated” every day with apocalyptic information. If we turn on the television or if we search the internet most news stories are about a world in crisis, wars, migrants or about how the climate change will destroy our environment. Only in the last 15 years we can remember that there were foretold 2-3 apocalypses. In today's world a „no hope attitude” is mainly promoted; where people are buying bunkers to survive one apocalypse after another; a world without hope, where we forgot to dream, to use our imagination.

In our opinion, this apocalyptic thinking emerges from the postmodern way of thinking where the critic attitude, problematization, and the lack of formal organisation and deconstruction (Komańda, 2016) was the key. Postmodern man is characterized by existential and epistemological doubt and skepticism as a mental attitude in general, being a person with an attitude towards life characterized by distrust, skepticism, subjectivism, doubt, conflictual situations, negativism.

A new way of thinking, a “new world” in which neither the critic nor the problematization is the answer could be Metamodernism. In a metamodern world the constructive effort to find solutions to societal issues is the key. Metamodernism promotes anticipatory and proactive thinking, emphasizing the role of hope in our life. As humans, we need hope and we cannot live without it. Our capacity for hope drives us forward, gives us energy to accomplish our goals and encourages us to overcome obstacles. In psychology, hope is not a new concept. Menninger (1959) was one of the pioneers in the field of the study of hope as a psychological construct and he conceptualized hope as the positive expectation for attaining goals. A more proactive hope theory was developed by Snyder (Snyder et al., 1991), a positive psychologist. Snyder approaches hope as consisting of two interrelated components – agency, a goal directed energy and pathways, a planning to meet these goals. A hopeful thinking person sets up valuable and good goals which provide the direction for his thinking. He also, creates the routes to attain his desired goals (pathway thinking), initiates steps and has the motivation to sustain his actions towards goals (agency thinking). The two factor structure hope model is also supported by empirical data (Snyder et al., 1991). Hope could be understood as a coherent dynamic cognitive motivational system in which hope-related cognitions play an important role. High- hopers think more positively about themselves, set higher goals, and select more

goals (Boazman, 2014). They trust in themselves that they will achieve their goals and they will surpass the obstacles.

High hope has been found to correlate with a number of constructs including, positive personal well-being (Boazman, Saylor, Eastonbrooks, 2012), academic achievement (Snyder et al., 2002) and lower levels of depression (Snyder et al., 1997). Recent studies (Day et al., 2010) reveal that hope is strongly related with divergent thinking (the ability to generate multiple related ideas for a given topic or solutions to a problem) and consciousness.

Hope predicts achievement better than intelligence, grades or personality traits. Therefore, hopefulness is a must have ability for today's digital natives, and educational systems have to be prepared to assist them in their development of hopefulness.

Educators can help students develop goal setting skills, how to identify multiple routes to attain their goals and to have confidence toward the fulfilment of their goals. Then we will have a world in which they will have hope for reaching their goals.

4. Concluding remarks

Throughout history any number of instances can be documented where it was vital for human society to adapt their way of thinking to successfully evolve into the next stage. We are now at a point in which transformations that have occurred in recent decades such as globalization, the emergence of the information society, automation, AI developments are making us aware of just how accelerated these advancements have become.

In this paper, we analyse these challenges and we stress the necessity to acknowledge these changes and prepare for their increased emergence into our day- to-day society. First of all, accumulated acquisitions in the fields of VR, automation and AI up until now show us that we need to rethink our way of thinking to be ready for the future evolution of this Era. One alternative could be the metamodern view, characterised by the constructive effort to find solutions to societal issues and psychology of hope. At the same time, we must realize the positive and risky implications of all that we are witnessing in modern society today from an educational standpoint. Encompassing the thought that AI and VR is prevalent currently in areas of military and medical innovation we need to find ways to bring this drive for advancement into our education system as well. Fresh graduates of our very near future could possibly find themselves ill prepared for the demand placed on them by leading technological companies.

Are we to leave this knowledge gain solely in the hands of Tech giants, or can we find ways to bring our mutual need for shared advancements into a more rewarding system of learning for all involved? Placing a majority of innovation and advancements solely into the hands of those whose primary focus is military or monetary gain may not be a position that could be comfortable as these technologies are embraced more freely by a tech hungry generation.

The foundations of a new age of technology are being laid before our very eyes, it must be our decision how we choose to react to this phenomena (EmTech Digital, 2016). Are we content to sit idle and watch as remarkable landmarks are achieved, or are we able to use pre-emptive actions to prepare our youth and ourselves? What policies, regulations and priorities are required regarding the research in the field to develop an artificial intelligence beneficial to human society and in which risks can be controlled? (Felten, 2016). Many arguments are taking place as to ownership of concepts, ideas,

and designs created by an AI - which can potentially have an incredible market value; where would the credit and patents fall for such creations? (Graham, 2016)

During a discussion about consciousness and if AI should be protected by human rights, professor du Sautoy, from the University of Oxford, paraphrasing beetle analogy from Wittgenstein (1953), said:

„Consciousness is like a box that we all have and inside this box we all have something called a beetle. We all call it a beetle, but we don't know if the thing in your box is actually like the thing in mine. How can I ever see what's in your box?“ (du Sautoy apud. Peter Dockrill, 2016).

These are just a few questions we should reflect upon in the very near future.

Think outside the box !

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