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EDUCATION AS A PSYCHOTERAPEUTIC MODEL

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Abstract

Our study projects the main lines of Carl Rogers' pedagogy (1902-1987), starting from the analysis of his psychological opera, based on a psychotherapeutic approach. It proposes the thesis according to which Carl Rogers is a representative of the psychological pedagogy, of *nondirective* orientation. In this vision, the education promotes the hypothesis of a psychotherapeutic model which valorize the resources of the *experiential learning*. The transparency of the *educator*, in the *real relation* with the *trainee,* the acceptation of the other, the motivation for change constitute the main reasons of the success in the *nondirective pedagogy*.

Key words: psychological pedagogy, nondirective pedagogy, education as a psychotherapeutic model, experiential learning, pedagogic relation in psychotherapeutic perspective, motivation for

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change; research methodology of the psychological pedagogy; measurement of the pupil's intelligence; „Metric scale Binet-Simon"; principles of scientific / psychological pedagogy; paradigm of scientific / psychological pedagogy

Carol Rogers a representative of the psychological pedagogy?

The pedagogy of Carol Rogers (1902-1987) can be assumed from the analysis of his psychological work which is developed from psychotherapeutic perspective. We can identify a pedagogy with a psychotherapeutic foundation, argued by the author at the level of general objective – „becoming a person" – and of „personal reflections about teaching and learning" (Carol Rogers, trans. 2008).

The specialty dictionaries present Carl Rogers as an „American psychopedagogist, marked by the influences of Freud and Dewey", founder of an *Independent Centre of Psychopedagogy* (1939) which valorizes the ideas about education sustained in the book *The Clinical Treatment of the Probleme Child*. The developed *psychotherapeutic model* approaches the problem of education at the level of special *cases* which demand the construction of *special relations* between the *psychotherapist* and the *client.* We are talking about a *special education* which promotes an approach "centered on client", subsequently qualified by Carl Rogers as „*nondirective*" (*Grande Dictionnaire de la Psychologie*, 1994, p.681, 682).

In the history of pedagogy, Carl Rogers is placed in the chapter reserved to „the researches of social psychology with implications in micropedagogy". It is an argument which allows us to consider him a

representative of the *psychological pedagogy* of *psychotherapeutic* orientation, different from the *behaviorist* one, engaged in solving some special problems existing at the "clients'" level – problems of affectivity or „learning difficulties". In this sense, Carl Rogers proposes „a *nondirective* strategy of learning – "an *authentic learning* through a personal discovery".

The *nondirective pedagogy proposed by C*arl Rogers projects radical changes at the level of the *teaching* and *learning* actions. In the *teaching* action, the teacher doesn't have as a main role the transmission of didactic messages; he „is only a *facilitator* who helps student (pupil) to react positively and to manifest empathy". The student / pupil's *learning* action „is founded mainly on positive relations", created by the facilitator teacher who projects „individual meetings" or micro-group activities.

Education / instruction is centered on the pupil's psychological resources in „*experiential learning*" which supposes "the person's integral implication in learning". It stimulates the liberty of learning, as Carl Rogers asserts in the very title of one of his books (Carl Rogers, *Freedom to learn*, 1969) – Ion Gh. Stanciu, 1995).

The hypothesis of education as psychotherapeutic model

Our study regards „the general hypothesis" advanced by Carol Rogers, referring to the possibility of *using a relation for the purpose of personal growth* which „will produce personal change and development" (Carl Rogers, trad.2008, pag.69-70). We will underline a certain type of relation which may contribute to the

education's more efficient approach by valorizing the psychotherapeutic model".

The hypothesis of *education as psychotherapeutic model* which aims the identification and valorization of the profound internal resources of the *trainee* which include, at a prior level, the personality's affective and motivational structures. „It means acceptance and respect face to the trainee's attitudes, from the present moment, however negative or positive" (ibidem, pag.71).

Education as psychotherapeutic model may be accomplished by:

1) The ample, constructive psychological relation of the teacher with the trainee, relationship which leads to the positive change and development of the trainee's personality (implicitly that of the teacher).

2) „Motivation for changing" transmitted to the trainee, grown as a resource of the permanent education, especially in order to develop that quality of the trainee „to discover in himself his ability to use the *relation* – with the *teacher* and with the *self* – in order to grow, in order to develop".

The two valor markers are typical for what represents the psychotherapeutic perspective of learning approach in the instruction and education activity. This *psychotherapeutic perspective* explains the motives why learning, as part of instruction / education is often negative in the school and extra-school environment. Carl Rogers considers „the excess of intellectual procedures" which generate an approach of learning „which is not useful". He underlines „the failure of any approach based on intellect". This abnormal situation,

often visible in the school environment, imposes a change of perspective, sustained *psychologically* and especially psychotherapeutically.

The pedagogical relation based exclusively on knowledge, on instruction methods which are „useless and irrelevant", must be rethought as „helping relation", affectively and motivationally sustained. Thus it becomes a relation with positive formative character, necessary in order to „produce personality change and development (for the *trainee,* but also for the *teacher*).

The conditions of an efficient pedagogical relation from psychotherapeutic perspective

The pedagogic relation, mainly based on affective and motivational support, becomes, in fact, a permanent correlation between educator (as psychotherapist) and the trainee. The educator as a psychotherapist, in order to accomplish an efficient pedagogic relation, must fulfill three conditions (ibidem, p.70, 71).

1) *The educator*, in order to be „more authentic in his relation" with the *trainee* (individual and in group) must construct an affective perspective. Only in this way pedagogically the „relation is real"; effectively it can become a pedagogic correlation.

2) *The educator* must construct and to perfect the basic relation of accepting the *trainee.* By *acceptance,* Carol Rogers „understands a warm appreciation for him – for the *trainee* – as person with unconditioned value". The acceptance is affectively necessary, „no matter of the" trainee's "situation, behavior or

feelings. The formative effect consist in that the pedagogic relation thus constructed „offers the trainee warmth and security".

3) *The trainee* must act as a psychotherapist with a „sensible empathy with every feeling and communicated thought" by the trainee in every moment of the activity. The *understanding* of the trainee's feelings and thoughts sustains the basis of the pedagogic correlation educator – trainee. Its perfection is placed at the level of the continuity between „acceptation" and „understanding". This creates a complete freedom for the trainee (and for the educator) by eliminating eny negative, punitive, formal and impersonal evaluation.

Characteristics of the pedagogic relation in psychotherapeutic perspective

The first characteristic of the pedagogic relation psychotherapeutically build consist in the *educator's transparency* proved by the fact that all „his real feelings are visible", easy to perceive and to appreciate by the *trainee.*

The second characteristic of the pedagogic relation psychotherapeutically build consists in the „acceptance of the other – of the trainee – as person with his own value" which is recognized, respected and positively valorized.

The third characteristic of the pedagogic relation psychotherapeutically build consists in the positive, superior formative effect, generated at the level of the trainee's personality. In this perspective, the trainee's personality „will reorganize both at

conscientious and more profound levels". The produced qualitative changes regard:

a) perception of the self– realism;

b) confidence in the self – independence;

c) mature behavior – stress liberation;

d) adaptation to new situations – creativity socially, not only individually confirmed.

Motivation for change

The education's general hypothesis, as psychotherapeutic model is argued not only by the thesis of the perfected „relation" between educator and the trainee. There is also a second solid argument, of psychological and psychotherapeutic order, which Carl Rogers names „motivation for change" (ibidem, p.72).

The motivation for change intervenes – in the case of the trainee – at individual level. With its help in our case the trainee „will discover the ability to use the relation – with the educator and with the self – in order to grow".

The motivation for change is stimulated by the relation educator – trainee, mainly based on the resources of affectivity. Carl Rogers proves experimentally that this relation, constructed in psychotherapeutic sense, valorize three „latent tendencies" which have a potential of *formative capacities* (*pedagogical*):

1) „The tendency to advance towards maturity" which, in an adequate psychical climate, is liberated and becomes a potential capacity, *real capacity*.

2) „The tendency to reorganize the personality and the relation with life, in ways considered more mature" (idem).

3) „The tendency directed forward – the main resort of life"; this tendency exists in the case of the *trainee* „which expects only the adequate conditions to be liberated and expressed" (ibidem, p.73).

The constructive change of personality

The pedagogic relation projected by the *educator* in psychotherapeutic sense is one of *transparent affective communication*, based on *listening and understanding the trainee.* It constitutes or it becomes „the essential relation for the personality's constructive change" (idem).

The constructive change that generate the positive development of personality engages the reorganization of the profound, cognitive, but especially noncognitive (affective, motivational) psychical structures. They help the trainee „to confront life more constructively, more intelligently" and more positively motivated. The individual experience is valorized „in a manner both more socialized and satisfactory".

This educational model probes „the efficiency of a psychotherapy form that combines the affective resources of personality, existing in individual situations, with the "larger" resources reported to all human relations.

In conclusion, the *psychotherapeutic relation*, as it is conceived by Carl Rogers is in its essence „a form of interpersonal relation", necessary in different contexts. Our study interpreted this relation in

pedagogical context. In this perspective „the centration on client" aimed the *centration of instruction on the trainee's psychological resources.*

The pedagogical correlation between educator and trainee thus valorizes, from psychotherapeutic perspective, „the same legitimacy which governs all the efficient interpersonal relations", „not only those with clients in sufferance" (ibidem, p.75). In pedagogical plan, the efficiency is confirmed at the level of connection between the created conditions (by projection) and the obtained results. In the original vision promoted by Carl Rogers, the conditions of *transparency, listening and understanding* the partner creates the optimal motivation for the positive change of the *trainee's personality.*

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ROLE OF MASS-MEDIA IN CONTEMPORARY REALITY AS AN EDUCATIONAL FACTOR

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Abstract

The media should be seen today not only in a restrictive, just as another, power "in the state, but also as ample space for debate, to express various kinds of opinions or journalistic or representatives of certain social groups with a recognized identity nationwide. Contemporary society is marked by an information explosion of unprecedented intensity and, therefore, education is more important than ever. Education is not only training şco1ară but is increasingly understood as a continuous flow modeling and transforming influence exerted throughout the individual's life. School is an

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important component of education, but education is not the only factor. School must be completed by the family, the community, the whole society to support and guide appropriate individual.

Key Words: education, mass-media, school, curricular, 3-5 in alphabetical order TNR 10

Introduction

Mass media have a vital role in the intellectual development of the individual, psychological change its attitudes and beliefs in creating a world in organizing his social life, integration into society in shaping its overall human.

The most important instance is media education. Based on the variety of learning situations and to different degrees of intentionality acted education can be objective in three ways: formal, non-formal and informal media contributing to non-formal education, which includes all educational influences that take place outside school or through optional activities or optional. The term designates a nonformal educational reality less formalized or unofficial, but with the band. The actions in this area are characterized by high flexibility and meet the varied interests. Education of this kind has always existed. What is new today on this way to educate them is to organize planned.

The media, along with other factors: church, school, family, cultural institutions and others should act simultaneously correlated by combining their functions and not independent, isolated. In recent years, emphasis was placed on promoting the image of the school in

¬ mass media, it's becoming a concern for teachers. The forms of collaboration were partnerships with media outlets, and promoting curricular and extracurricular activities in the media. However, for promotion as broad educational institutions offer education published in print.

The relation between media and education

Research theme serves the needs of schools in recent years that , by working more closely with the media have failed to promote the picture. Any educational institution needs to promote awareness of the students on the importance of education in forming their personalities. "If every means of communication has its own specific, there is a common feature of press, radio and television. It is a crucial similarity and undoubtedly fundamental to the media industry: the perishable nature of the product running".

In most cases, media content quickly loses its value. It is no exaggeration to say that today information is not a perishable product, but undoubtedly the most perishable of all, to the extent that it can not preserve the commercial value, even if it is physically preserved (collections of newspapers , records). Of course, the life of content is available, ranging in descending order from (eg. news story - about immediate actuality). Thus, certain parts or television films resemble true cinema films and can be disseminated back . They therefore retain their commercial value, which can destroy first broadcast.

The media creates a formidable "flow production" (a decline in value almost instantly, continuity and extent of dissemination), which opposes the classic "cultural goods", consisting of published products designed to last longer (books, films, CDs). However, these two product types can coexist in television, where are combined on the one hand the programs "stock " little or no current related and which may be repeating broadcast (television, plays, serials, documentaries, animation), products that can bring profits for the sale of broadcast rights and, on the other hand, "flow programs" news, sports, variety, games, talk shows, which lose value once running. In this lifetime, often very short, which makes the resulting consequences chain all media economy .

Education refers to a set of measures applied to training and development of the intellectual, moral and physical of children, youth or men in society etc . From an older perspective approach can subsume education organized and systemic interventions that result in an individual's personality modeling. As mentioned Ion Albulescu (2003) dominant perspective in addressing pedagogical reflection authors representative of our country 's past as Ion Găvănescu Constantin Narly, G.G. Antonescu or Dimitrie Todoran is the definition of education as a share of influence and an emphasis on his character conscious, intentional, systemic, planned, organized, which restricts the scope of the fundamental pedagogical concepts in the author's opinion, the actions of educational effects are a much greater diversity than all steps taken in school, explicitly intended for formative purposes.

Indeed, socio -cultural environment can influence the formation and development of the human personality without explicit educational intentions educators through a variety of actions deliberate or not, explicit or implicit, systemic and non-systemic, extending the scope of education, as Dumitru Salade (1995) writes that the sum of influences that has suffered and can assimilate man". Thus, it includes all actions and socio -cultural influences, formal, non-formal or informal that lead voluntarily or spontaneously shaping human nature. The level of growth is reached by a person as a result of intentional influence and the influence of unintended highly diverse and complex".

The impact of mass-media on the process of lifelong learning

Often, the issue of education was addressed by the relationship between teacher and student. Educational activity concerns not only the students but also young adults are being placed , and they in a position to constantly learn .

The dynamism of social life makes the structure of personality traits of children and young people to contribute a variety of factors specific influences : family, school, organizations, socio-cultural, mass media - which constitute educogen factors. For this reason, although the role of school is very important, it would be unrealistic to believe that educational activities are conducted exclusively in relation to teacher-student relationship.

According to the "field theory" of social sciences (K. Lewin, F. Winnefeld etc.), "no action occurs isolated, only between two people

, on the contrary , all actions are carried out in a "field" where a material constellation of factors. Therefore, all the teaching process is carried out in such a highly complex field, which is the area of life of an individual or a group". Thus, for an education system to be effective, it is essential to be taken into account the influence of the entire field of education, its components and how they interact with the school, the stakes being an important formative role they have many educogen factors on the personality of the subject, especially the child. It must be considered permanent transfer between the individual and society, not only for information but also the patterns of symbolic, spiritual and behavioral.

In this context, it is legitimate Stanciu Stoian's statement (1971) , "linked in one way or another by the society in which he lives, man is formed after its likeness . And how each individual personality (and human personality in general) is nothing but a system of social relations embodied in human experience to some specific company in a specific cultural system, each culture generates a certain personality type".

Outside the school environment, educogen par excellence, educational influences are undeniable social environment of school, a real formative field constituted by social institutions. Therefore, education is a product of the whole social system, recognized the fact that a significant part, the training takes place outside the school, under the influence of various educogen factors.

Suggestively, the term "media" associated word from Latin "media" (means) at English "mass" (mass, which, in context, means

a huge number of people) . The media is, in opinion of Ion Albulescu (2003) "media or technical tools that serve the transmission of messages between specifc forms of communication professionals, meeting social institutions, and the public, consisting of a set of isolated individuals". In this context, the term can be extended to phrases interchangeably: mass media, social media and collective diffusion techniques.

The importance of media as a contributor to educate both youth and adults, is widely recognized. On this subject, John Cerghit (1972) review: "The media constantly forming the fourth living environment of the child with the family, at school and usual entourage of relationships". The media does not replace the school, and his influence is complex and is a fundamental element in the relationship between man and environment.

Educational contribution of the media is achieved by the transmission of information, imposition of values, attitudes, behavior patterns , thus having an important role in building code - socio-cultural subject. However, unlike the rigorous training that is done and planned in the formal education system based on curricula and under the guidance of qualified personnel, mass media provide information spontaneously and diffuse, transforming it into a form of completing education conducted in a non-institutionalized, leisure available subject.

Particularly, the impact of the media is the way pleasant, accessible, even exciting, they are offered information. In this context, it is understandable to them felt strong attraction, attraction

sometimes, especially young people, can be manifested creating extreme forms of habituation, even addiction. Environment in which children grow and develop offers a wide variety of stimuli, generate new knowledge and new ways expenente, literacy and relaxation.

For most children, like many adults, watching television, watching TV or reading print media radio occupies most of his free time. For them participation in mediated interaction is one of the most common everyday activities. The public receives such a large number of messages, especially audio ¬ visual, with many implications immediate or delayed, direct or indirect, foreseeable or unforeseeable in the development of their personality formation. As a result, significant changes occur at the level of their personality by generating opinions, attitudes and behaviors. The active presence in the community, the media system has become an active, affecting the functioning of the other systems of society, including the education.

Modern means of communication resizes man's relationship with the surrounding world, becoming one of the most important source for the spiritual profile of the individual. It appears, therefore, the need to look at this means that on supports and teaching, regardless of the age of the subject. Starting from the fact that in many cases mediated communication can serve learning and training activities, Claude -Jean Bertrand stressed that "the boundaries between journalism and education are not strict", which expresses the fact that one of the functions of media institutions is the education. However, the educational function of mass media no replacement

determines the learning activity carried out within the institutionalized school. It can be argued, however, that the media began to control increasingly more extracurricular education space.

Differences interventions to traditional literacy are important but as a way of organization and accomplishment. Feature education through the media is giving spontaneously and diffuse a wide range of messages and information transmitted leisure in space institutionalized. On the other hand, the institutional system of education organized in successive steps is performed a rigorous educational process planned, systematic and intensive placed under the control of qualified persons based on strict selection and structuring of information, as well as volunteer efforts student learning.

A modern education adapted to social reality, not ignore the new features of the socio -cultural life. The environment in which the child grows and is formed in a growing extent, determined by the influence that the media exercises and new electronic media. Increased share of mass media in contemporary cultural life, often occurring at the pace of everyday life, their effective participation in the overall process of formation of the individual's personality led to important changes in the structure of the educational environment. From their school are felt both in position and mission activities and student in the psychological and social development. Lewis Mumford (*Cultural City*, 1953) defined the media as the "eye of the world". Indeed, information and training opportunities offered by the media are extremely large, representing the true industry.

As Ion Albulescu wrote ”information and experiences available through mass media can be harnessed to achieve the educational objectives and proposes that school. Acting school and convergent media is a comprehensive and effective education system able to satisfy high standards format that contemporary society requires of its members". In the process of modernization , the school is forced to integrate and capitalize on the range of products offered by modern information industries.

The media products are used increasingly more often, even if not sufficient, as auxiliary particularly effective teaching. I used various media to broadcast messages from the printed based on the film and electronics. Lately, the use of computers has enabled the creation of multimedia complexes, combining written text, sound and image, resulting in new products. Multimedia systems, whose operation is based on the idea of convergence were formed by combining media industries, computer and telecommunications industries, resulting in such networks on-line (e- mail, www), Teletext, digital press, bus information etc.

Research Method

Reliable data to support the assertion before, we resorted to the application and interpretation of a questionnaire, which was conducted on a sample of 100 teachers in Arges county, aged between 21 and 52 years. Their years of experience in education:

- 8% 2 - 5year,
- 2 % 5 - l0 years,

- 32 % 10-20 years,

- 48 % over 20 years.

The questionnaire is to assess perceptions were teachers on promoting education through the mass media. Conducting questionnaire was between April 5 to May 5, 2013.

The objectives:

- The need for information through media teachers;

- Their opinion on the press in Arges county , but also the national level;

- Frequency of media promotion activities in schools;

- The extent to which teachers willing to work with the county and national publications;

- The need for collaboration between media and staff;

- Effective methods of promoting the image of the school. Data Collection.

The research for teachers in Arges County. Data collection tool was a questionnaire in Microsoft Word. 100 teachers completed the questionnaire.

Summary of results

Teachers who responded to the questionnaire consider that the media is a key factor in promoting education Argesana. Over 36% of them consider that the best information is obtained from the press. Also, 38 % of those interviewed extracurricular activities promoted in print. Moreover, 60 % of teachers in the future intend to work with the media.

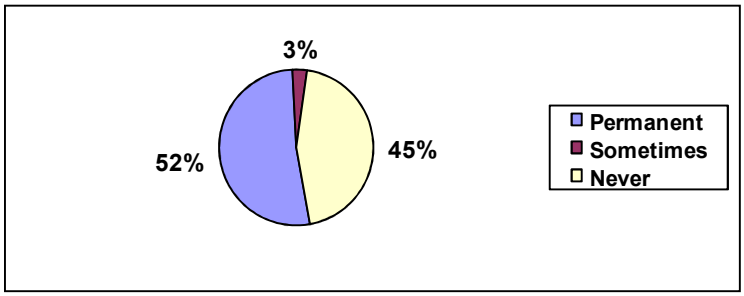
Teachers present several effective ways to promote the image of the school, such as:

- Open Day;
- Extracurricular activities at county and national level;
- Contests school;
- Offer promotional schools published in the media;
- Magazines school.

Data Analysis

1. Are you interested on information from newspapers?

a. permanent;
b. sometimes;
c. never.



Interpretation

To this question 45% of respondents answered that the information in the papers produce a permanent interest to them, 52% responded sometimes, while only 3% said never.

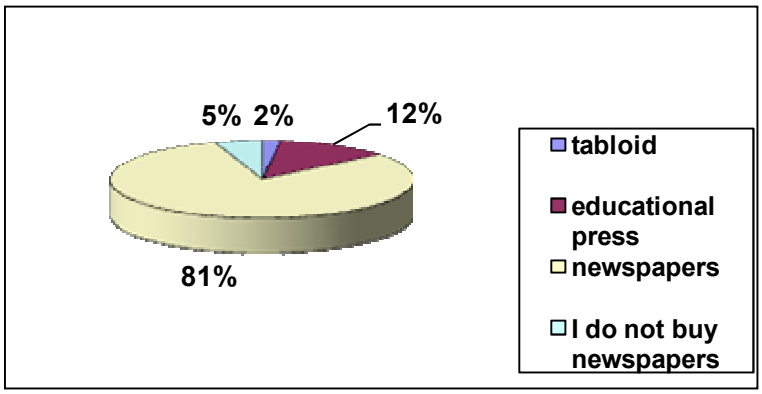
2. Accustomed to buy newspapers? What newspapers do you buy?

a. Tabloid;

b. Educational press;

c. Newspapers;

d. I do not buy newspapers.



Interpretation

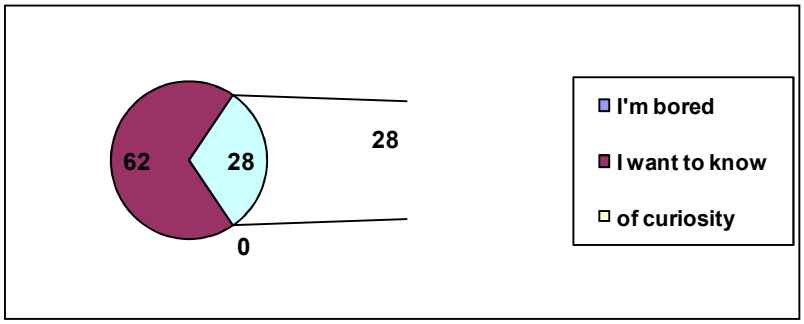
81% of respondents said they prefer newspapers for information, 12% buy educational newspapers, only 2% prefer the tabloids, while 5% do not buy at all.

3. I read the papers because:

a. I'm bored;

b. I want to know what's going on around the country;

c. of curiosity.



Interpretation

62% of people who responded to this question read newspapers because they want to know what's going on around the country, and 28% skim them out of curiosity.

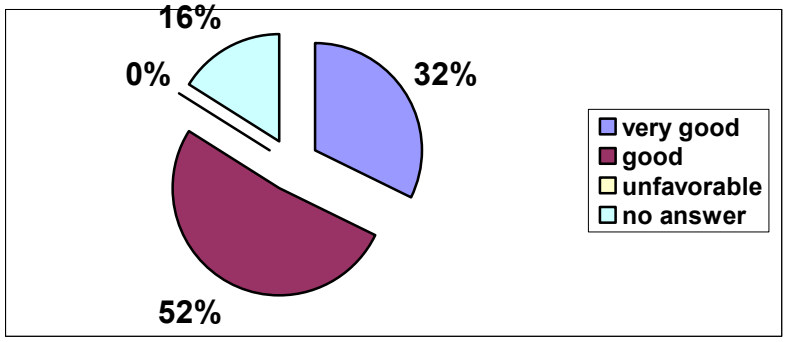
4. What is your opinion about the media in Arges County?

a. very good;

b. good;

c. acceptable;

d. not respond.



Interpretation

Teachers have answered this question as follows: 20% very good, 32% good, 38% acceptable, 10% abstaining.

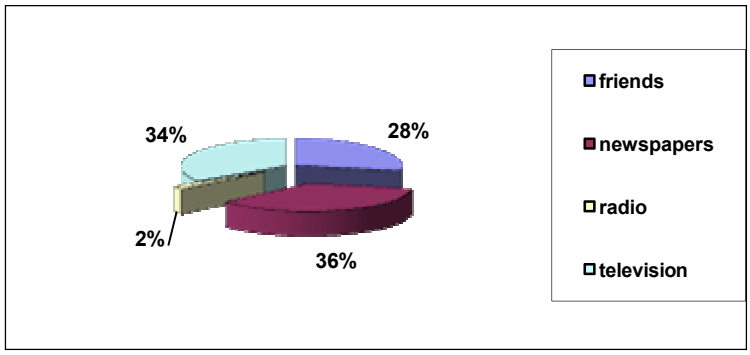
5. How do you get the information:

a. from friends;

b. newspapers;

c. from the radio;

d. from the TV.

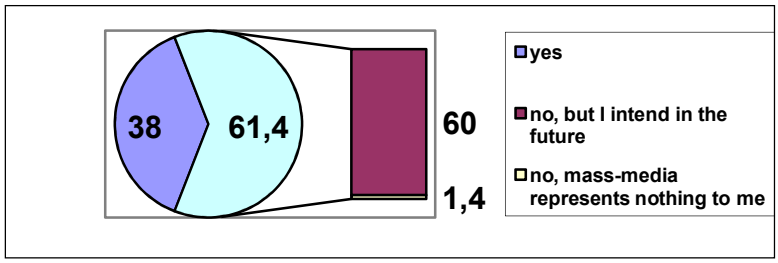


6. Have you promoted activities in print or on TV?

a. Yes;

b. No, but I intend in the future;

c. No, the media is nothing for me.



Interpretation

To this question 38% of respondents said that they had promoted through media activities, 60% of the plans in the future, and only 2%

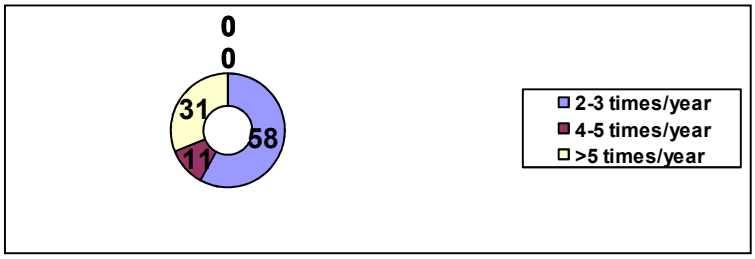
said they did not cause media interest.

7. What is the frequency in the media to promote your activities organized in a school year?

a. 2-3 times a year;

b. 4-5 times per year;

c. greater than 5 times a year.



Interpretation

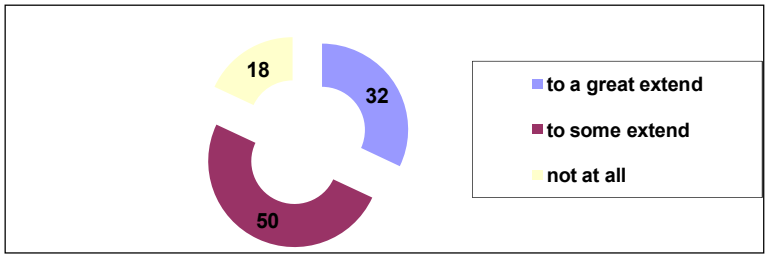
58% of respondents answered that the frequency of promotion activities in the press for a period of one year is 2-3 times / year, 11% promote their activities 4-5 times per year, and 31% for more than 5 times a year.

8. To what extent are you willing to work with the publication of our county?

a. to a great extend;

b. to some extent;

c.not at all.



Interpretation

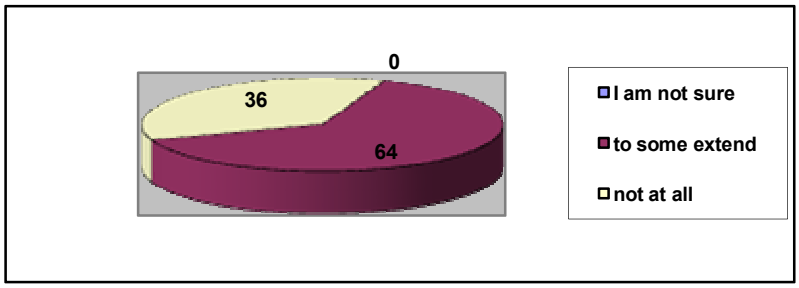
32% of respondents are willing to work heavily with the publication of our county, 50% to some extent and 18% at all.

9. What about a national one?

a. I'm not sure;

b. to some extent;

c. not at all.



Interpretation

64% say they are willing to collaborate in some way with a national publication, while 36% are not interested at all.

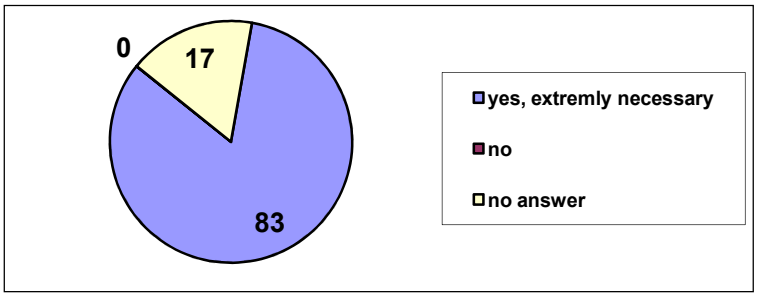
10. It is necessary to develop collaboration between teachers and

media?

a. Yes, very much needed;

b. no;

c. no answer.



Interpretation

Teachers have answered this question in the following way: 83% felt that it is very necessary to cooperate with the media, and 17% abstaining. No interviewed gave no answer.

Conclusions

Teachers are very interested in the promotion of the school's image in the media. According to teachers, this form of promotion, until recently, was not so accessible. Teachers prefer to promote their activities in schools or specialized sites.

In recent years, the media and promoting a wide range of school activities, some newspaper pages containing the structure of education (essential in Arges), or completely specializing in this branch. Thus, teachers have become interested in such cooperation.

Teachers in schools and education counselors have paid special attention to promoting both extracurricular activities (contests,

symposiums, festivals, partnerships) and a school that offers schools have each year (optionals, languages, programs Step by Step or After School), giving students the opportunity to choose the desired profile.

The advances that have occurred in recent years in most areas of knowledge led to complex changes in society and its various components, including informational structures. The rapid development of information and communication technologies has had major consequences on the activities of these structures and led to a recontouring of their mission in society.

Information literacy education is a responsibility of all providers of information. It is but its strategic approach and also the collaboration between libraries and information services and experts in the area of education, technology and other disciplines, to develop programs to promote information literacy. This should be seen as an ongoing process that requires the interaction of all stakeholders.

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THE ACTION OF PEDAGOGICAL EVALUATION. OBJECTIVE AND SUBJECTIVE DIMENSIONS

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Abstract

The action of pedagogic evaluation intervenes at the level of subjective and objective dimensions engaged inside any education / instruction *activity*. The objective dimensions regard the functions and the basic structure of the evaluation action. The subjective dimensions regard the contents and the forms of the evaluation action and especially the methodology of accomplishing the evaluation action, pedagogically subordinated to the activity of education / instruction.

Key-words: action of pedagogic evaluation, general functions of the evaluation action, basic structure of the evaluation action; contents of the evaluation action, forms of accomplishing the evaluation action, methodology of the evaluation action.

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The action of pedagogic evaluation intervenes at the level of objective and subjective dimensions engaged in any *activity* education / instruction. The objective dimensions regard the functions and the basic structure of the evaluation action. The subjective dimensions regard the contents and the forms of the evaluation action and especially the methodology of accomplishing the evaluation action, pedagogically subordinated to the activity of education / instruction.

The general functions and the basic structure of the evaluation action

The general functions and the basic structure of the evaluation action have an *objective* character. They constitute the objective dimensions which confirm the pedagogical specificity of the evaluation action which is an important component of the education / instruction activity.

The general functions can be evidenced reported to the reference area:

A) *The central function of evaluation* intervenes in the action's *basic area;* it ensures the *valuable estimation* of the accomplishment degree of the *education's finalities* with the purpose of establishing *decisions* with purpose of permanent *regulation – self- regulation* of the activity at the level of *positive pedagogical* of the *prognosis*.

B) *The principal functions* intervene in the extended area of the evaluation action; this area engages: a) *the information function* – it regards the *observation* of the state of the *evaluated object* (pupil,

teacher, lesson, school program etc.) – in the premodern and modern pedagogy it is mainly accomplished as *control function*; b) *diagnosis function* – regards the *accomplishment of a valuable* judgment on the obtained *information* about the *evaluated object*; c) the *prognosis* function – it regards the anticipation of the pedagogical evolution direction of the previously *evaluated object* (by *diagnosis*).

The basic structure is determined by the *central function* of pedagogic *evaluation.* It implies the interdependence of three *operations subordinated to the evaluation action*: *measurement, diagnosis, prognosis.* The three *operations* are pedagogically determined by the three *main functions* of evaluation.

a) *The measurement operation* of the obtained results at a certain point by the *evaluated object* (pupil, teacher, lesson, school program etc.) is pedagogically determined by the function of *information*, accomplished in the perspective of the *curriculum* paradigm.

b) *The operation of appreciation* of the measured results is determined by the *diagnosis function.* It regards the *accomplishment* of a *valuable judgment* about the *information,* obtained by measurement, about the *evaluated object.* The *appreciation* of the *observed* results must be accomplished based on *valuable criteria* which are specific for pedagogy: *efficaciousness, efficiency, progress / regress* etc.

c) *The operation of decision* is determined by the function of *prognosis* which regards the anticipation of the direction of pedagogical evolution of the previously *evaluated object* (by *diagnosis*). This operation, which may be accomplished partially and

finally, on *nonformal* and *formal* plan, must have value of *positive* pedagogic *prognosis.*

5) The specific functions of evaluation are mainly *didactic*, *psychological* and *social*.

1) Functions mainly *didactic*, engaged in the construction of the main evaluation *strategies*, are the following:

a) function of *diagnosis* – intervenes at the beginning of every activity; it is implicated in the strategy of the *initial evaluation*; it assumes *partial decisions*, with *nonformal* character;

b) *predictive* function – intervenes at the beginning of every activity; it is implicated in the strategy of *initial evaluation* which predicts the developing manner of the activity; it ensures the basis of the *predictive evaluation* strategy; it assumes *partial decisions*, with *nonformal* character;

c) the *formative* function – intervenes during an entire activity; it is implicated in the strategy of *continuous evaluation* which ensures the activity's *regulation – self-regulation*; it ensures the strategy of *formative evaluation*; it assumes *partial decisions,* with *nonformal* character;

d) the *summative*, *cumulative* function – intervenes at the end of an activity; it is engaged in the strategy of the *final evaluation* which implies the *decision* with *formal* character; it ensures the basis of *summative, cumulative evaluation*, which valorizes the information accumulated by *formative evaluation*.

2) *The function of evaluation* which are mainly *social* are:

a) the function of *promotion* – intervene at school level (school graduation, exam passing etc.) and professional (the promotion on different hierarchical, technical, managerial etat school level.);

b) the function of *school and professional orientation* – intervene during the entire school period; it is intensified in the secondary (professional) and the superior educational system;

c) the function of *certification* – intervene at the end of cycle, educational level or professional stage; it supposes different forms of examination (written, oral, practical etc.);

d) the function of *professional legitimation* – intervene extensively and intensively by the qualitative appreciation of the learning, work, creation product / process etc.;

3) *The function of evaluation* which is mainly *psychological* are:

a) The function *external motivation of instruction* – it implies the utilization of *sanctioning* criteria (positive – negative), proposed by different factors (teachers, parents etc.); it has an individual character; it is conditioned by the presence of *sanction*;

b) the function of *internal motivation of instruction* – it implies the utilization of evaluation criteria that had been *interiorized* by the pupil, student etc. in the conditions of formatting the capacity of self-evaluation; it has an individual, but also a social sense favorable to self-learning/ self-instruction/ self-education.

The contents and the forms of the pedagogic evaluation

The contents and the forms of accomplishing the pedagogic evaluation are determined by the objectives of the instruction

activity, identified at a specific and concrete level. In this perspective, they constitute *subjective dimensions of the action of pedagogic evaluation.*

The contents of the action of pedagogic evaluation are conditioned by: a) the minimum – medium – maximum level of reception and appropriation of knowledge, skills, cognitive strategies and of psychosocial engaging of some attitudes; b) the efficiency of the selected and used methods and strategies; c) the opportunity of the forms of organization initiated by the teacher (instruction with groups, individual instruction, mixt lesson, extradidactic consultation, extradidactic trip etc.

Reported to the evaluation *object,* the *evaluation content* is structured at the level of the educational system and process.

At the level of the educational system, *the content of evaluation regards the quality*: a) *organization* of education / instruction on levels, cycles; b) *managerial ruling*; c) *didactic-material resources*; d) relation with society.

At the level of the educational system, the *evaluation content* regards: a) *knowledge* gathered by pupils, integrated in different structures (notions, judgments, reasoning, models, theories, axioms, principles; b) *the capacities* acquired by pupils: cognitive (understanding, application, analysis, synthesis etc.), affective, psychomotor; c) the pupils' *personality features*; d) *qualities of the pedagogic projection*; e) *teaching products*; f) learning *products*.

The forms of the pedagogical evaluation action are dependent upon the assumed objectives and contents. It implies the decisions of

the factors implicated in evaluation, reported to the objective demands confirmed at the level of the evaluation's general functions and basic structure.

The forms classification of the evaluation action is accomplished reported to: a) the general form of organizing the instruction (formal – nonformal) – *formal evaluation, nonformal evaluation*; b) the nature of the used items (oral, written, practical) – *oral evaluation, written evaluation*, *practical evaluation*; c) the evaluator position (internal, external) – *internal evaluation*, *external evaluation*; d) the degree of explication-interpretation (objective – subjective) – objective evaluation (based on algorithm tests), subjective evaluation (based on observation, interpretation etc.); e) the existing didactic situation (natural, artificial) – *natural evaluation, current* (in class), *special evaluation* (in special conditions: exams, written papers, lab papers, tests in experimental contexts etc.) .

The methodology of accomplishing the evaluation action

The methodology of accomplishing the evaluation action constitutes the subjective dimensions with the greatest resources of stimulating the teacher's creativity. We refer to the capacity of the *evaluation strategies and methods* of permanent regulating-self-regulating the activity of education / instruction reported to the degree in which the proposed objectives are reached by the pupils at frontal, group and individual level. This subjective dimension must be permanently reported by the teacher at the evaluation's objective dimension which demands, in any context, making decisions with value of positive prognosis, which contributes at the improving the

activity of education / instruction and at the school success of each pupil.

The evaluation strategies represent components of the evaluation methodology stabilized and engaged on medium and long term (instruction units, modules, semester, school year) in specific contexts (stages, educational disciplines, certain classes / pupils categories / school organization). Their central *function* consist in the permanent regulation – self – regulation of the instruction activity on short term, but mainly medium and long. *The structure of the evaluation strategies* is *complex* in the measure in which these integrate methods, proceedings / techniques and didactic means, organization forms, didactic and managerial styles, pedagogically valorized as superior docimologic and formative resources.

The classification of the evaluation strategies may be accomplished based on several criteria:

I) The temporal moment in which is integrated the strategy in the instruction activity in the educational process: 1) *the strategy of initial evaluation*; 2) *the strategy of continuous evaluation*, 3) *the strategy of final evaluation*.

II) The specific pedagogic function: 1) *the diagnostic / prognostic / predictive*; 2) *the strategy of formative / formatting evaluation (self-formatting)*; 3) *the strategy of summative / cumulative evaluation*.

III) The docimologic indicator mainly used: 1) *the strategy of normative evaluation* – reporting to a general norm that allows the hierarchization and the promotion of those evaluated; 2) *the strategy*

of progressive evaluation - reporting to the pupil's progress that allows the observation of the evolution tendency (positive / negative) at different time intervals.

IV) The type of methods / techniques that are mainly used: 1) *the strategy of objective evaluation* – based on docimologic tests of algorithmic tests; 2) *the strategy of interpretative evaluation*, based on observations, essay, papers, analysis of the activity's products.

The global analysis of the evaluation strategies confirm the existence of complementarity reports, observed in different docimologic situations met in the instruction activity in the context of the educational process. Their underlining is important for: a) the integral, complex valorizing, of the strategic resources of the evaluation action; b) the elimination of interferences in the presentation of strategies, generated by the breaking of classification criteria – see, for instance, classifications that include in the same category the *strategy of the initial evaluation* (the criteria of the temporal moment) – *the strategy of formative evaluation* (criteria of the specific pedagogic function) etc.

The representative complementarity is that existent between the strategies classified on the criteria of the temporal moment and on the strategies classified on the criteria of the specific pedagogic function. For instance, *the strategy of initial evaluation* is complementary with the strategy of *diagnostic – prognostic evaluation*, expressed in the elliptical formula of *strategy of predictive evaluation.* Analogically, we underline the complementarity existing between: a) *the strategy of continuous*

evaluation – the strategy of formative / formatting evaluation; b) *the strategy of final evaluation / the strategy of summative evaluation.*

The connections can be extended also at the level of the *evaluation strategies* mainly based on a certain docimologic indicator. Thus, the *strategy of final / summative evaluation*, may be associated with the *strategy of normative evaluation.* Analogically, we underline the complementarity existing between the *strategy of continuous / formatting / formative evaluation* and the *strategy of progressive evaluation.*

The evaluation methods represent the docimologic actions proposed by the teacher in order to verify the fulfillment degree of attaining the operational objectives of a concrete instruction activity (lesson etc.) in a determined pedagogic space and time (pupils class, 50 minutes etc.).

The accomplishment of the evaluation methods imply evaluation procedures / techniques. The evaluation procedures / techniques are automatized operations integrated in the action structure of the evaluation method. They are used in certain temporal sequences of the instruction activity (lesson etc.).

The reports between the evaluation methods and procedures are opened, flexible, adaptable. In the conditions in which a certain evaluation method proves to be inefficient during the lesson, it can be immediately replaced with a procedure subordinated to it.

The classification of the evaluation methods can be made from different perspectives. We will evoke the historical perspective of the *curriculum* paradigm, which consecrate the full integration of

evaluation in the structure of any pedagogic act with function of permanent regulation – self-regulation of the education / instruction process. At this level, the evaluation methods are classified in two categories: 1) classic methods, based on items of : a) oral evaluation – conversation, debate, oral examination etc.; b) written evaluation – lecture, text analysis etc.; c) oral evaluation – practical exams of experimental type, hermeneutic type etc.; 2) alternative methods: a) observation; b) self-evaluation; c) investigation; d) project; e) case study; f) portfolio.

As a pedagogic tendency we signal the importance of the *classic methods* in the accomplishment of the initial and final evaluation strategy, especially for the establishing gathered by *alternative methods* especially valorized in the *strategy of continuous, formative evaluation*, which ensures in a substantial manner, the permanent regulation-self-regulation of the pupils and teachers' activity in any didactic and extradidactic context.

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THE EDUCATION SYSTEM IN THE REPUBLIC OF MACEDONIA – IS (WAS) THERE BILINGUALISM IN IT? - A REVIEW

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Abstract

My goal in the discussion below is to review the new ways of seeing the education system in the Republic of Macedonia in the twenty-first century global and European cultural diversity. First, I will briefly outline the history regarding the educational and cultural state in the Republic of Macedonia. Second, I will show that we have to admit that our cosmopolitan and global society needs a unifying discipline leading us to mutual understanding and inevitable dialogue. Therefore, we need the new way of seeing and understanding the world, which helps us to eradicate antipathy or racism, because Europe is moving towards multicultural society, which we do not understand properly yet. Hence, the dialogue arising from multiculturalism and its discourse is a chance to find the way out of our post-modern cultural labyrinth.

Key words: education; minority; bilingualism; cultural diversity; Macedonian/Albanian language

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1. Brief overview of bilingual education research

Like the study of bilingualism itself, bilingual education is an interdisciplinary field drawing upon a wide range of theory and research across different academic fields such as linguistics, sociolinguistics, second - language acquisition, psychology, anthropology, and education. It is beyond the scope of this chapter to review this research fully. Much of it is covered in handbooks on second - language acquisition (Bhatia and Ritchie 2009; Doughty and Long 2005), applied linguistics (Davies and Elder 2006; Kaplan 2002; Simpson 2011), and educational linguistics (Spolsky and Hult 2008).

Briefly, however, research from these fields helps educators make informed decisions about important issues such as identifying students in need of bilingual education, placing students in the most appropriate program model, deciding which program models best serve a given student population, determining how long students should be in the programs, and assessing student progress in language and academic development.

This research also helps to inform classroom teachers in bilingual education as they make principled decisions in planning and delivering effective language and content - area lessons, in structuring the use of the two languages in the classrooms, in helping students adjust culturally and linguistically, in identifying their students′strengths and challenges, and in advocating for their

students and their families (Wright 2010). /In: Bhatia and Ritchie, 2013, p. 602/

2. Macedonia and its cultural diversity

I come from Macedonia, a small country with a long name, which has always been a traditional center of mutual meetings and agreements, communication and co-existence of the people on the Balkan Peninsula, as well as one of the most dynamic regions where many of the socio-economic activities in South-East Europe and wider developed. Macedonia is a multilingual, multiethnic, and multicultural country and long time ago it was the scene of many wars and conflicts and thus was the subject of attacks, which were sometimes solved with military and sometimes with diplomatic means.

It is a small country situated in southeastern Europe, bordering Kosovo and Serbia to the north, Bulgaria to the east, Greece to the south and Albania to the west, and is a major transportation corridor from Western and Central Europe to Southern Europe and the Aegean Sea. Located in the Central Balkan Peninsula it is one of the successor states of the former Yugoslavia, from which it declared independence in 1991. According to 2002 census, ethnic groups who live in this country are: Macedonians (65.2%), Albanians (25.2%), Turks (3.9%), Roma (2.7%), and 4.0% others. Today, the official languages in the Republic of Macedonia are the Macedonian language and the Albanian language ("As of July 10, 2013, the Ministry of foreign affairs listed on its website").

The Macedonian language belongs to the South Slavic languages and is spoken by 2-3 million people who live in the country and in the diaspora (especially in Albania, Bulgaria, Greece, Serbia, the USA, Australia and Canada). On the other hand, the Albanian language belongs to the Indo-European languages and does not belong to any other existing branch. In Macedonia people generally speak two or more than two languages (Macedonian/Albanian or Turkish). The modern standard written version of Macedonian appeared in 1945. Since then many literary works have been published in Macedonian. Literary Macedonian is based on the dialects of the West Central region (Prilep, Kičevo, Bitola, Kruševo and Lerin).

The largest ethnic minority in the Republic of Macedonia are Albanians. Of the 2,022,547 citizens of Macedonia, 509,083, or 25.2%, are Albanian according to the latest national census in 2002. The Albanian minority lives mostly in the north-western part of the country. The largest Albanian communities are in the municipalities of Tetovo (70.3% of the total population), Gostivar (66.7%), Debar (58.1%), Struga (56.8%), Kičevo (54.5%), Kumanovo (25.8%) and Skopje (20.5%) (Kostadinovska-Daskalovska 2005).

Macedonia is a land of ideas. Education, science and research play a central role here. In a Europe free of borders and a world of globalized markets, education lays the basis enabling us to exploit the opportunities open borders and world-wide knowledge networks offer. The Macedonian education and university system is undergoing a profound process of renewal that is already bearing

fruit: Macedonia is one of the countries most preferred by foreign students from south-east region (especially Turkey) and its neighboring countries of this region.

Since the end of World War II, Socialist Republic of Macedonia's population has grown steadily, with the greatest increases occurring in the ethnic Albanian community. From 1953 through the time of the latest census in 2002 (initial results were released December 2003), the percentage of Albanians living in the Republic of Macedonia rose 31.3%. The western part of the country, where most ethnic Albanians live, is the most heavily populated, with approximately 40% of the total population. The net influx in the past 30 years has been close to 100,000 Albanians (Poulton 1995).

When the Socialist Republic of Macedonia was established in 1946, the constitution guaranteed the right of minorities to cultural development and free use of their language. Minority schools and classes in minority languages were introduced immediately, in order to counter the high percentage of illiteracy among these groups. In the following two decades, the Communist Party continuously introduced measures meant to promote the incorporation of the Albanian community into the economic and social life of the new socialist state through education, professional training, and social opportunities (Milosavlevski, Tomovski 1997).

In the late 1980s when the autonomy of the province of Kosovo was revoked, and the repression of the Albanian population significantly increased, these developments also took place in the Socialist Republic of Macedonia. The Albanian language was

removed from public sight, Albanian families were prohibited from naming their children with Albanian names on the ground that it caused divisions with the other communities in the Republic, and finally, to lower the significantly high birth rate of the Albanian population, Albanian families were prohibited from having more than two children (Milosavlevski and Tomovski, 1997 and *Politika ekspres*, June 10, 1986). This assimilative campaign can be clearly seen by the fact that in 1990 the amended Constitution redefined the state from "a state of the Macedonian people and the Albanian and Turkish nationalities" to a "national state of the Macedonian people" (Poulton 1995). After the Second Warld War an academic community arose that was more broadly diversified than ever before, a fact simulated by Macedonian recognition and independence since 1991.

3. The current situation

The Macedonian education system at present consists of pre-school education, primary, secondary and higher education. The higher levels of education can be obtained at one of the five state universities in the Republic of Macedonia: "Ss. Cyril and Methodius" University of Skopje, "St. Clement of Ohrid" University of Bitola, "Goce Delčev" University of Štip, State University of Tetovo and University for Information Science and Technology "St. Paul The Apostle" in Ohrid. There are a number of private university institutions, such as the European University in Skopje, Slavic

University in Sveti Nikole, the South East European University in Tetovo and many others.

Tetovo is considered the unofficial capital of the Albanian minority and the State University of Tetovo is located in the western city of that name. The university is funded by student tuition, contributions of ethnic Albanians in their diaspora, and a "voluntary tax" from national Albanians. At the beginning, the university administration demanded legal recognition of the university as a public institution, which normally met resistance from the Macedonian university scene. The university claims to enroll more than 8 000 students who are almost all Albanian, but who include a smattering of Turks and Roma. Some 360 teaching faculty, mostly Albanians, are listed on their rolls. However, it is stated by some authorities that many of the faculty have left Tetovo for Pristina, since the international community auspices will see to it that the university there is reopened. Others state that not more than 1000-2000 students are actually attending Tetovo at the present time (Van Fleet et.al. 2000).

Another Albanian University located also in Tetovo is the private University - SEEU (South East European University, where official teaching languages are Macedonian, English, and Albanian). Although the van der Stoel proposal is designed to satisfy at least the most immediate needs of the ethnic Albanian community for university education in Albanian, it will add a new dimension to the debate over Tetovo University. The proposed new private institute will directly compete with Tetovo for Albanian students and for

position within the ethnic Albanian community. Although it is not likely that Tetovo University will simply disappear (at least in the short run), the debate about the status and faith of the university will likely become a predominantly intra-Albanian one. (Van Fleet et.al. 2000). In the capital of Macedonia – Skopje, at the Faculty of Philology, state University St. "Cyrill and Methodius", successfully exists a Department for Albanian language and literature and educates teachers and high school professors for Albanian language and literature for primary, secondary, and tertiary education institutions and centers.

The two Universities in Tetovo (The State University and the SEEU) support the fact that the access mechanisms to higher education available to ethnic Albanians and other minorities are more than fair, and that actual practices on admissions provide substantial advantages to them.

Today, some 80 000 young people study in Macedonia. More than one third of every age set enters tertiary education, and the ratio is growing. Nevertheless, Macedonia is still below the international average, firstly owing to the relatively low ratio of pupils who obtained a high-school leaver's certificate and secondly because the number of students' enrolling at the Faculties in the past was limited, which was a result of the previous social system. Anyone wanting to study in Macedonia is now able to choose between 23 higher-education institutions (public and private) that are spread across the entire country. Be it in cities or in countryside (by the Lake Ohrid), traditional or highly modern, small in everything in a walking

distance or large and spread across a pulsating metropolis – today almost every larger Macedonian city has its own college or university, or at least a Faculty as a unit of a University or as a Department of it.

Again, unlike many other countries, private universities play a comparatively subordinate role: more than 90% of students attend public institutions that are subject to state supervision and control (probably because of the low tuition fees) and are essentially open to anyone who has a high-school leaver's certificate (or a comparable certificate) that authorizes them to enter university.

4. Why is bilingualism important for my country?

Bilingualism is also creating new challenges for the Macedonian scientific and university community. The policymakers and universities have taken the initiative, with a series of reforms to adapt the university system to the new international standards. These innovations are in the process of fundamentally shaking up Macedonian academic world. Be it switch to staggered degrees such as Bachelor's and Master's degrees or the introduction of tuition fees and selection tests, be it the emergence of private facilities for academic training or the stronger strategic alliances between universities and institutes outside the higher education system – it is safe to say that hardly a section of society is at present undergoing such major changes as is the education system.

The goal of the reforms is to strengthen research and teaching to better face the ever fiercer international competition and to reclaim

Macedonian's leading position. Changed legislation on Universities grants each university greater scope, and established professors are being paid more clearly according to their performance. Each big-name university tries to give itself a keener profile, and various rankings on university quality and popularity enhance competition.

Studying in a bilingual society enables the Macedonian and Albanian students a greater chance of acquiring communication and cultural differences, give them an opportunity to overcome their personal opinion and attitude toward certain social, political and scientific problems (something which was inherited from the previous social and political system), provide them with a greater level of awareness, understanding and tolerance towards other people, cultures and languages, and a greater chance of employment in future, improving their linguistic and communicational skills and competence, which is also very important for their personal and professional lives.

5. Conclusion and directions for future work

In the present paper I highlighted the importance of the bilingualism within Macedonian culture because it creates a unique cross-cultural understanding absolutely inevitable for our modern/postmodern society of cultural clashes, conflicts and misunderstandings. Our present society is a society of modern slavery and new ways of colonialism, and the bilingualism shows the way out of these current phenomena. If only it could eradicate antipathy and violence because the use of bilingualism is a

phenomenon arising from theory to action. Macedonia's higher education system compared to the past, is improved and can be improved dramatically with little cultural support from all citizens in the country. Along with those changes, a significant upgrading in higher education achievement by Albanians, as well as other minorities, can be achieved in the coming five to ten years.

There should be emphases on learning in languages of the Republic (Macedonian and Albanian) and learning English, too, with a distinct emphasis on nontraditional classroom approaches. Both of these thrusts – teaching and learning both language as well as English and learning through informational sciences – will ameliorate present conditions of ethnic tension in Macedonia. Despite its long history and a strong research base, much work remains to be done in the field of bilingual education in our Republic. I conclude this paper with brief comments on some of the directions needed for future work. Greater emphasis on and support for strong forms of bilingual education is greatly needed in the Republic of Macedonia.

There continues to be a great need to conduct research and document the effectiveness of various forms of bilingual education and other forms of education for language minority students. We must recognize that 'bilingual education is the only way to educate children in the twenty - first century' (p. 5). As Garci'a explains: "One of the biggest changes in the globalized community of the twenty - first century is the blurring of territory that was clearly demarcated by language and culture. Although many territories had

only given the appearance of being homogenous, they provided a context, even if imagined, to enforce monolingual schooling. In the twenty- first century, however, we are aware of the linguistic complexity of the world in which monolingual schooling seems utterly inappropriate. Language differences are seen as a resource, and bilingual education, in all its complexity and forms, seems to be the only way to educate as the world moves forward." (p. 16).

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SOME CONSIDERATIONS ON THE "NEW EDUCATION" FOR MATHEMATICS

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Abstract

In this paper we propose to present a analysis of the link between the mathematics curriculum and the educational process of teaching-learning-assessment, concerning the "new" mathematics. Our analysis is based on the Hans Freudenthal's reinvention principle and on his position in the debate concerning „mathematics for all" and „useful mathematics for life". Keeping the proportions of common sense, we share Freudenthal's idea that mathematics is a "human activity". in this context, we argue that between mathematics content, pursued by the mathematics curriculum, the educational process, outcomes (knowledge, abilities, skills) of the students and the application of mathematics in many useful purposes for theirs

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real life must be based on the new idea of the teaching-learning-assessment theory, which must use the appropriate techniques and methods related with the real educational process well posed.

Key words: assessment, didactics, learning, mathematics educational

Introduction

From the beginning of the ’90s it has been raised the problem for defining the scientific framework for mathematics education thus putting emphasis on curriculum reform and assessment standards for undergraduate mathematics [15] which led to the emergence of modern mathematical phrase or new math in school.

In fact, we can even consider the ’60 as the starting moment for the reform, when following J. Piaget’ papers and those of other researchers, they developed the principle of education focalization on mathematics, „how does the student learn more mathematics?”, starting from the scientific content of the national curriculum [3], [9].

The phrase, new mathematics, is defined with respect to traditional mathematics taught in schools, characterized by focusing teaching algorithms that need to lead students to the correct answer choice in a math assessment. So, by accentuating learning the algorithms from the traditional mathematics, the pupil must use the specific method of each one of those, and the mathematics education is concerned only by the easiest way to learn the algorithm.

The new mathematics education does not preclude an assessment of the correct answers. It should target primarily the thinking process

by which the pupil chooses the right or wrong answer, but also based on that the teacher should adapt the teaching method to suite the pupil, in a way that the pupil's competences in mathematics will improve. Furthermore, research in this area has shown that a student is less wrong when calculating when understands the concepts, notions, properties and logic algorithm.

Moreover, in the '60 the question was raised about the introduction in the school education, from the pre-school, of the so called „new mathematics", or better yet of the new education for mathematics. By this is meant the introduction of the sets theory and of the mathematical logic.

For this new education for mathematics it has been conceived a new technology of the teaching, learning and evaluation process for this subject.

One of the opponents for this mathematics education in schools was Hans Freudenthal [4], who was a supporter of traditional pedagogy that was based on mathematics learning for acquiring mathematical skills and competencies that enable its application to human activities.

During his professional life, his opinions contradicted almost every contemporary approach of the new reform for mathematics education, mostly because of his operational objectives. The operational objectives of the new reform, included and exemplified in the assessment way, were leading, on his opinion, to rigid and standardised forms of evaluation, inconclusive for a real evaluation of the products. The empiric quantity research, perceived as a strict

division of the educational process between the theory of the curriculum and the development of the theory of education, or between the theory of education and its principles, methods and techniques application in the national education system. Even nowadays, we realise that Freudenthal's ideas are still very interesting for the scientific research in the science of education field. Furthermore, when Freudenthal's ideas were announced, they seemed to be considered as recalcitrant, that they represented only a pro domo speech for the mathematics education, but now have become widely accepted and applied. Us too, we consider that it is not at all exaggerated to argue that H. Freudenthal's role is special, not only for the mathematics education, but also for the development of the curriculum theory and the educational research [6].

1. The mathematics – human activity

Because the applicability of mathematics is a problem itself, from the knowledge and technology point of view, as well as from the point of view of the science of education research, we should define very well the educational concepts and objectives that we consider when we plan the National curriculum for mathematics. Furthermore, we must accept from the beginning that in school we can not teach „pure mathematics" or „mathematics for the sake of it". Besides, in the history of human development we can easily prove that mathematics was born, developed as independent science through applications by making concrete materials. The classic example for this is considered to be the one of empiric deduction of

calculi formulas for the geometrical forms, such as pyramids, etc, with the completion of the Egyptian pyramids [2], [7].

Freudenthal was the follower of teaching mathematics through mathematisation, starting from the processes, phenomena, activities in the real world, because this was the only way to motivate learning mathematics in school: "This means that we should not teach in school pure mathematics and afterwards to show how to apply it ... "[1]

In general, the mathematics education must be thought as a process of thinking formation for the pupils in order to do mathematics with a well defined purpose from the scientific and practical point of view. Unfortunately, the students result for mathematics in school is considered to be only the problems-exercises solving with different degrees of difficulty, and the educational objectives are fulfilled if the pupils solve correctly their exercises in their mathematics assessments. By applying the PISA program (Programme for International Student Assessment) [16], at least in our country, it was revealed that students have not acquired the skills and math skills in order to apply them to real-life modelling. From this point of view we must change the formation conception, at least in mathematics, for the pupils in school, which represents a task for the research in the education science field. In our opinion the model of educational reconstruction should give equal attention to all three big educational paradigms:

- accent on the curriculum,
- accent on the teacher,

[1] Gravemeijer, K., Terwel, J., Hans Freudenthal: a mathematician on didactics and curriculum theory, p. 780

- accent on the pupil.

We can not speak about training the student without the help and the scientific and educational expertise of the teacher within a well projected, flexible and innovative national curriculum that is also adapted at the changes and the dynamic of the real world.

From this perspective the mathematic activity within the mathematics education becomes a central problem, not only because it is a integrated and integrating science for all the other sciences, but also because it offers the opportunity for the people to develop a structural thinking especially on models and simulations.

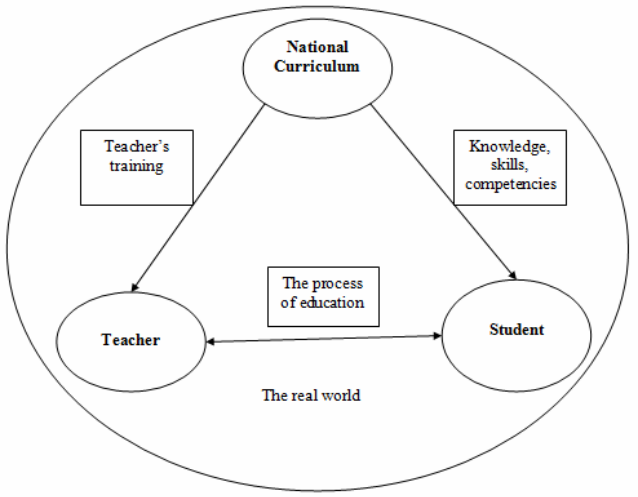

Figure 1. The reconstruction model of education

Although, we might be considered subjective, we have to notice that the linguist G. Lakoff and the psychologist R. E. Núňez [8] define the mathematics as a science of knowledge, absolutely

necessary to the human activities and ideas. The declared purpose for Lakoff and Núňez's paper is to establish the basis for defining mathematics and understanding it as a science based, constructed from the common, usual, necessary and indispensable processes for all human knowledge: "In a certain, consistent and stable over time way and in relation to the development of human communities, as: symbols, calculability, generalization are universally affordable and accessible, both related to objects, concepts, their defining properties, but also as general instruments to describe, explain, forecast the daily human activities in various fields, i.e. sport, constructions, business, technology and science."[2]

So, they found four distinct processes, but related to a basic metaphorical arithmetic structure: defining a set of objects, constructing new objects within the set defined a priori, using a measuring and comparing standard through isomorphism, movement along a construction, demonstration route etc. moreover, in our opinion, these four processes are also the basic ones in the theory of education for mathematics, itself being a human activity through which the pupil constructs new objects (knowledge, abilities, skills) in its mind, being assisted, guided and evaluated by its teacher along a dynamic and transforming trajectory within a curriculum.

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[2] George Lakoff, Rafael E. Núňez, Mathematics Comes From: How the Embodied Mind Brings Mathematics into Being, p. 50, 337.

2. A realistic mathematics education

Starting from Freudenthal's theory that education should be thought, approached, projected and applied as a dynamic complex process, as well as a human activity absolutely necessary, held for the benefit of humanity, the question is how to integrate these two aspects in the technology of education. H. Freudenthal was considering this integration for the mathematics by using the following pedagogical principles and the theory of the curriculum:

- Guided reinvention;
- Levels in the learning process;
- Teaching Phenomenology.

Thus in accordance with the reinvention principle, a learning trajectory along which the student is able to acquire mathematical knowledge through self-discovery and individual work should be based on a curriculum designed and developed and tested on the state of knowledge, the potential power of labour and student interest. Guided reinvention is treated starting with Socrate, applying his methods that were thought as experiments, therefore an experiment developed by the teachers or the books authors who are imagining teaching and interacting with students who will have probable possible reactions to their actions. In other words, a lesson is seen as an experiment, for which we anticipate a possible development, but the reality of interaction with the pupils may lead to different results as well, considering the students reactions. i.e. a primary or pre-school teacher is planning its teaching approach the addition operation for natural numbers in concentrations 100 – 1000, aiming

for its students to get themselves through self-discovery by using the addition crossing rule to be able to solve additions of a greater order, thousands or tens of thousands. A priori, the teacher is imagining a scenario for its maths lesson, so it leads, logically, each student to use the addition rule in concentrations 0 – 100 and the one that crosses the order 100 – 1000.

The scenario thought by the teacher is a possible learning path for its students, and from the research point of view in the Education Science field it is a conjuncture that will be demonstrated at the end of that lesson. Depending on the affirmation or rejection of conjecture, the teacher draws appropriate conclusions on the possible trajectory that he designed:

If the pupils succeeded to discover themselves the crossing rule over the 100 – 1000 concentration, then the learning trajectory is viable for them,

If not, the trajectory did not take into account the pupils capacity, or it was not very well thought from the pedagogical, mathematical, etc point of view.

In any case we have to underline that such a mathematics experiment depends on two fundamental variables:

The pupils knowledge acquired previously, on their mathematics learning trajectories,

The scientific mathematics skills of the teacher, but also his methodical or educational and communication abilities with the students.

From our point of view the assisted method for learning through discovery for the students is also a trajectory for rediscovering the methods and techniques of learning as instruments for research in the Sciences of Education for the teacher.

Freudenthal considered that the concept of rediscovering must be necessarily completed (linked) with the progressive mathematics. So, in other words we should consider rediscovery from the observer's point of view, as well as from that of the experimenter (the teacher) and the student who is the main participant in the experiment. That's why, Freudenthal is structuring the educational process on different levels to match the learning process description made by Van Hiele.

We think that the educational process is itself structured on different level. So, we can name some of them:

The state of the class – knowing, describing correctly in scientific terms the state of the students at a precise given moment on the learning trajectory for a specific Item.

Projection – the conceiving, the writing, the thinking of the new educational path in order to get to a new position on the theoretical learning trajectory as per curriculum, that matches the acquired skills of the students from the previous level.

The experiment ongoing - educational activities designed classroom with students.

The assessment of the acquired results through the experiment.

The analysis and decisions for the future educational activities.

At the last level, the decisions will be taken accordingly with the results and conclusions obtained from the analysis of the assessment

results and the feed-back received from the students. Also, it is very important the assessment tests for the class to be a teaching support based on understanding and knowledge, abilities and skills transfer [10], [11], [12].

So, if the educational objectives initially proposed have been fully accomplished at the class level, the passage to a new activity can be made (learning new mathematics notions), that translates into applying level two, for these new proposed objectives. If the objectives have not been accomplished, then based on the analysis, level 5, level 2 must be reformulated. The new initial state for the students acquired knowledge obtained through 4 and 5 is taken into account to re-project the educational path from level 2, to achieve the desired objectives.

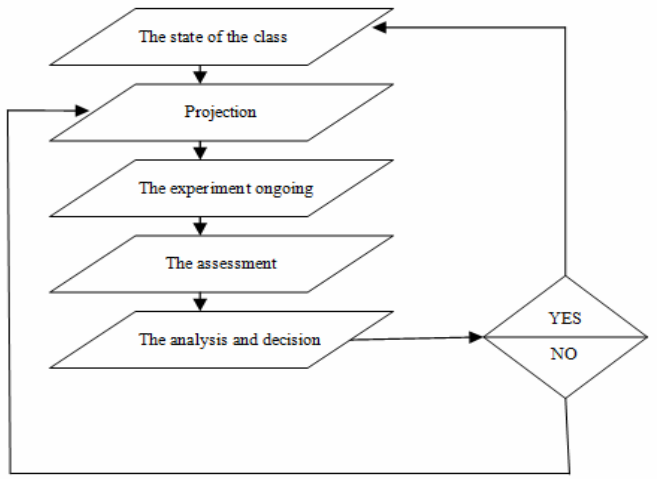

Figure 2. Structure for the education levels

Although not every researcher in the science of education field agrees with the theory of optimal control with feed-back, it can be applied in the educational management on a discipline level. (Fig. 2).

It is true that a mathematical modelling of the teaching, learning, assessment process can not be treated or approached in the sense of a dynamic controllable and commendable system, because the parameters characterising the elements of the system, student and teacher are cognitive, psychological, difficult to describe by objective laws therefore quantifiable, having said that, this theory should be taken into account theoretically speaking. Therefore, it must be underlined the fact that we do not totally agree with J. Piaget's theory on knowledge development, especially concerning its demonstration, which is based on his educational experience, applied on particular cases of students with different ages.

The schema concept in Piaget's theory is defined as a "constructed base block" of the intelligence behaviour, assimilated with a way of organising knowledge. So the schema is a separated entity, isolated well defined and therefore constructed based only on a part of the real world, which may include objects, actions, abstract concepts, but also logic links with the real world, with situations and passed experiences etc. Furthermore, on Piaget's opinion, the child gets to a equilibrium state, which is defined as a state of knowledge, if it extends and uses the already formed schemas in order to describe and understand the world around him. Considering the limit of our expertise in the field of psychology, we believe that assuming a equilibrium state for developing knowledge, in general, for

developing thinking, in particular, must be done well and carefully defined, because the thinking processes linked to knowledge development are and should be, for normal people, far from the equilibrium, as defined in thermodynamic. In other words, the schema itself, in Piaget's vision, can not be in equilibrium, because it grows not only through knowledge, of any kind, but also through more and more complex and diverse experiences.

We can not talk about equilibrium when applying Piaget's theory of the schemas in the case of mathematics knowledge developments, even if the student gets to learn (i.e. the natural numbers, natural numbers operations etc.) and then apply them correctly (i.e. describes them, understands them etc.), because through future experiences with these objects, in proximal spaces (i.e. the whole numbers set, the real numbers set) the student enriches the schema linked to the natural number, and so its knowledge has a complex dynamic governed only by its mind.

So it would be more appropriate to use a phase of knowledge based on the state of a basic schema at a given point in time, instead of a equilibrium state. On our opinion in order to define the sense of the phrase "A realistic mathematic education" we should firstly understand other terms from the theory of education such as: mathematization, mathematical modelling of the real world or mathematization for the real world, etc and transpose them into educational practises. For example at the primary cycle level, the mathematization is not even well defined or applied, at least in our country. From our experience collaborating with the pre-school or

primary teachers, they assimilate the term of mathematization with questioning. By mathematization in general we understand all the educational activities that the trainer does in order to transform a contextual problem (i.e. from the science field, technology, arts, etc.) into a mathematic problem. To be more explicit, if at the third class level from the primary cycle, the teacher formulates the task to build a model of a house, which is actually a practical problem of life, and leave its realisation only after an algorithm based on cutting paper after some templates and then combining them to form practical skills for students is only half a problem performed. If instead, we problematize it as a matter of geometry, transformations then we can say that we have done a mathematization of a contextual problem.

Combining the two approaches leads to a activity of training vertically and horizontally for the student. The examples can go on, but we believe that it is not their place in this paper.

Conclusions

The reform problem in the mathematics education is a world wide concern, for every country, as reflected from the objectives of the international assessment program PISA and more other.

It is difficult to define what exactly this new reform must bring in the mathematics education. On our opinion, knowing the thinking processes of the students during the teaching, learning and assessment process should be based scientifically, i.e. psychologically and pedagogically, but also in terms of an appropriate methodology for mathematics curriculum content and

new technologies of information processing. In any case, countries such as USA, China, Japan, Canada, EU countries, seriously ask themselves this question, where both research institutes in science education and academics specializing in this field research and develop coherent and consistent strategy to define, experiment and implement a new mathematics education for all three essential components: curriculum, teacher and students [16], [17].

Unfortunately in our country things have just began to take shape in terms of educational research in mathematics, instead have applied some of the national reforms that mathematics education has been treated as other non-specific disciplines.

Of course, all beginning is hard and is specific, but we are convinced that education as the driving force behind the development of any society, will require and enforce in the not too distant future humanity to adapt dynamics of globalization and therefore will have to reformulate and to define correct, consistent, harmonious, consonant and effective national education system seen as a whole, even if it consists of several components, preschool, primary, secondary and university.

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ATTITUES OF TEACHERS TOWARDS THE INTEGRATED EDUCATION TREND IN ISRAEL

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Abstract

In 15.7.08, the law pertaining to the "Integrated Education Trend" was accepted by the Israeli parliament (The Knesset). In accordance with the law, the "Integrated Education Trend" aimed at developing a curricula combined both of Jewish Scriptures and Israelite heritage with secular studies. The very law intended to meet both the requirements of the secular as well as religious populations. The research findings, drawn from a quantitative questionnaire (a = .91), revealed that teachers of the religious education significantly held greater defiance to the law of integrated education than teachers of the secular education. It was found that the attitudes of teachers of

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the religious education were both more conservative and more sceptical than teachers of the secular education. Expressions of scepticism by the teachers of the religious education were explained by their fear that the new trend might become a centre of attraction to religious pupils who had been, previously, their devoted clients. On the other hand, expressions of conservatism by the teachers of the religious education were explained by their difficulties to modify their conservative traditional view of Judaism and to settle by a crossbreed of educational trend.

Key words: Integrated Education Trend, public education, religious education

Introduction

Public Education Law of 1953 was designed to separate education from its political connections. Thus, it served as a legislative basis for the two-track division in public education, which bequeathed equal status to both secular and religious education. The law determined that "public education" is defined as state-provided education in accordance with a curriculum determined by this law, not affiliated with any political body, ethnic group, or any another non-governmental organization, and which is under the supervision of the minister of education or his or her designee. "Religious public education" (RPE) is defined as "public education whose institutions, programs of study, teachers, and supervisors adhere to a religious way of life." In the spirit of the law, the purpose of RPE is to serve the public interested in religious education, in all its nuances, in

accordance with the public's political party affiliations, as well as its religious expectations (Book of Law, 131, 1953).

The Public Education Law and its regulations provided RPE with autonomous authority, and the RE department was established in the Israeli Ministry of Education and Culture. The writings of RPE researchers (Schwartzold, 1990) have revealed that while RPE is an integral part of public education (PE), its all-encompassing perception in the religious sector defines it as everything, and not as an addition to general studies as it is viewed in general education (PE). In their opinion, RPE should be viewed as a body aspiring to impart a religious perspective to its pupils in every life aspect—personal, social, national, and an education for life of Torah and good deeds.

Public and Religious Public Education: Semantic Differences

According to Brin (1977), the new Western public school is secular. The word secular comes from the Latin root *saecularis*, which means "connected to an era or generation." Another interpretation is "national and material as opposed to religious and spiritual" (Oxford Dictionary, 1974).

The Hebrew words *hol* (secular) and *hiloni* (secular individual) remind Brin of the Arabic term *halal*, which means to untie a knot. Following,this concept, Brin argues that secularism should be viewed as "breaking the connections to the past and tradition." This school of thought emphasizes the openness and absence of connections (Brin, 1997, p. 120).

Nevertheless, those who are labeled as "secular" have become more and more dissociated from the unflattering connotations and associations of the concepts of *hol* and *halal*, which have been linked to them. In the researchers' view, these secular individuals do not enter the education system empty-handed, but rather with many alternative values; this also explains why the terms "public" or "humanistic" school are preferred over "secular" school.

The concept "religion" bears two essential meanings: one taken from the Latin root *religio*, whose meaning is connection wishes to the spiritual and ethical dimension of our lives, and the second, which is derived from the verb *relegere*, whose meaning is to ponder or deliberate over elementary questions. Within the definition *religiosi*, Brin formulates three overall aims for RE in Israel, which differentiates it from secular education:

1. One should feel that he belongs to his people as well as to all humanity.
2. One is obligated to rise above materialism, to be aware of the meaning of metaphysics, and to recognize that there is a positive force which has created the world and serves as its leader.
3. The Israelite should derive his faith from the intellectual properties of his people, from the past and the present, and see that this faith will contribute to and advance the world.

In the practical realm, Brin differentiates between the religious public education (RPE) pupil, and general (secular) public education

(PE) pupil; In his opinion, the secular pupil lacks vertical identification with his forefathers and his heritage, and he also lacks horizontal identification with the Jewish world Diaspora. Brin further indicates that the secular pupil is frequently drawn to materialistic achievements and does not pose questions about the meaning of life. Moreover, Brin claims that "in the eyes of this [secular] youth, stable values do not exist and there are no compulsory norms" (ibid, p. 123).

The general public education and religious public education – diachronic outlook

RPE is considered the successor of the "Mizrahi" educational movement, as authorized by the Zionist administration in 1920. This movement represented, first and foremost, the perception of the population that views education as necessarily based upon Torah and good deeds; Yet, without such traditional educational patterns as the *Heder* (religious schoolroom) or the "Talmud Torah" (religious elementary school).

Mizrahi's activists requested that the school be instilled with a god-fearing spirit and that part of its curriculum be determined in accordance with the tradition of Jewish education alongside secular studies (Lamm, 1978). It is important to note that the Mizrahi and Poel ha-Mizrahi political parties that cooperated in establishing and maintaining this movement were divided on most of social issues, including issues of Zionist policy. Even nowadays, one could argue that there is deliberation over the character RPE bears. Religious

extremist trends can attest to this, for example, the separation of boys and girls, girls singing in school choirs, as well as the existing internal debate on the current political issues.

While RPE is to a great extent the continuation of the Mizrahi movement, the general public education (PE) mainly implements the ideology of the “General movement" on the subject of “national unity.”

The followers of the General movement viewed this movement’s school system as the education system for all, based upon national general characteristics in accordance with the common denominator with all societal structures, groups, and classes that have come into being in the Land of Israel.

The first General educational movement established in 1913, following the “war of languages” (another aspect of the desire for uniformity), was in fact a branch of the central civilian parties (the General Zionist parties throughout their development) and of the Right parties (the Revisionist parties). This movement laid the foundations for the Hebrew modern school, beginning with the formation of the educational perception via teaching methods, and ending with the curriculum, which expressed a revival of nationality as well as cultural renaissance.

The school was perceived as “the house of creation of the national soul” wherein the awareness of status was considered national betrayal, and the claim for autonomy of social groups considered the uprooting of national culture and heritage (Lamm, 1978).

While the Law of Public Education did not define unique values for RPE, these values are in fact, articulated in the religious education authority documents on educational goals, in introductory educational programs and subjects of instruction. They are also included within research literature pointing to the differences between the existing values of public education and RPE (Peled, 1978; Schwarzwald, 1990).

The religious education system is based on three main principles (Dagan, Loebel, Greenboim, 1992; Kiel, 1977)

1. *Religious education*: A traditional, Jewish religious education that includes teaching belief in God and the performance of commandments, the advanced study of sacred texts and Jewish scriptures maintaining the good deeds in daily life and likewise shape the pupil's religious behaviour and lifestyle according to the *a* Jewish law (*Malachi*).

2. *Modern education*: Teaching the basic skills pupils will need to function as citizens and conduct constructive lives as required of all members of a modern societyin general, and a secular, democratic state in particular. Therefore, the RPE system has created a mandatory curriculum that incorporates secular contents and subjectmatter (math, physics, English, etc.) that will enable its pupils to pass the national matriculation examinations and allow them, upon completion of their education, to either continue with their studies or find a job that will permit them to support themselves and contribute to society.

3. *Nationalist education*: Education with a Zionist perspective, in order to preserve the unity of all sectors of the Jewish people (both secular and religious, as well as Jews living in the Diaspora), to intensify their feeling of identification with and contribution towards the Land of Israel (which is perceived as a territory with religious significance), and to reinforce their sense of loyalty and belonging to the State of Israel and its laws. RE promotes the commandment to settle the Land of Israel.

This section asserts that "the holiness of the Land of Israel and the commandment to settle the land occupy a central part in the RPE perspective" (Dagan, et al, p. 11). There is even a call to instruct about the linkage of the Jewish people to the Land of Israel, to educate towards one's right and obligation towards the land, and to encourage personal fulfillment in settling the land. RE endorses contributing to the homeland through army service in elite military units.

Furthermore, the SRE system requires identification with the state on national holidays, such as Independence Day and Jerusalem Day (in contrast with the ultra-Orthodox sectors which do not celebrate these special holidays). The ideal graduate of the SRE school system is one whose every activity in the private and public spheres is the result of a perspective based on intensive Jewish study, which is then translated into behaviour and lifestyle in accordance with Jewish law, on the one hand, while becoming integrated into the modern way of life and applying the general secular knowledge, on the other hand.

The law pertaining to the integrated public education

In 15.7.08, the law pertaining to the "Integrated Education Trend" was accepted by the Israeli parliament (The Knesset). In accordance with the law, the "Integrated Education Trend" aimed at developing a curricula combined both of Jewish Scriptures and Israelite heritage with secular studies. The very law intended to meet both the requirements of the secular as well as religious populations. The law also specifies that each school which will join the new trend will receive a special funding determned by the minister of education.

The law advocates that at least 75% of the parents should agree before a school becomes " Integrated". Nevertheless, if the school is the only one at the entire dwelling place, 90% of parents agreement is needed (458 protocol of the education committee, Knesset, 2008). During 2009-10, 9 schools joined the new trend. .

To a great extent, the suggestion to include a core curriculum in the various educational trends(Circular No. 3.1-22, of the general management of education, September 1st , 2003) was the first harbinger to bridge the value differentiation between the two educational trends.

In addition to the justifications arising from the development of knowledge, the declaration of the core curriculum also lists the justifications stemming from the need to establish a basis of common educational values: “Throughout the years since the state’s establishment, the society has changed from one of social solidarity

and care for the collective welfare… to a society of many sectors, sophisticated and individualistic, in which the collective values have almost completely disappeared, and wherein individual welfare is characteristic in today's Israeli society, to the detriment of collective solidarity.

These developments led to the recognition of the necessity to formulate a common educational and cultural foundation, in which there are common elements of education and values for the general Israeli society through a basic compulsory program" (Circular of the general manager of Education, September 1st , 2003).

The purpose of this study has been to identify possible differences between teachers of public education (PE) and religious public education (RPE) regarding their attitudes towards the establishment of the integrated education in Israel. The population research included

Tools: A quantitative questionnaire (a = .91) comprised of 18 statements concerning the subject's attitude towards the integrated trend. Factor analysis procedure revealed 3 factors: Scepticism, Conservatism and Avoidance.

Scepticism has been defined as doubting the sustainability of a particular claim, theory, etc.

Conservatism has been defined as the tendency to maintain the status quo.

Avoidance has been defined as the unwillingness to be a part of something or participate in something.

Scepticism (explained 38% of the variance). Demonstrative statements: The new trend will advance only the status of politicians; The new trend will not bridge the ideological polarisation/

Conservatism (explained 30% of the variance). Demonstrative statements: The new trend might expose my children to undesirable contents.

Avoidance (explained 11% of the variance). Demonstrative statements: teaching in the new trend will demand more efforts which I cannot afford.

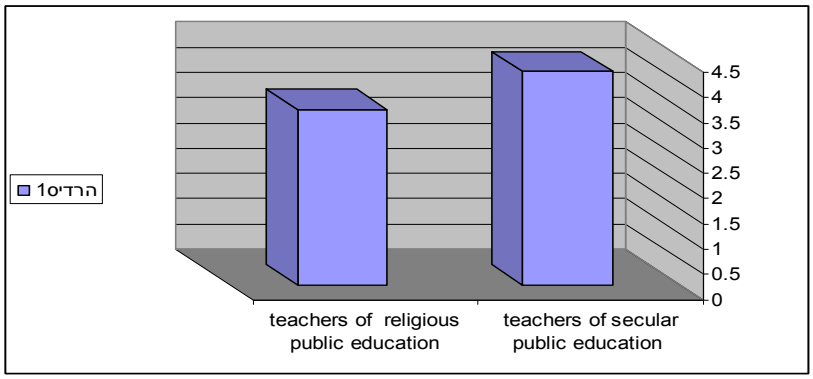
The qualitative tool included one open question as follows: In case you would be asked to teach in the integrated trend, would you agree? Please explain!

Findings

Table No. 1: The means and standard deviations of teachers' general positive attitudes pertaining to the integrated education

T-tests; Grouping: schools' Groups									
	Mean teachers of GPE	Mean teachers of RPE	t-value	df	significance	No. teachers of GPE	No. teachers of RPE	S.D GPE	S.D RPE
teachers' general positive attitudes pertaining to the integrated education	4.217	3.476	3.245	58	0.002	30	30	0.726	1.02

Graph No. 1: The means of general attitudes pertaining to the integrated education of teachers of secular public education and religious public education.

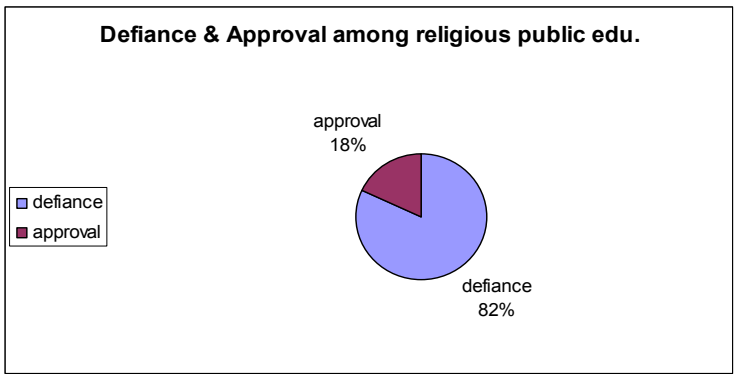


It was found that teachers of the general secular education significantly (P=0.002/2=0.001<0.05) held greater positive attitude to the law of integrated education than teachers of the general secular education.

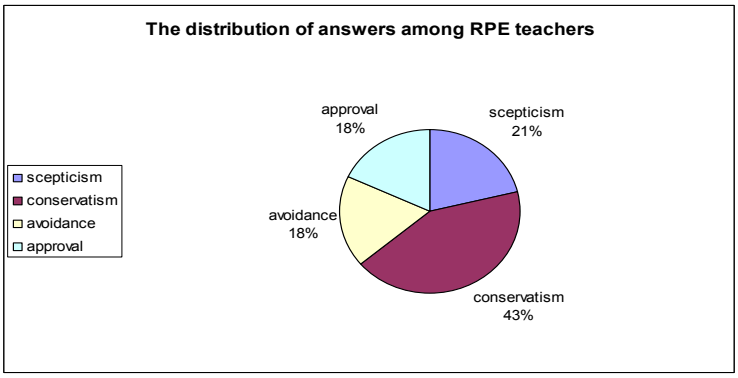
The findings also revealed that teachers of the religious education significantly held greater defiance to the law of integrated education than teachers of the general secular education due to stands of conservatism(P=0.00/2=0.00<0.05) and scepticism (P=0.07/2=0.035<0.05). Nevertheless, no significant difference was found between the trends due to the avoidance factor (P=0.447/2=0.22>0.05) .

The qualitative findings support the quantitative ones:

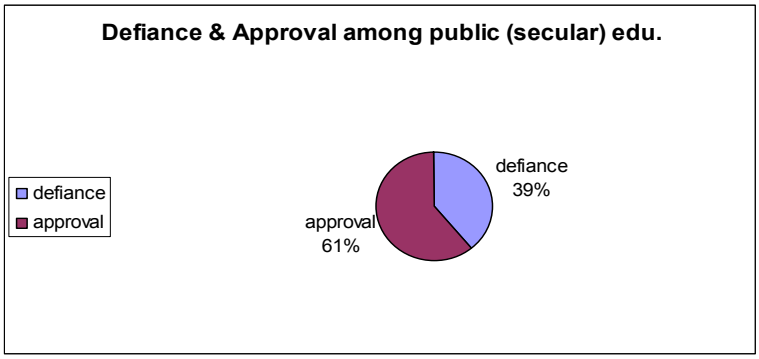
Graph No. 2: Defiance & approval among teachers of religious public education



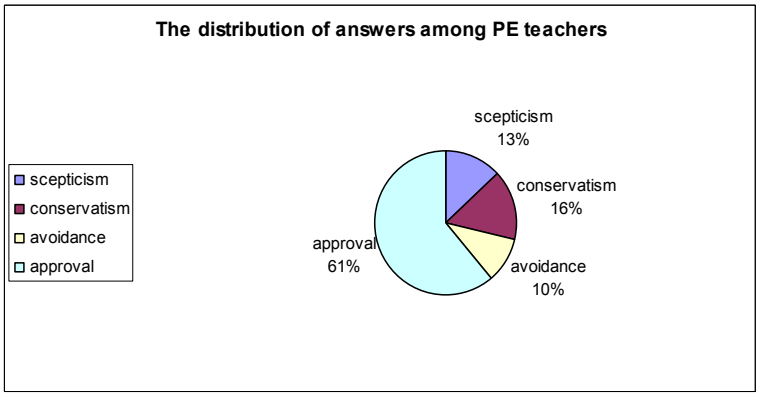
Graph No. 3: The distribution of answers among teachers of religious public education



Graph No. 4: Defiance & approval among teachers of general public education



Graph No. 5: The distribution of answers among teachers of general public education



The difference between the PE & RPE teachers concerning defiance due to conservatism was manifested not only by frequencies alone but also by the intensity of the answers. Whereas the PE teachers expressed mild sayings as "I don't feel connected to this trend" and " I am not interested", the RPE teachers used acute a

reasons as "This is a new as well as dangerous way" and "I am comfortable with my own kind".

Discussion & Conclusions

The research findings, drawn from the quantitative as well as the qualitative questionnaires revealed that teachers of the religious education significantly held greater defiance to the law of integrated education than teachers of the general education. It was found that the stance of the teachers of the religious education was a slightly more sceptical yet significantly more conservative than teachers of the secular education.

It looks as if the need for the enhancement of programs of Judaism largely exists among the PE. Studies conducted in the 1990s show that about half of the population wants their children to have an education that combines Jewish tradition with genuine openness to the modern, democratic world (Zameret, 1998).

In 1991 Minister of Education and Culture Zevulun Hammer appointed a commission headed by the rector of the University of Haifa, Prof. Aliza Shenhar, to re-examine the issue of education for Jewish and traditional values in secular schools (commissions to examine the issue in State-Religious and ultra-Orthodox schools have not yet been formed). The committee submitted its recommendations in 1994; they were endorsed by Minister of Education and Culture Amnon Rubinstein and the government and became the official policy of the Ministry of Education and Culture.

The Shenhar Commission recommended increasing Jewish education in the secular schools and called for encouraging schools belonging to the Tali network (a Hebrew acronym for "reinforcement of Jewish studies"), joint secular-religious schools. The commission also proposed the establishment of special centres to train teachers and offer in-service courses. Nevertheless, these recommendations have been implemented only partially mainly due to the harsh criticism voiced by secular circles when the Minister of Education and Culture Zevulun Hammer, the leader of the National Religious Party, who regained his office due to ellections, stated his intention to set up a "values administration" in his ministry (Zameret, 1998).

Expressions of *scepticism* by the teachers of the religious education were explained by their fear that the new trend might become a centre of attraction to religious pupils who had been, previously , their devoted clients. Their scepticism may be explained by their disbelief that the new trend and their own (RPE) can actually co-exist side by side.

On the other hand, expressions of *conservatism* by the teachers of the religious education were explained by their difficulties to modify their total traditionalistic view of Judaism and their reluctances to violet their commitment to the old school of Jewish education, in practice. This commitment led them to decline " crossbreed of educational trend" which pretend to substitute the original education.

According to the quantitative results, both educational trends revealed similar level **(**intermediate**)** of *avoidance*, namely,

unwillingness to take part in the formation of the Integrated Education Trend or participate in it. It seems as if the excessive reforms have exhausted parts of the Israeli teachers who seek professional stability. According to the qualitative results, the situation is worse among the RPE teachers (twice as much).

Studies (Darby, 2008) showed that success of educational reforms indeed demands primarily the emotional engagement and high motivation of teachers; Organizational as well as curricular factors proved to have less impact than the human factors. An early model of organizational change developed by Kurt Lewin (1947), described change as a three-stage process. The first stage he called "unfreezing". It involved overcoming inertia and dismantling the existing "mind set". Defence mechanisms have to be bypassed. Only then the second stage which is the implementation of the very change and the third and final stage, the crystallization of the change, may occur.

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THE EPISTEMIC REPORT OF PEDAGOGY WITH THE EDUCATIONAL SCIENCES IN THE VISION OF THE ITALIAN TEACHERS

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Abstract

This paper examines the place and role of pedagogy in the context of educational sciences, highlighting the opinions of Italian teachers about the theoretical and practical valences of the contemporary pedagogy their reflection in the epistemology of education sciences. The second half of the twentieth century marked a radical transformation of pedagogy, the transition from teaching to educational science, transition which led to the redefinition of identity, renewal of the boundaries and moving the epistemological centre of gravity of pedagogy. The scientific issue, closely linked to the epistemological autonomy of pedagogical knowledge represents the theoretical background on which the emerging problematic relationship between pedagogy and various sciences that deal with education are based.

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Key words: human sciences, Italian pedagogy, science of education

Needing to question its own theoretical and empirical status, pedagogy was always looking for new paradigms to legitimize its identity. Pedagogy engaged in intense debates about its research directions. It developed a deep reflection of its theoretical and operational specification.

Pedagogy maintains relations with other sciences, especially the social and human sciences. Gino Dalle Fratte analyses the relation of pedagogy with other human sciences. The author inventories (grouping them into four classes) the solutions made by Italian pedagogy (Dalle Fratte, 1986, p.23):

1. *pragmatic solutions* - argue that pedagogy does not have an autonomously object of study. Therefore pedagogy turns to other sciences that can follow the pragmatic purpose of education. The limits and dangers of these positions, Dalle Fratte warns, consist, on the one hand, on the reduction of the epistemic rigor of the pedagogical discourse, and on the other hand it relies too much on the contribution of the other sciences.
2. *reductionist solutions* - tend to reduce pedagogy to psychology or sociology. Such solution have the disadvantage that limit the educative action because they limit the human reality through a unilateral approach, psychological or sociological.

3. *philosophical solutions* - refer to the traditional approaches, according to which pedagogy is an applied philosophy. The specific of pedagogy is thus ignored, as an autonomous science. It's the clear expressed position stated in Italy, at the beginning of the century by Giovanni Gentile, position countered afterwards by the extensive pedagogical literature, from the second half of the twentieth century.
4. *methodological solutions* - consider the term pedagogy as a common name for a plurality of sciences dealing with the educational phenomena, without dissolving pedagogy in an amount of specializations. The unifying moment is realized through a practical projective synthesis elaborated on the information received from the sciences of education.

The solutions of the fourth category are closest to our way of conceiving and understanding pedagogy.

In our opinion, *pedagogy is the most important science of education,* which *serves as an epistemic benchmark for other sciences operating in the pedagogical area*.

Since the '50s, pedagogy recorded a real revolution and a deep image transformation: *moving from pedagogy to sciences of education*. The sciences of education were stated under that name in the second half of the twentieth century, when "they were talking about a final and total conversion of pedagogy into the sciences of education." (Cambi, 2000, p.4)

Pedagogy knows in the second half of the twentieth century a radical transformation, with the appearance and proliferation of

educational sciences, which led to the redefinition of identity, renewal of limits and movement of the epistemological centre of gravity of pedagogy."From a unitary and «closed» knowledge it has passed to a plural and open knowledge." (Cambi, 2005, p.111)

Aldo Visalberghi organizes the sciences of education in an *educational encyclopedia*, grouped in four sectors: the psychological sector, the sociological sector, the methodological sector, the content sector. The Italian pedagogue awarded in this scheme, to general pedagogy an external, objective position, because it represents a moment of critical reflection on the entire set of sciences of education. *General pedagogy* is the one that reflects on the foundations of educational sciences. Also, Aldo Visalberghi distances himself from the phenomenon known in Italy of replacing the term "pedagogy" with "science of education" because it is quite "*right to still talk about pedagogy, to indicate the most general and planned approach of the educational problems.*" (Visalberghi, 1978, p.9).

Giovanni Genovesi emphasizes the fundamental role of pedagogy in the science of education "*because it provides the epistemological matrix of all the science of education*" (Genovesi, 1995, p.18).

Many Italian teachers S. De Giacinto, 1977; G.Cives, 1973, G.M.Bertin, 1971, 1978; C.Pontecorvo, 1975; P.Bertolini, 1988), from the 70s and 80s, have attempted to provide an epistemological reflection about the relationships between different sciences of

education, all agreeing that none of these sciences can substitute pedagogy.

Given the vastness of the domain that aims to study – education, pedagogy, over time, was forced to seek help from other sciences already established or being established. The identity of pedagogy is marked by its existence as a science in the context of balanced relationship, of mutual exchange with other sciences. The shift from singular to plural, from pedagogy to sciences of education, was a crucial moment in the evolution of pedagogy, even threatened to disappear, dissolved in the sciences of education, and in the '60s it dressed the sizes of a true paradigm shift. Although widely embraced, the expression of sciences of education recently started to raise many questions.

In the Italian pedagogy we find quite few classifications of the operating sciences in the educational field. Mario Gennari and Anna Kaiser (Gennari, Kaiser, 2000, p.15-16) classify these sciences in *pedagogical sciences* (developed directly from general pedagogy), *educational sciences* (emerged from the encounter of pedagogy with the other sciences) and *training sciences* (include the *pedagogical sciences* and *the sciences of education*).

Franco Cambi points out the specific elements of the educational sciences in the postmodern context: A) the pluralism of the models of knowledge, B) their interdisciplinarity, C) encyclopedia in movement and increasing specialization. (Cambi et al., 2001, p.9)

One of the key issues faced by pedagogy is the difficulty to rethink the autonomy of pedagogical knowledge with a conceptual

reference apparatus without dissolving itself in the sciences of education.

General pedagogy has a collaborative relationship with the other sciences concerned with the education, it grants methodological and praxiological support to these sciences. Educational sciences are very different from *general pedagogy* from the perspective which relates to education. Each of them offers a *specific view* on the educational phenomenon. The issue is open and it is not easy to solve in a final manner.

As far as we are concerned, we believe that *pedagogy has a very central place in relation to the other sciences of education*, because *no science of education appears if it has no educational basis*. General pedagogy provides the general reference framework, ensures the epistemic basis of all the sciences concerned with the study of education, it offers tools and training models.

What is the contribution of pedagogy to the development of these sciences of education? What kind of contribution can provide the sciences of education, both to the educational action and to the educational sciences as a whole?

In our opinion, pedagogy was the base for the sciences of education, and for the educational psychology, educational sociology, economics of education, valuing the notions of economics, sociology, psychology for understanding the pedagogical issues.

Pedagogy has founded the sociology of education, based on the social pedagogy chain. *The sociology of education* takes the social

theories about society and observes how they contribute to the understanding of education; it deals traditionally with phenomena of the school system, but it does not limit exclusively to them. It expands its domain to other phenomena to emphasize the specific nature of the sociological knowledge applied to education.

Social pedagogy is an interdisciplinary science that reflects the social. It operates inside social issues. The relationship between *social pedagogy* and *general pedagogy* is a complex and dialectical relationship, as it happens with the other sciences, providing the thematic and designing opening to critically theorize the educative action. The social pedagogy uses a number of concepts from the general pedagogy, assuming the role of *preparing man to manage critically the reality and the culture of his time*.

Social pedagogy places in the centre of the speech the subject: the post-modern man, the man concerned, sensitive to mass-media suggestions and disoriented by the consumption market. The main themes of social pedagogy aim: the institutions present in society (family, school, leisure, work) in their dynamics, social groups (gender, cultural, ethnic) with their needs / their educational requirements.

Sociology of education and *cultural anthropology* share the same field of research: the relationship of man with his context. In light of this report are interpreted different phenomena and human behaviours, including those related to education, to the relationship with their own group, their own history, their own language, their own culture.

The cultural anthropology studies the cultural representations. It fulfils a cultural mediation role oriented to combat prejudice – for example it tries to dismantle the stereotypes concerning the so-called *primitive* cultures, recognizing the difference. Studying the mechanisms of enculturation, i.e. the ways in which one generation transmits its cultural heritage to successive generations, you reach to a real identification of the object with the pedagogy. Enculturation happens through example and habit. The subject grows inside a culture. It impregnates itself in the process of its development with specific elements of the culture within which it lives, with the characteristics of the people to whom it belongs, with the particularities of time that it crosses. The enculturation processes reveal their geo-historical specificity, even if it is governed by universal elements, such as language and social status assimilation, present in the reference (community, school, etc.).

Sociology, on the other hand, is careful not to distant cultures (*primitive*), but to the society that produces the culture. *Society* represents its own object of research. Phenomena such as illiteracy, school dropout etc., are fields of interest for the sociology of education.

In *the relation to psychology*, pedagogical knowledge is enriched with important knowledge on development, learning, interpersonal communication. Pedagogy has provided educational psychology with its entire device of knowledge. Pedagogy has acquired the knowledge that is necessary to deepen the study of interaction between curriculum content and cognitive processes of the subject,

i.e. between scientific and cultural content that the student must approach and the specific and genetic ways that the subject builds its own knowledge, taking into account the multiplicity of cognitive styles existing in the human being.

Educational psychology has taken elements of learning theory and the training models developed. Traditionally, *educational psychology* explored the teaching and learning processes. Particular attention was given by this discipline to themes referring to the cognitive development and to the thought training and then on the psychological mechanisms underlying learning (Pontecorvo, 1985). Analyses from the emotional sphere of personality, of motivation and of attention were added to this. Between pedagogy and psychology, through the educational psychology, there is a mutual exchange of knowledge.

Educational psychology provided pedagogy the psychological basis necessary for the understanding of the two agents, the educator and the educated, of the relations between them, of the possibilities of improving this relation. Pedagogy is offering psychology the tools needed to interpret the pedagogical. The interdisciplinary relation of pedagogy with psychology underlies the pedagogical conceptions of Maria Montessori.

The epistemology of pedagogy indicates that part of the general theory of pedagogical knowledge dealing with the philosophy of pedagogy, i.e. with the fundamentals, the nature, the limits of validity of its scientific knowledge. However, the epistemology of pedagogy attempts to unravel the mysteries of this science, listening

to the plurality of proposals that advance their pedagogical discourse. It is both a manifestation of the need for reflexivity of discourse and on its machine and also a tool of control and projection of educational planning.

Pedagogy is the science that speaks about the human. In the centre of the pedagogical reflection stand the man and its creative thinking. The theme of pedagogy is to rethink and examine the postmodern dimension of the social human from an educational perspective, through a process of critical understanding of all the elements that characterize it. In our opinion, *pedagogy ensures the development basis for all the other sciences of education*.

We briefly present some of the science of education and their research fields:

- *History of pedagogy* - analyses the epistemological conditions of pedagogy and integrates it into the general scientific frame;
- *Special pedagogy* - operates for school in educational contexts used by the school;
- *Experimental pedagogy* - deals with scientific research in education;
- *Pedagogy of adults* – also called *Adult education* - deals with specific issues of the adults such as re-education and training;
- *Comparative pedagogy* - also called *comparative education* - deals with the analysis of educational practices in relation to

the educational and training systems of other nations and cultures;

- *Family pedagogy* - deals with specific issues of childhood and family;
- *Economics of education* - are taken ideas of efficiency, planning, effectiveness and we relate them to the teaching, the education policy in the field of education resources.
- *Philosophy of education* - concepts of finality, of law were taken from philosophy.

In our opinion, pedagogy coordinates all those sciences that can provide significant data and information to represent and understand better the subject's entire approach to training. *The sciences of education do not have a centre focused on the subject's training in an absolute sense*, but deals with particular aspects of the development of the subject to adulthood.

The crisis of pedagogy as an unitary knowledge was due to the "*auxiliary sciences*". They have rewritten the internal identity, fractionating it and spreading it across various sectors. What disappears is the normative type of philosophical knowledge, and also scientific, but oriented exclusively in pragmatic sense. Various scientific and / or philosophical contributions coordinated in a theory way consists in that knowledge coherently focused on education issues which takes the name of pedagogy. Such knowledge disappears as the sole benchmark of education and of its problems, but it is not cancelled. She moves on the field of epistemological and historical reflection around the issue of education and appears as one

of sciences of education. *Now,* pedagogy is a key sector of pedagogical knowledge and does not struggle to invade the land of sciences of education. It has *its* domain, *its* methods and *its* goals. Thus, "pedagogy today is largely transcribed in educational sciences and only starting from them we can tackle the educational issue." (Cambi, 2003, p.340)

The reasons for the shift from pedagogy to the sciences of education can be found in "the wealth of specific knowledge, definitions, proposed by: psychologists, sociologists, anthropologists, but also philosophers, historians, linguists, etc. It comes in a range - more extensive – of knowledge patterns that tend to be part of pedagogy." (Cambi, 2000, p.4)

The sciences of education become resources of knowledge in the pedagogical area due to their specific character oriented to form / educate. They are the "vector and direction of their development in modern and post-modern pedagogy". Pedagogical knowledge goes, in this context, from various sciences, engages them, and not only mix and assimilates them, but also directs them - after an-end, which is formative/educational. In this game, pedagogy comes back, as a general knowledge of training. (Cambi, 2000, p.5)

In the same perspective, coordinating the knowledge derived from the sciences of education was achieved through a reflexivity on the specific of pedagogy, i.e. on the education / training.

The pedagogical, psychological, sociological, anthropological and sometimes even economic sciences of education try to describe, to explain how educational process is organized and how it operates

in general, especially in school. They analyze what pedagogical effects does it produce in relation to the social, economic, political requirements of the educational institutions that represent the interests of the company (or government or power).

Starting from the philosophical root, the sciences of education reflect on the human destiny and on the conditions that influence the human existence. On the other hand, the sciences of education relate to the exact sciences, sharing their aspiration to absolute precision and rigorous description of all phenomena. It may be noted, however, that the philosophical aspect of the sciences of education contrasts with their scientific aspect, because in the pedagogical field it is impossible to specify the accuracy specific to the natural sciences. Therefore, the philosophical discourse is *the discourse of whole* (the functions, the structure, the purposes, the values) while the scientific discourse is always *the discourse of parts* (applied didactics).

The pedagogical knowledge attempts to re-establish a unity of substance between the reflection on the destiny of humanity and the strategies, techniques and scientific procedures by which this reflection is reflected in the human education.

In common language, *the sciences of education* are of two types (Visalberghi, 1965, p.138):

- *human sciences* - deal with the educational processes after two different disciplinary approaches; psychology, sociology, cultural anthropology, biology, linguistics, cognitive sciences etc.;

- *pedagogical sciences* - deal with the scientific work of various areas.

In our view, including the human sciences, such as psychology, biology, linguistics etc. within the educational sciences is forced or even malicious. We do not agree with the saying which can maintain ambiguity, we consider it reductionist or even negligent. We are attempting to introduce the term sciences of education and other sciences without establishing the relation with pedagogy. These sciences can explore only certain aspects that relate to their specific and relate to education, but that did not fully qualify them as sciences of education. For example, biology re-evaluates inter-disciplinarity, aspects that are related to biological development and growth, interpretable educationally, helping to deepen the pedagogical concept of educability.

According to Mario Gennari and Anna Kaiser (Gennari, Kaiser, 2000, p.15-16), general pedagogy guides and controls: *the pedagogical sciences*; *the educational sciences and the sciences of training*.

Pedagogical sciences represent the knowledge developed directly from general pedagogy. For them, pedagogy plays a founding role.

The educational sciences have emerged from meeting the other sciences. For them, pedagogy plays a guiding role.

The sciences of training comprise the *pedagogical sciences and the sciences of education*. For the *training sciences* pedagogy is a reference science.

In our view, the attempts to define the identity of pedagogy in the context of sciences of education appear rather problematic because the sciences that investigates the educable are defined, first of all, by their goals and then by the techniques and their means of action. The disciplines concerned with the study of the educable are trying to investigate, on the one hand, many aspects of the individual's reality, and on the other, the environmental conditions in which the educational activity takes place.

Among the priority needs of pedagogy, there is the one to reach a "scrupulous and rigorous self-knowledge". In fulfilment of this effort, pedagogy can not deny the need to establish a dialogue with other knowledge models. In this sense, "general science of training and educating the man is self-sufficient" or autarchic (i.e. in a situation of self-isolation). (Gennari, Kaiser, 2000, p.45)

The use of the knowledge that the sciences of education offer is needed for studying the educational and formative dimension of man. Pedagogy is thus in *an interdisciplinary cooperative relation* with other knowledge models interested in educating.

This allows the individual sciences to escape the usual heuristic perimeter, to open to the dialectical forms of knowledge and dialogue. Dealing and liaising with other areas of knowledge offers pedagogy the possibility to consolidate its epistemological status. In an interdisciplinary report, pedagogy preserves identity and difference, defends the its generality and specificity and approaches the plurality of knowledge models that compose its identity. (Sola, 2002, p.51)

Pedagogy maintains intra-disciplinary relations, intense interdisciplinary connections, builds trans-disciplinary approaches (Gennari, Kaiser, 2000, p.14-17):

- *intra-disciplinary relations* - refer to *the pedagogical sciences;*
- *interdisciplinary connections* - refers to *the sciences of education;*
- *trans-disciplinary approaches* - aim at *the training sciences.*

Pedagogy refers specifically to each set of science.

- When pedagogy is placed in a *interdisciplinary* relation with the *pedagogical sciences*, the dialogue way with them is radical, leading pedagogy to be a "*founding knowledge*". *Intra- disciplinarity* refers to a closer relation that checks *within* the sciences that operate as sub-fields of pedagogy.
- When addressing the *educational sciences*, education acts as a "orienting knowledge". Interdisciplinarity evokes a dialogue *between* disciplines that deal with education.
- When pedagogy approaches the sciences of training it is a "*reference knowledge*". Transdisciplinarity places pedagogy *beyond* its specific as a science. This does not determine the exit of pedagogy from its own shape, but contributes to its involvement in all those forms of knowledge which develop culture.

Moving from pedagogy to the sciences of education was done due to epistemological reasons and because of a historical-social type

of arguments: the development of a society becoming more and more dynamic and open claimed the formation of people able to cope with social, cultural and technical innovation. To achieve this training, people needed a new pedagogical knowledge emphasizing the experience, being thorough and open to the analysis of its evolution.

Dealing and liaising with other areas of knowledge offers pedagogy the possibility to consolidate its epistemological status.

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THE STUDY OF PSYCHO-PEDAGOGICAL SUBJECTS FOR THE STUDENTS OF TECHNICAL FIELD: FROM EMPIRICAL PERCEPTIONS, PREJUDICES, TO SCIENTIFIC OPINIONS

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Abstract

This study suggests a functional questionnaire built and validated in several stages, having the purpose to gather the level of difficulty in the study of the psycho-pedagogical subjects perceived by the students with technical background, related to the self-evaluation of the technical aptitudes and the preference for the technical field. Research wants to validate only three hypotheses of work.

Key words: level of difficulty, pedagogical disciplines study, perceptions, technical field.

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1. Introduction

The teacher of humanities formation who teaches subjects in this field to the students of technical field (within the Department for the Formation of Teaching Staff existing in universities of technical field) can anticipate certain difficulties in the study of the subjects presented. The cognitive profile of the student with real interest in the technical field is well outlined (the reflexes of the logical-mathematical thinking being predominant), which can make us consider that they have a more reduced opening towards non-technical fields.

Theoretically speaking, some features of the engineer's profile are presented in incompatibility with those in the social-humane profile, yet the practical experience shows us that the students, future engineers who obtain high marks in subjects of technical specialization, succeed in getting high marks even in a second specialization, the psycho-pedagogical one. How real is the supposition that the students of technical profile perceive a high level of difficulty in learning psycho-pedagogical subjects will be tested in this study.

The population of students in the faculties of technical profile has become so diverse when it comes to interests and aptitudes, that a percentage of about 30% of the students are preoccupied for real of the engineering field. (The percentage suggested is an average of the percentages indicated in an interview with 40 professors who teach technical subjects at the 11 faculties at the Technical University of Iasi.) The remaining percentage of students (70%) are maybe those

who pass through the faculties of technical field in search of personal or professional opportunities, having various motivations to graduate from the faculty, not necessarily in affinity with the engineering field. We could suppose that only for 30% of the students (those with real interests and aptitudes for the technical field) the study of psycho-pedagogical subjects is more difficult than for the rest of the students.

Our teaching experience shows us that the students of technical field generally face some difficulties in studying subjects specific to level I and II in psycho-pedagogy. We do not mean here the problems of space, time, schedule, and others that inherently interfere, but the difficulties of learning, as they are perceived by the students who opt for a second specialization in a curricular area completely different from the technical one. Some aspects of oral and written presentation of the courses can be perceived as obstacles in their study.

For example, “the pages written compactly at courses seem logically unstructured; the lack of graphics, tables, diagrams makes the study difficult; the language of the psycho-pedagogical subjects seems difficult, redundant with ‘adornments’; there is a need for the information transmitted to be only essential one, presented clearly and concisely, without too much development, extensions, etc.” We do not know yet to what extent such difficulties are recognized by the students in their approach of studying, and how it affects their school results in the subjects mentioned.

2. Work Method

The questionnaire used in this study was built according to an empirical model in several stages. In a first stage, it started from the hypothesis that there is a core of cognitive features that characterizes the student of technical background, involved in the process of learning. 60 students in the generation studying in 2009, in different years of study, indicated 4-5 features by answering the question: "Which are the features/characteristics specific to the engineers that help you study the technical subjects?" There were features with high frequency, such as: preference for logical thinking, approach or the logical structuring of the information, the concise expression and to the point, practical/technical aptitudes and skills, preference for practical technical applications.

Also, we gathered the students' answers to a second question: "Which were the main difficulties in studying psycho-pedagogical subjects?" Among the answers to this question, we gathered those related to the cognitive processes involved in learning, the way of structuring the information, and the way of teaching the psycho-pedagogical subjects.

In the second stage, the answers to these two questions were classified into 32 statements, the future items of the questionnaire initially. For the answers, it was used a scale of Likert type in 5 stages (value 1 meaning to a very low extent the agreement, and value 5 to a very high extent the agreement).

In the third stage, the initial questionnaire was applied to 96 students of the technical field, to pre-test the instrument. After a first factorial analysis of the data in 32 items, were kept only 15 items organized into 3 factors for which it was calculated the index of internal consistence. Alpha Cronach for each factor (see figure 1) has a value of more than 0.7, which indicates an acceptable fidelity of the standardized instrument elaborated.

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics- Factorul 1

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
I5	15,1610	16,7174	,4533	,7470
I6	15,5085	15,3461	,5776	,7150
I11	15,3051	15,3762	,5623	,7190
I13	14,8898	15,9621	,4496	,7504
I14	14,3729	17,1760	,4399	,7500
I15	15,3136	15,1914	,5841	,7130

N of Cases = 96,0 N of Items = 6

Alpha = ,7672

Item-total Statistics-Factorul 2

I1	11,1695	6,1078	,5749	,7160
I2	11,1102	7,1074	,4841	,7599
I3	11,3898	5,5903	,6573	,6688
I7	10,8475	6,3184	,5832	,7114

N of Cases = 96,0 N of Items = 4

Alpha = ,771

Item-total Statistics- Factorul 3

I4	16,4746	6,4566	,4182	,6892

I8	16,3305	6,8898	,4251	,6801
I9	16,2288	6,6395	,5157	,6438
I10	16,1525	6,5064	,5977	,6136
I12	16,0678	7,1578	,4093	,6853

N of Cases = 96,0 N of Items = 5

Alpha = ,7109

Figure 1. Output-uri –Reliability Analysis-Scale Alpha for 3 Factors

Factor 1 (Difficulties in the study of the psycho-pedagogical subjects) (with 6 items) gathers the most frequent difficulties in studying the psycho-pedagogical subjects mentioned by the students of technical field in the generation 2009.

Factor 2 (Self-perception of the technical aptitudes) (with 4 items) shows to what extent the students of the technical field consider that they have cognitive/ technical aptitudes specific to an engineer. It was necessary the introduction of such a dimension, because not all the students that join a faculty of technical profile have professional aptitudes or interests for this profile. Actually, we are interested in differentiating the students with real technical aptitudes/interests from the others who join the faculty out of other reasons. We wanted to follow how the first perceive the study of psycho-pedagogical subjects or certain difficulties related to them.

Factor 3 (Preference for logical-mathematical thinking) (with 5 items) indicates the preference for logical-mathematical thinking, arguments and expression. It has a positive and high relation with factor 2. This factor will discriminate additionally among the students with real technical aptitudes and those who only evaluate

themselves as having technical aptitudes. We consider too subjective the self-evaluation of the technical aptitudes; that is why the preference for the logical-mathematical thinking will indicate more clearly those cognitive abilities for the technical field. The students with high score for factors 2 and 3 will be considered as having a profile closer to the engineer one, and their perception in learning the psycho-pedagogical subjects will be our main interest.

The final questionnaire was applied to 118 students who graduated psycho-pedagogical level I and II in 2013, with the following structure: 53 men and 65 women aged between 20 and 55 years old; 74 graduated of level I and 44 graduates of the Department for the Formation of Teaching Staff level II in various faculties at the Technical University of Iasi. The structure of the lot of subjects according to the criterion of faculty is as follows: Faculty of Construction of Machines – 12 subjects; Faculty of Civil Engineering – 27; Faculty of Chemistry – 30; Faculty of Architecture – 12; Faculty of Hydrotechnics – 8; Faculty of Automation and Computers – 8; Faculty of Textiles – 6; Faculty of Electronics – 4; Faculty of Science of Materials – 8; Faculty of Mechanics – 3.

3. Hypotheses of the Study

We stated the following hypotheses based on various perceptions or even prejudices practised in the didactic activity with the students:

Hypothesis no. 1: There are important differences in Factor 1 among the students of technical field according to the variable level of psycho-pedagogical studies and type, in the sense that the

graduates of level 1 consider more difficult to study the psycho-pedagogical subjects compared to those of level 2, and the subjects of masculine gender perceive as being more difficult these subjects than the subjects of feminine gender.

Hypothesis no. 2: A percentage of 50% of the students of technical field perceive themselves as having low or very low technical aptitudes. In other words, there is a high frequency of the very low and low values for Factor 2 – the self-perception of technical aptitudes).

Hypothesis no. 3: The students with technical aptitudes of high level (high scores cumulated for Factors 2 and 3) report at a higher level the difficulties of studying the psycho-pedagogical subjects than the students who perceive themselves with technical aptitudes of low level.

4. Results and Discussions

In view of proving hypothesis no.1, it was checked the type of distribution of the results for Factor 1 and it was noted that it is a normal distribution (Test Kolmogorov Smirnov, Zks = 0.92, p = 0.35). It was applied Test t for independent samples, after balancing the number of subjects in the 2 samples, namely among the 74 subjects who graduated level 1, were selected at random only 47 subjects. All the 44 graduates of level 2 remained for the statistics processing. The results are presented in figure 2 below:

Group Statistics

	nivel studii psihopedagogic	N	Mean	Std. Deviation	Std. Error Mean
Factorul '	nivel 1	47	2,8617	,63638	,09283
	nivel 2	44	3,1288	,94272	,14212

Independent Samples Test

		evene's Test fo uality of Varianc		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	g. (2-taile	Mean ifferenc	Std. Erro ifferenc	Lower	Upper
Factori	Equal varia assumed	4,986	,028	-1,593	89	,115	-,2671	,16765	60019	06602
	Equal varia not assum			-1,573	74,790	,120	-,2671	,16975	60526	07109

Figure 2. Output-uri according to the level of education variable

Because the variances for the two groups are significantly different (F = 4.986, p = 0.028), a test t was used for unequal variances. The arithmetic mean for the values of Factor 1 in the students of level II (M = 3.12, SD = 0.94) is not significantly higher (t = -1.57, df = 74.7, p = 0.12) than that of the students of level I (M = 2.86, SD = 0.63). Even though the graduates of level II perceive a higher level of the difficulty of studying the psycho-pedagogical subjects than the graduates of level 1, this difference is not significant from the statistic point of view. The explanation is obvious, given the fact that level 2 of psycho-pedagogical studies is an in-depth one, when the degree of difficulty of subjects is increased.

According to the independent variable gender, among the values of Factor 1 there are no significant differences (t = 0.17, df = 89, p =

0.86) (see figure 3). Even though the subjects of masculine gender perceive slightly more difficult the psycho-pedagogical studies than the subjects of feminine gender, this difference is not significant from the statistic point of view.

Group Statistics

	gen	N	Mean	Std. Deviation	Std. Error Mean
Factorul 1	masculin	35	3,0095	,85934	,14526
	feminin	56	2,9792	,77854	,10404

Independent Samples Test

		evene's Test fo ality of Varian		t-test for Equality of Means						
									5% Confidenc Interval of the Difference	
		F	Sig.	t	df	g. (2-taile	Mean ifferenc	Std. Erro ifferenc	Lower	Upper
Factor	Equal vari assumed	,419	,519	,174	89	,862	,0304	,17461	31659	37730
	Equal vari not assum			,170	56,941	,866	,0304	,17867	32627	38699

Figure 3. Output-uri according to the independent variable gender

The results above contradict the work hypothesis no. 1 and confirm that there are no significant differences between the graduates of level I and II when it comes to appreciating the level of difficulty of the studies in the Department for the Formation of Teaching Staff. Even though only 10 graduates of level I in 47 report the study of these subjects as difficult, 22 graduates of level II (module II), namely half (out of 44) agree with it, the figure showing a more complex level of the study in module II.

In order to identify correctly the frequency of intensity with which each factor manifests itself for each subject, it was formed a standard (according to the gender) with five levels of intensity (very low, low, average, intense, very intense). We were interested only in extreme intensities of manifestation of the factors, which we grouped as follows: very low with low, and intense with very intense for each factor. In the table below, we can notice the frequencies per factors according to the gender (53 subjects of masculine gender, and 65 subjects of feminine gender):

Factors	Very low and low intensity		Average intensity		High and very high intensity	
	frequency M	frequency F	frequency M	frequency F	frequency M	frequency F
Factor 1	17	26	16	14	20	25
Factor 2	24	34	9	14	20	17
Factor 3	20	30	12	10	21	25

Figure 4. Table of intensities and frequencies for the 3 Factors

According to the standard formed, the values comprised between 1 and 3.7 (for the masculine gender) and 1-3.5 (for the feminine gender) represent the very low and low intensity with which manifests itself Factor 2, referring to the work hypothesis no. 2. A number of 58 subjects (out of the total of 118) perceive themselves as having a very low or low level of technical aptitudes, which represents a percentage of 49.1%.

It is partially confirmed hypothesis no. 2, because the percentage is very close and we can say that almost half of the total of the students participating to the research admit having a low level of

technical abilities, and that they do not prefer the work in a laboratory in form of technical applications, and that they do not understand/study more easily for the technical subjects than for the humanities ones (psycho-pedagogical). This percentage of students who admit not having technical aptitudes, but joined a technical field, succeed in reaching the third year of studies for graduation, since they graduate the module I psycho-pedagogical. Even though they are aware of the lack of technical aptitudes of a certain level, they have a motivation that supports them to graduate from the faculty.

The verification of hypothesis no.3 determined the creation of a Factor 4, cumulated from Factors 2 and 3, which we called "Technical Aptitudes" Factor, combining the subjective evaluation of the level of development of the own technical aptitudes with preference for the logical and mathematical thinking. There is the prejudice among the professors of humanities orientation that the students with high technical interests and aptitudes will study with great difficulty the socio-humanities subjects, and that is why the hypothesis wants to credit or not this prejudice.

A number of 42 students consider that a low and very low level of development of Factor 4; 27 students an average level, and 49 students a high and very high level. The hypothesis of work no.3, in other words, supposes that these latter 49 students report a high level of difficulties of the study in the psycho-pedagogical subjects comparing with the 42 students who have low technical abilities.

In order to verify if there are significant differences between the dependent variable described by Factor 1 (Difficulties in the study of the psycho-pedagogical subjects) and various conditions of the independent variable represented by Factor 4 (students with low, average, and high technical aptitudes), we used multiple comparisons with Anova. The results can be noticed in figure 5. The first table represents the results of the variance analysis. The ratio F for the effect between the groups (level of technical aptitudes) is F = 2.408 with a level of signification p = 0.094, namely p > 0.05, which indicates that this effect is not significant.

Generally, the means between the groups do not differ a lot among them, which means that the level of difficulty of the psycho-pedagogical studies is not appreciated according to the level of development of the technical aptitudes. The second table presents the multiple comparisons that suggest the same thing: the differences between the means of the sub-groups are not significant, as it is shown by the values in column 4, the values of p (in table 2, figure 5).

ANOVA

Dificultati in studiul disciplinelor psihopedagogice

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,869	2	1,435	2,408	,094
Within Groups	68,507	115	,596		
Total	71,377	117			

Multiple Comparisons

Dependent Variable: Dificultati in studiul disciplinelor psihopedagogice

	(I) FACT4_G	(J) FACT4_G	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	1,00	2,00	-,2156	,19039	,496	-,6677	,2365
		3,00	-,3554	,16230	,077	-,7408	,0299
	2,00	1,00	,2156	,19039	,496	-,2365	,6677
		3,00	-,1398	,18499	,731	-,5791	,2994
	3,00	1,00	,3554	,16230	,077	-,0299	,7408
		2,00	,1398	,18499	,731	-,2994	,5791
Scheffe	1,00	2,00	-,2156	,19039	,529	-,6878	,2565
		3,00	-,3554	,16230	,095	-,7579	,0471
	2,00	1,00	,2156	,19039	,529	-,2565	,6878
		3,00	-,1398	,18499	,752	-,5986	,3189
	3,00	1,00	,3554	,16230	,095	-,0471	,7579
		2,00	,1398	,18499	,752	-,3189	,5986

Figure 5. Output-uri for One Way ANOVA

The hypothesis no.3 is not confirmed. Not only do the students who perceive themselves as having high technical aptitudes notice a high level of difficulty in studying the humanities sciences, but also the others, with average and low technical aptitudes. None of the two methods, TukeyHSD and Scheffe, underlined significant differences among the students. The real technical aptitudes in some students are not the variable that influences their perception in evaluating the difficulties in the study of the psycho-pedagogical module, but other factors that we do not know.

Conclusions

This research has produced a psychological instrument without a long and complex process of validation behind it. Even though by this process we have reached a questionnaire with only 15 items, it can be developed for new purposes. The results of the questionnaire

have not confirmed some suppositions and prejudices transformed into hypotheses of work regarding how difficult it is perceived the study of the psycho-pedagogical subjects (Factor 1) by the graduates of level I and II who have as first academic option the technical specialization. If between the two categories of students previously mentioned there are no significant differences in Factor I, 50% of the graduates of level II indicate as difficult and very difficult the studies done, while only a percentage of 21% of the graduates in the first year confirm this fact. The result is surprising, because we were expecting a reverse ration.

In estimating the 40 engineer professors at the 11 faculties of the Technical University of Iasi, only an average percentage of 30% - 40% of the students have a penchant to the technical field, by interests and abilities for this field. In the lot of subjects involved in the research, 49% of the students estimate themselves as having aptitudes of high level for the technical field, which partially confirms the hypothesis no.2.

We can give up the prejudice (that some professors share) that the students with aptitudes and interests for the engineer field perceive as being very difficult the study of some subjects in the social and humanities field, because it is considered that they are already focused on a field with which they have affinity, which modelled to a certain extent the thinking, language, style of learning, etc., which makes them less open and flexible from the cognitive point of view for subjects with curricular areas so different (technical and social-humanities). And the students who join a technical profile

without too much affinity with the field report an equally high level of difficulty of the studies done within the Department for the Formation of Teaching Staff.

One of the limits of the study can refer to Factor 2 (Self-perception of the technical aptitudes), which is a too sensitive one in evaluating the engineer abilities. Even though the distribution of the answers on this factor is a normal one, we cannot exclude the tendency of the subjects to exaggerate in favour of the desirable answer. To exclude this limit of the study, we suggest an objective evaluation of the technical interest and abilities of the students, by measuring their academic performance (theoretical and practical) by means of school means of the marks.

The lot of subjects were heterogeneous in the aspect of the faculty of provenience, which offers us a general image about the aspects investigated in the students with technical specialization. In the didactic activity of the psycho-pedagogical module, we can notice differences among the students coming from various faculties with technical specialization in respect of the involvement in activities, easiness of understanding the knowledge transmitted in courses, the school results, etc. Applying the questionnaire to larger groups of students from various faculties could underline the differences mentioned above, could confirm simple perceptions or invalidate prejudices such as: “the students of faculty x are better in the pedagogical module than the students of faculty y.”

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INFORMATION AND DIGITAL LITERACY– FOR A MORE QUALITY UNIVERSITY EDUCATION

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Abstract

The author discusses the issues related to the efficient use of information and communication technologies (ICT) in the process of learning and training as well as the need to promote and develop the information and digital literacy of students. The focus is on the new basic skills and competences which should be a priority of the European higher education in the 21st century. The paper presents the results of the project "Digital literacy - a key factor in higher education", which is implemented by the Center for New Media and Digital Culture at South-West University "Neofit Rilski" - Blagoevgrad. The empirical component, included in the paper, concerns a study of the use of information and communication

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technologies by the students, the level of their information and digital literacy, and the possibilities for improvement of their digital competence.

Key words: European educational policy, higher education, information literacy, digital competence

Introduction

Over the last decade we have seen unprecedented growth rate in the development of the Internet - "perhaps the most revolutionary technological media of the information age" (Castells, 2004, p 56). The transition towards creating a new global information space was highlighted, marked by continuous development and improvement of information and communication technologies. The acceleration of the information processing and knowledge acquisition caused profound qualitative changes in all aspects of life, including education and training.

The conversion of the Internet into a global storage of information as well as a mean of horizontal (non-hierarchical) communication opens new perspectives for searching, retention, creation and distribution of vast quantities of information. The appearance of Web 2.0 increased the scale and dynamics of data collection and management, suggesting a participation in a collective intelligence which “can actually help people self-actualize while solving collective problems” (Rivera, 2009).

Building the most dynamic knowledge-based economy and the adaptation of young people to the globalizing labor market identify

new challenges facing the European Union in the field of education policy. Education and training proved to be important priorities for the EU to reach the ambitious objectives of the Lisbon Strategy that seeks to increase European competitiveness and achieve sustainable economic growth. The European leaders urged the Council of education to take measures to achieve concrete future objectives of the educational systems while respecting the national diversity.

The framework of actions for the lifelong development of competences and qualifications, adopted by the European social partners in the context of the European social dialogue (2002), focuses on the new basic skills and capabilities to be provided through lifelong learning as a key measure in response to globalization and transition to knowledge-based economic systems. Particular attention is placed on identifying and promoting basic competencies related to the information and communication technologies and their priority in the European education policy in the 21st century.

Recognizing the lack of digital literacy and skills, the European Commission drew attention to the need to implement actions to highlight the priority role of literacy to use information and communication technology in the new initiative "New skills for new jobs" and acceptance of EU-wide indicators of digital competences and media literacy by 2013. The increasing of digital and media literacy for work purposes and not only for employability but also for "learning, creating, participating and being confident and discerning in the use of digital media" (European Commission, 2010, p. 25) is

acknowledged as an important priority in implementing the Europe 2020 Strategy, so the European education and training system could respond to the challenge of global competitiveness.

In response to the problems related to the more effective use of ICT in the digital society, the European Commission initiated a new program "Digital Agenda for Europe" (European Commission, 2010, May), focusing on the key role of ICT on "Enhancing digital literacy, skills and inclusion" (p. 24) as an important factor not only for professional development, but also for learning and innovation in the knowledge based society. The European Parliament (2010) confirmed the urgent need for introducing new technologies at all levels of education as well as improving e-skills in order to meet the needs of the growing labour market. In its working document "Supporting the teaching professions for better learning outcomes" of 20 November 2012, the Commission focuses on developing universal skills such as critical thinking, problem solving and team working that will prepare individuals for their career development (European Commission, 2012).

The institutions in the field of higher education had to consider the new requirements, modernize their curricula and generally speed up the Bologna process and the building of a European Higher Education Area. Particular importance received the emphasis on "student-centred learning", which will help students develop the competencies they need in the changing labour market and will motivate them to become active and responsible citizens" (European Commission, 2009, p. 1).

In today's digital society ICT is becoming a key to learning more effectively, thinking creatively, solving complex problems, having access to wider and more up-to-date data - all key competencies of the 21st Century (Digital Agenda for Europe). Therefore, in December 2012 the European Commission put the creation of "grand coalition" of digital skills and jobs in ICT among the seven new priorities with the highest potential in the digital society and economy.

In our days, media and ICT play a central role at all levels of education, and not least as a catalyst for educational change (Henriksen, 2011). The integration of media and other communication channels in the network space requires development of skills and competencies that have been given little attention in the educational system. Highlighted is the need for acquisition of competence in relation to communication in cyberspace, as well as ethical and social challenges that arise in this context. As stated by Henriksen: "Digitalization, interactivity and virtuality constantly open up new possibilities and expand the limits of how learning can be organized".

The researchers raise the issue of the effective use of technology-mediated learning opportunities on the one hand, and processes of digitally based learning within and outside educational institutions on the other, as a basis for improving the learning environment.

In 1989 the American Library Association (ALA) defines information literacy as the ability of a person to recognize when information is needed and to locate, evaluate and use effectively the needed information (American Library Association, 1989). According to the accepted standards to improve the competence of information literacy in higher education (Association of College and Research Libraries) the information literate student have the ability to determine the nature and extent of the information needed; to access needed information effectively and efficiently; to evaluate information and its sources critically and incorporates selected information into his or her knowledge base and value system; to use information effectively to accomplish a specific purpose: to understand many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally (American Library Association, 2000).

The student is motivated to seek the truth, to find, store and use the information so that others can learn from it. And he also has the ability to examine, collate, critically evaluate and analyze information and use it in making decisions, participating in a team in a creative and responsible way.

Among the main principles of the new information literacy, the possession of a full range of knowledge and skills to "identify, locate, evaluate, organize and effectively create information" is indicated. It is "a prerequisite for effectively participating in the

Information Society and a part of the basic human right of lifelong learning" (UNESCO, 2003). In the summary report "Education for All" UNESCO (2006) defines the concept of information literacy as the "ability to access and use a variety of information sources to solve an information need". The stress is on the need of „development of a complex set of critical skills that allow people to express, explore, question, communicate and understand the flow of ideas among individuals and groups in the quickly changing technological environments" (p. 150).

The constantly growing role of new technologies in education and tuition brings forth the need to enhance the digital culture of the students and master certain skills and competencies for learning in the digital environment. Significant place in the learning process of students acquires the ability to use digital technology which is considered as one of the eight key competences that are important for the personal fulfilment and professional development, active citizenship, social inclusion and employment in the knowledge-based society (European Parliament and the Council, 2006).

In considering the concept of digital literacy the European Commission includes the needed skills to achieve digital competence and confident and critical use of ICT for work, leisure and communication (European Parliament and the Council, 2006, December 18). Digital competence, perceived as a universal core competence, requires connectivity with the skills to use digital technology allowing students to work with computers, software applications and databases, helping them to realize their ideas and

goals. This is supported by basic skills in using computers to recover, evaluate, storage, product, present and exchange digital information (p. 15). In addition to developing core computer skills such as word processing, creating spreadsheets and databases, managing and storing information, understanding the opportunities and potential risks of the Internet it is required that learners should also understand how to support the creativity and innovation in the information society and be aware of issues with the validity and reliability of available information and the legal and ethical principles involved in the interactive use of ICT.

Furthermore, the use of information and digital technology requires critical and reflective attitude towards information and responsible use of interactive media. This competence is also supported by participation in communities and networks for cultural, social and / or professional purposes.

If we look at some of the latest researches, we can find that the definition of digital literacy focuses increasingly on the need to shift from basic skills of using digital tools and information resources to developing strategies for critical and effective use of these funds. That is the reason why digital literacy is now understood more as "continuum, with progressive stages where the basic abilities are only the first step.

The upper end of the continuum contains increasing levels of cognitive competence in using the literacy in question for tasks, learning, creating and expressing new ideas, and this involves issues such as attitudes and social and cultural aspects" (Ala-Mutka, 2011,

p. 17). In her mapping of digital competence Ala-Mutka established overlapping of digital literacy with ICT literacy, Internet literacy, information literacy and media literacy. Digital literacy is understood as most broad term that "includes the main aspects of other concepts and further aspects for using digital tools responsibly and effectively for personal tasks and development, benefiting from people networks" (p. 30).

While framing digital competence (Ferrari, 2012), it came to the belief that it is not sufficient to be claimed that digital literacy includes all the skills and competencies required for Internet literacy, ICT literacy, information literacy and media literacy. There are other components that come into the picture of digital literacy and build a framework that identifies the vision of the new literacy needed for living, working and citizenship in the 21st century. Therefore, A. Ferrari (2012) offers a comprehensive definition of digital literacy, understanding it as a set of knowledge, skills and attitudes (including abilities, strategies and awareness) required when using digital media and technologies, managing information, solving problems, cooperating or communicating, assessing, creating and sharing content, building knowledge in an effective, efficient, critical, creative, independent, flexible, ethical way to work, participate, train and socialize (p. 30). In this definition, digital literacy is understood in a broad sense, as a versatile concept. This competence is built on different areas of learning - knowledge, attitudes and skills required to identify, locate, access, retrieve, store and organize information. With outlining the areas of digital literacy, the attention has been

focused on solving problems and building knowledge through technology and media in a more critical, creative, flexible, ethical manner. As one of the key competences, digital literacy enables students to acquire skills and abilities that allow them to work effectively and participate in the digital society.

Method and results

In 2012, the Center for New Media and Digital Culture at South-West University "Neofit Rilski" initiated a study which had to meet the need to support and motivate students towards developing, improving and widening the range of their digital skills and abilities in order to use the great potential of information and communication technologies.

The study was conducted through the method of direct personal inquiry involving 100 people - students from different specialties of SWU, who completed a prepared questionnaire. It is based mainly on the developed by the Association of college and research libraries (ACRL) standards and guidelines to improve the information and digital competence in the field of higher education (ALA, 2000) and also on the proposed from the Stanford university modules for assessing information literacy of students (Stanford Junior University). The focus is on understanding the level of knowledge, skills and attitudes of students to use ICT in the learning process.

The first set of questions concerns the computer abilities of students. The study showed that the majority of the participating

students (92%) use a computer to access information but fewer are those that possess excellent (15%) and very good (40%) computer skills. They have the necessary skills in word processing (88%), document creation and formatting, spreadsheets, photo and image generation (85%), Microsoft Excel (67%), presentation (87%) and slideshow creation (85%) (Table 1).

Ability to work with computer / ICT	Excellent	Very good	Good
Using the operating system to access the information	92%	7%	1%
Use of printers, antivirus programs, software compression	60,4%	31,6%	8%
Organizing files and folders in the online environment	85%	10%	5%
Using the word processing	88%	7%	5%
Creating and formatting documents, generate tables, pictures and images	85%	13%	2%
Formatting and modifying simple spreadsheets	43%	30%	23%
Working with Microsoft Exel	66,6%	21,6%	11,8%
Creation of graphs and charts	43%	30%	23 %
Understanding of the basic concepts of databases	42%	40%	18%
Creating presentations	87%	8%	5%
Creating, formatting and preparing a slide show	85%	10%	5%

Table 1. Ability to work with computer / ICT

The second group of questions studies how students use and participate in the online environment. The study found that 70% of respondents use the WWW, 75% of whom say that they have daily access to the web, of which 30% - mainly at home, and 45% - at the university.

Digital technologies provide new and more flexible training opportunities through the use of computer applications and electronic resources that can provide interactive learning materials to students. The majority of the students (80%) admit that they use different tools for searching, finding and retrieving information. In addition, they know how to use e-mail (98%) and work with attachments (93%). 60 percent of the respondents understand the basic concepts of the Internet, including security issues, but a significant proportion (37%) understood this only partly (Table 2).

Internet access	Every day	*At home*	*At the university*
	75%	30%	45%
Web skills work	Yes, very good	Partly	*No, I haven't*
Use of WWW	70%	15%	5%
Use of Instruments to search, finding and retrieving information	80%	17%	3%
Understanding of the basic concepts of the Internet	60%	37%	3%
Use of email	98%	2%	-
Creating and sending of emails; work with attachments	93 %	2%	-

Table 2. Internet access and skills to work in the Web

The third set of questions seeks to evaluate students' ability to seek and effectively use information and information resources. The majority of the students have effective access to information (70%). There are many students who are able to distinguish the important characteristics of the individual library information resources on the web (51%), 35% answered "partially" and nearly 14% could not.

The study found that nearly half of the students apply appropriate search strategies in different systems using different user interfaces and search engines (57%), nearly 40% indicate that they have difficulties. 55% of the respondents prefer only Google, while 40% use also Yahoo and almost 30% rarely use Yandex.

When asked what resources they use mostly, 85% of the respondents answered “print media” while 73% rely on the electronic media – newspapers, magazines, books, and encyclopaedias. Photo galleries are the most preferred information source for 47% of the respondents, video – for 35%, digital libraries – for 30%, audio records – for 27%, virtual museums – for 22% and online catalogues – for 27% (Table 3).

What resources do you prefer?	*Often*	*Seldom*
Print media	85%	12%
Electronic media – newspapers, magazines, books, encyclopaedias	73%	23%
Online photo galleries	47%	17%
Online video	35%	10%
Digital libraries	30%	15%
Electronic audio records	27%	28%
Online catalogues	27%	8%
Virtual museums	22%	37%

Table 3. Use of information resources

Although the students are facilitated in their daily pursuits and scientific development by the advantages of electronic publication in the university library, the majority of them (75%) admit that they do not use the resources found in the online catalog of the university library.

The fourth set of questions concerns the skills and attitudes of the students for critical and reflexive attitude towards information and responsible use of ICT as a prerequisite for social adaptation and work in the digital society. According to the survey, the majority of respondents successfully use the Internet and information technology in the learning process, given the rapid and easy access to the necessary information that enables them to respond to a greater degree to the requirements of teachers and improve their academic performance.

Particularly important are the skills acquired by the students to evaluate, analyze, interpret, apply and create new information and their ability to extract information from the newly acquired knowledge. The data shows that 83% of the respondents realize the usefulness of the information; they are able to analyze and synthesize the material, compare information from various sources (75%), interpret and present the information (73%), combine the existing data with their original ideas / analysis or create new information (72%).

Over half of the students are not troubles when they need to summarize the main ideas, extracted from the collected information (67%) and estimate the quantity, quality and relevance of search

results (72%). Fewer are those who have the skills to critically evaluate information and sources (55%), who posses the ability to determine the meaning and value of information through careful consideration and research (50%) and can evaluate individual web sites - on objectivity, reliability and timeliness (55%).

A significant number of the students surveyed admit that they have difficulties or have no skills at all when they have to: identify issues that have been raised for research (52% answered "partially" and 8% - "no"); formulate important questions and hypotheses related to the research (47% answered "partially" and 12% - "no"), critically evaluate print and online resources based on specific criteria (44% answered "partially" and 8% "no"), check for authenticity and reliability of the data collected (47% answered "partially" and 13% - "no"), use information about the author, year of publication, publisher and content as criteria for recognition of the right information (47% answered "partially" and 13% - "no").

When it comes to the ability of the students to properly use discovered information, it appears that 60% of respondents understand the economic, legal and social issues related to the ethical and legal use of information. Although the majority of respondents said they were aware of the copyright law (70%), many of them only occasionally follow laws, regulations and tags associated with access and use of information resources (43%), while 18% did not do this. 70% of respondents recognize what is plagiarism and how to avoid using quotation marks in direct reference to the words of others and how to mark citations in the text (67%). But fewer are the students

who can cite Internet-based sources (52%) and use a particular style of citation (47%) (Table 4).

Ability to critically evaluate, analyze, interpret and create new information	Regularly	Sometimes	No, I haven't`t
Critical evaluation of information and sources	56%	35%	9%
Summarize the main ideas	67%	27%	6%
Understand the usefulness of information	83%	15%	2%
Assesses the quantity, quality, and relevance of the search results	72%	23%	5%
Evaluate websites – objectivity, reliability, timeliness,	55%	30%	15%
Comparison of information gathered from different sources	75%	20%	8%
Interpret and present information	74%	22%	4%
Combine existing information with their original ideas /or analysis to create new information	72%	24%	4%
Understand the legal and social issues related to use of information ethically and legally	60%	23%	17%
Know what is the copyright and its ethically use	70%	17%	13%
Follow laws, regulations, etiquette related to the access and use of information resources	39%	43%	18%

Table 4. Ability to critically evaluate, use and create new information

Conclusion

In the new digital environment essential becomes the human adaptation to the changing conditions of work and life that require development of skills related to the effective and efficient use of ICT. The use of the Internet and digital technologies outlines new

approaches to training and learning that will lead to improvement of the learning environment and evaluating process.

The computers and Internet access, the ability to work with some of the basic computer programmes and internet tools is not a guarantee for gaining digital literacy skills. Equipped with the latest interactive computer technology, students have the advantage not only to be objects of the learning process and to receive and store information, but also to act as active players in the new digital learning environment thanks to the wide possibilities to express their proactive, creative and selective behavior.

The study seeks to assess digital competence of students and to focus on those aspects of information and digital literacy which require a higher priority. The data obtained indicates on which specific skills teachers need to focus efforts on in order to ensure a higher level of use of information and digital technologies and skills for effective participation in the educational process.

To enable students to quickly adapt to the challenges of the digital society and new practices for electronic learning environments, it is required to identify effective ways to attract, encourage and motivate towards the utilization of quality theoretical and applied skills for working with information and digital technologies. The efforts of the university should be aimed to develop, improve and enrich the range of information and digital skills of the students using the great potential of ICT.

By organizing short and long term training courses, seminars, online tutorials, e-books and etc. there can be expected a development of a wide range of skills for searching, identifying and critically evaluating information obtained from adequate sources - web based and others.

Skills for organizing and effectively using information, participating in solving scientific problems in a more independent and responsible behavior in the digital environment. By ensuring a wide and open access to digital skills, the South-West University is able to motivate and help students to raise their digital literacy in order to be able to not only improve their performance in the learning process, but also to achieve professional success in the condition of ever changing demands of work and life.

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THE REPORT BETWEEN CURRICULAR AREA AND THE SYLLABUS IN THE UNIVERSITARY DOMAIN

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Abstract

The syllabus is built and is immediately drawn up for each discipline of study and, where appropriate, for every form of organization of the subject (course / seminar). The theme of the seminar will have to take into account the course content, The syllabus is not something fixed, it is evaluated and it is differently designed at the beginning of each semester, but also when the teacher considers that that scientific and applicational novelty demands it, when the strategies correspond no more or after every evaluation that doesn`t offer a positive feedback; The syllabus shall be presented to the students in the first classes of the course ;the philosophy of the subject is argumented, and the qualities which the students will acquire after completing the course .

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Key words: the curricular area, the report of hierarchical inclusion, the syllabus, the program of studies, sheet/subject calendar.

I. The report between the curriculum and the program of studies

Learning is more than ever the essential condition for the development of each person and development of every society on this planet. There is no need of traditional learning, but a learning from which every student must become a man being able to adapt, to change the world to his own benefit and his/her benefits. This desideration can be translated by the way of how we involve the student, what skills are needed in order to positive transform the society and how we create these skills. The answer in the first instance come from the way :

- of how we build a framework curricular and curricula;
- what kind of relation we establishe between the curriculum university of a license / master course of a specific college and program of studies of the various disciplines components.

The curriculum in the pedagogical literature is related to two approaches: one in the UK version and the other one ex – European . The anglo – saxon form sees the curriculum of an educational system through the following features: [3]

[3] Jonnaert, Ph., Ettayebi, M., Defise, R., 2010, Curriculum şi competen□e, Cluj-Napoca, Editura ASCR.

- "is general and exceeds the study programs which include them;
- it is pragmatic and propose situations which make reference to the life experiences of students that have a meaning for them ;
- has as a final purpose the individual development and social insertion of students as well as their commitment to standards and values."

The franco- European pedagogical literature approach the curriculum by the features:

- is centerd on knowledgement of the school ;
- affects the content of the programming of teaching ;
- overlaps with other notions : the program of studies, the program of training, the reference system or groups of skills.[4]

Despite of the differences in approach, it is important to use the elements of complementarity for the benefit of the student (the programmatic size of contents of learning of european – franco curriculum, humanistic and pragmatic vision of the anglo – saxon curriculum.

The concept of the curriculum must ensure the holistic consistency of the educational system because it is build of " all the programs developed for the teaching of domains and specific subjects at a given level, the variety of documents and means of education in relation to these programs and characteristics which

[4] Ibidem.

serve as an indicator and counter – indicator for the use of a curriculum and of some ways of education in particular circumstances ".[5] In this context, it is necessary the elimination of all the confusion between the curriculum and the programs of studies / analhytical because "the curriculum specifies a major guidelines of some educational system, the programs of studies are nothing but a way among the others, to ensure the operationality of a pedagogical action and administrative plan, aimed the implementation of these guidelines and these purposes ".[6]

Between the curriculum and the program of studies *appears a report of hierarchical inclusion: the curriculum includes the studies programs.*

The concept of curriculum it is being often confused with that of program of study which means that the functions of one other become functionable to the other. They were some periods when the analythical program has disappeared, the place of it being occupied by the curriculum. On other occasions, the emphasis was very much on the program of studies while minimizing the curriculum functions. Lempereur et all. (2005)[7] say that between the curriculum and the studies programs must exists an essential hierarchical

[5] Shulman, L.S., 2007, Ceux qui comprennent, le developpement de la connaissance dans l'enseignement, Education et Didactique, (Traduction de Shulman, 1986)
[6] Jonnaert, Ph., Ettayebi, M., Defise, R., 2010, Curriculum şi competen□e, Cluj-Napoca, Editura ASCR.
[7] Lempereur, A., şi colab., 2000, Evaluer des competences a l'ecole. Liege Service: de Pedagogie experimentale, Universite de Liege

inclusion report. This means that a curriculum guide the studies programs which include them.

However, the two concepts (curriculum and the studies programs) complete each other, but there may appear specific differences, too. If in the binom curriculum – studies of programs, is missing one of the two concepts, it may causes incoherency.

The curriculum must be always seen as the one that includes and guides the programs of studies, that means the analythical programs from the same curriculum must have the same characteristics mixt together with the ones of their owns study domains. At university level, the curriculum on years of study or programs of studies (license / master / PhD) must ensure an inter – programs coherency of studies, i.e. to avoid analythical programs to surrender.

There have been cases when the report of the inclusion between the curriculum and the program of the studies have been inverted which means that the programs of studies have oriented the training of the curriculum. From this point of view appears a major risk that some disciplines to become very important putting away the other disciplines. Under these conditiones, the curriculum has a minimal role affirming just some principles.

There were cases when the hierarchical inclusion report has to be canceled and in it`s place to appear only the programs of studies. Consequently, the discipline logic dominate and disappears the coherencion of inter – programs of studies. From the systematic perspective, the curriculum is a system in relation to the programs of studies which are subsystems. It is always a need for the maintaining

of the report of the hierarchical inclusion, which means that the curriculum directs and provides the organizations plans of pedagogical and administrative action of some educational system.

II. Theoretical approach regarding the syllabus

The educational subject, the module, the university course, the seminar, the laboratory work etc must be planned every six-months/annually or when the didactic situation demands it. Their presentation cannot be accidental, because the entire universitary didactic activity is based on organization and scientific planning. In this context, it is necesarry that every teacher should know the elements of drawing up a syllabus. The word syllabus (plural : syllabi/syllabuses) is polisemantic and can be understood as : analythical syllabus, curriculum, study schedule, school curriculum but also concept, exposure, school schedule etc.

From the educational perspective, we are interested in the terms that represent the curriculum as a product, namely : analythical syllabus, school curriculum, study schedule. In fact,the syllabus must be seen in its semantic and conceptual plenitude.

The syllabus represents „ a condensed form of a course being realized by a teacher and used by the teacher and the students ”[8] . The syllabus is build and is immediately drawn up for each subject of study and, where appropriate, for every form of organization of the subject (course / seminar). The themes of the seminar will have to take into account the content of the course. The syllabus is not

[8] Voiculescu, F., (coord.), 2010, Ghid metodologic de pedagogie universitară, Alba Iulia, Editura Aeternitas.

something fixed, it is evaluated and it is differently designed at the beginning of each semester, but also when the teacher considers that scientific and applicational novelty demands it, when the strategies no longer correspond or after every evaluation that doesn`t offer a positive feedback. The syllabus shall be presented to the students in the first classes of the course; the philosophy of the subject is argumented and the qualities which the students will acquire after completing the course. It is not bad if each student receives the syllabus. This could also be available on-line.

Beyond all these general considerations, the syllabus represents „ a condensed form of a course being realized by a teacher and used by the teacher and the students". By studying the syllabus of the didactic subjects from several university centers, we found that it has the following information in common :

- Information about the author of the course; we consider that it is necessary that the case with the name and surname of the teacher, the scientific title, contact information (e-mail, telephone number, hearing hours) should appear in the analytical syllabus ;
- General information about the course : the exact name of the subject, the code of the subject, the number of credits, the formative or optional category of the subject, the schedule of the course/seminary/practical activities, the venue of the course;
- Bibliographyş we advise you to submit the compulsory and reference works, regarding the scientificity of the subject to

be studied. The presentation of the suplementary bibliography from the perspective of an optional lecture is also welcome. As a general rule, the suplementary biography creates an opportunity for the student to be more involved into the scientifical and even applicative question of the educational subject. The course of the teacher should not be omitted because it is the vital instrument regarding the teaching – learning – evaluation process.

- The materials and the educational means which will be used in the educational process from the perspective of the subject domain. Those can be classical but also modern, implying multimedia. A special attention must be given to the special tools regarding some laboratories, offices but also the appropiate equipment specific to the activities in the laboratories.
- The proper description of the subject; there usually are:
  a) the objectives of the course (*the curent recommendations concerning the syllabus may not claim objectives*) which must not be numoerous, clarity, concision and consistency are needed;
  b) the general competences but also the specific subject competences which broadly must be reported to knowledge and understanding, explanation and interpretation, instrumentally applicational and attitudinal;
  c) The content of the course must present both the chapters and the themes which will be discussed in

course/seminar/laboratory work. Great attention must be paid to finding the units of learning and of contents and in agreement with these, the forms of approach (monodisciplinary, pluridisciplinary, interdisciplinary, transdisciplinary) and the educational strategy (the methods, the procedures, the instruments approached for a teaching in an active – interactive context) .

- The evaluation plan ; both the testings/intermediate evaluations must be planned, as well as the final evaluation/colloquiums. From this perspective, the student must be informed about the problematic of the evaluations and the periods when they take place. Also, the students should be aware of the weight of the intermediate evaluations in the final grade and the role of the students' products in the semestrial period (reports, studies, the subject portfolio) .
- It was noted that there are university centers that use „ the inclusion of a removable part with the following content: I… .... am aware of how the course..... will take place and I agree to the terms of participation, the procedures and the evaluations criteria".[9] This appendix has been included for a full aknowledgement by the students of the requirements of the subject and, as a consequence, a rigor from the teacher concerning the whole activity carried out by the student.

[9] Voiculescu, F., (coord.), 2010, Ghid metodologic de pedagogie universitară, Alba Iulia, Editura Aeternitas.

The syllabus is not complete unless it also appears the sheet/subject calendar; it is a component part of the syllabus, being drawn up at the same time with the syllabus (at the beginning of the semester/ university year or according to each case) .

All these make the syllabus a concrete thing, because it presents the themes approached in detail for each week as well as the intermediate or annual checks. Note that it must be drawn up for the course, seminar, laboratory, project. The subject sheet shall be drawn up only in accordance with the themes and the content of the syllabus.

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FORMATION OF THE SPECIFIC COMPETENCE REGARDING THE IDENTIFICATION OF PLANE GEOMETRICAL SHAPES AT YOUNG SCHOLARS IN THE PREPARATORY CLASS

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Abstract

The paper presents the formation of the competence of the most complex mathematical notions, namely the geometrical shape. This assertion relies on the impossibility of rendering the essential properties of geometrical shapes by elementary means and by limiting the use of geometrical reasoning. The first part emphasizes the most important general aspects regarding the cognitive development of the child in the preparatory class, starting from the operations of primary processing of information, ie perceptions, representations, thinking, memory and imagination. Afterwards, the paper points out some aspects regarding the formation of specific competences, starting from highlighting the key characteristics: mobilizing all available resources, presenting the aspect of

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functionality, forming attitudes and exteriorizing the disciplinary character. The second part of the paper aims at presenting the intuitive aspects of geometrical shapes and of the didactic material, which becomes the support of laying emphasis on some essential proprieties of geometrical shapes. It is still the second part which presents a model of forming competence C.2.2. in the preparatory class and it presents the four stages: acquisition of fundamental knowledge about plane shapes, transformation of fundamental knowledge in functional knowledge, formation of the attitude of interiorization and exteriorization of knowledge. The paper ends with some conclusions on the importance of sequencing the formation of some mathematical skill and how to organize the educational process in order to ensure the cognitive development.

Key words: preparatory class, specific competence, geometrical shape

1. General aspects regarding the cognitive development of the child in the preparatory class

The preparatory class ensures the gradual transition of the child from preschool education to the initial training provided by school as well, namely it is meant to enable children to acquire the necessary training in order to start the school activity, and in terms of a formative aspect, to ensure the optimal development of psychic processes of cognition.

One of the major fields of development of this class is the cognitive development expressed in terms of the ability of the child

to understand the relationships between objects, phenomena, events and persons.

In order to understand these relationships, we start from the operations of primary and secondary processing of the information which, for this age, include perceptions, representations, thinking, memory and imagination.

Thus, if until the age of 6, the child has experienced multiple sensations, now in most cases, only perceptions are taken into account, not sensations, achieving a new, more complex way of knowledge, namely the perceptive knowledge.

This primary processing results from the analysis of the main features of cognitive thinking and starts from installing the concrete operative thinking, which makes the transition from intuitive knowledge, with the help of the representations to logical knowledge, using mathematical concepts and the relationships between them.

Now, the operative character of thinking occurs, that is the ability to manipulate objects and phenomena mentally, without deforming them, where the operations of thinking have a concrete character and close to the age of 7, it is the critical spirit of thinking which is to be installed.

There are also some changes of language that occur at the young scholar, by the acquisition of some mathematical concepts, memory is mostly mechanical and involuntary, as it is influenced by the child's feelings and imagination is reproducible, which allows the

young scholar to understand the relationship between events and phenomena.

From the above we can say that the cognitive development of the young scholar in the preparatory class is highlighted by the mechanisms of primary processing allowing to overcome some knowledge barriers anchored at a perceptual level, which involves new dimensions of thinking, new early forms of memory and becomes one of the main sources for the evolution of the psychic development and for the intelligent knowledge of the surrounding world.

Within this field we shall approach an important subfield: the formation and development of some specific competences, namely psychological processes of knowledge and mathematical representations, which take into account those aspects regarding the formation of some elementary mathematical concepts and their practice in solving exercises and problems.

Thus, the cognitive field considers the development of the psychic processes of knowledge, at this age, their implications for school learning and the realization of school adaptation and initial alphabetization.

The approach of competence must start from its basic components: knowledge, behavior and competences through which, we must form at the young scholars, the ability to mobilize various cognitive resources so that they can cope with particular situations.

The approach based on competence, from this perspective, requires a complete reconstruction of the initiative to form concepts, as we must consider the impact of social practice.

Therefore, competence is an integrated set of knowledge, abilities, competences and attitudes acquired by the child through learning and raised in specific contexts of achievement, adapted to its age and cognitive level in order to solve some problems it may face in real life.

The establishing of the methodology for the formation of some specific competences depends on the way of separating its characteristics, on the didactic contents and the set of educational resources specific to mathematics.

Even if it is about a competence which is specific to the preparatory class, the law-like algorithm of forming a specific competence is the same, even with some difficulties due to the way of their accessibility and adaptation of the mathematical contents at the level of the child.

In this process to form the specific competence, we must consider the following characteristics:

- The mobilization of all available resources, namely the mobilization of knowledge, experiences, schemes and formed automatisms;
- The finalizing aspect, which shows that the mobilization of resources is not carried out by chance, but it must be completed and gets an aspect of functionality;

- The relation to real situations, which indicates that the mobilization of resources is done not only within a set of real situations but also in the context of solving real problems;
- The disciplinary character, which shows that, while capacities have a transversal character, competences have a disciplinary nature, because competence is often defined by a category of situations, corresponding to some problems specific to the discipline;
- The evaluative aspect which shows that any competence is an assessable quantity, as it can be measured by the quality of achieving the task and by the quality of the result.

2. Formation of specific competences regarding the identification of plane geometrical shapes at the young scholars in the preparatory class

Learning plane geometrical shapes is done by intuitive processes, ie their initial training is done inductively, requirement which imposes that the study of geometrical shapes should begin with the direct research of several objects in the real world, located in various positions in the surrounding area in order to discover those common features which outline the geometrical materialized image.

Afterwards, the geometrical image, materialized in objects is transposed in an image materialized by drawing, which represents a deployment of the geometrical image from the objects that generates it.

This concretization by drawing the geometrical image is performed at the blackboard in as many positions so as not to create limits in its recognition.

These concretizations may be completed by the presentation of some drawings prepared especially for this, and afterwards it is projected in the language of geometry and therefore it is the geometrical concept which appears.

On the basis of geometrical language, and by appeal to the perceptive experience of the young scholars, the teacher will outline the geometrical image of the concept considered also in other situations outside the classroom reality.

Along with the intuitive processes, such as visual and tactile perception of the material models, namely materialized by the drawing, the learning activity involves actions of their actual measuring, of comparing results, cutouts of figures and decompositions of the figure in component elements.

The explanations given by the teacher about setting the instruments and about how the measurement of the result must be read and any possible reversals of the measurement process, must take into account the experience and possibilities of the six year old child.

Manufactured didactic material must have dimensions which should be big enough to be seen clearly from anywhere in the classroom, as well as a clear construction that will satisfy aesthetic requirements.

The didactic material must also be the faithful expression of what it has to represent, it also must contribute to ease the transposition in drawing of the studied geometrical shape, of its elements and of the relationships that exist between them.

One of the most important problems is not knowing the difference between the concepts of shape and geometrical figure.

Thus, the concept of geometrical shape refers to the appearance of an object or to the aspect of a figure, whereas the geometrical figure refers to the drawing which is a geometrical entity or a reflection of some essential defined properties.

Just starting from these considerations, at the level of the preparatory class, one cannot achieve some knowledge by the means of intuitive and concrete-operational thinking, which creates confusion especially in the use of one of the most important ways of knowledge: geometrical reasoning.

At the level of the preparatory class, geometrical shapes have image formats as representations and they provide a link between the intuitive image and the conceptual aspect and they are symbolically rendered by drawing.

In the process of creating the drawing, which becomes the support of highlighting some essential properties of the geometrical shapes, a compulsory activity of the primary cycle is the proper use of geometrical instruments, ie the proper use of the ruler, the square and compasses.

By the exercises of drawing the circle, the square, the triangle and the rectangle, their essential properties have been highlighted and

they may be called geometrical shapes and they allow the achievement of the specific competence C.S.2.2.

In the process of learning geometry, children pass through several levels of thinking: the level of the shape, the level of analysis and the level of establishing some relations.

Model of forming competence C.2.2. at the preparatory class

In order to achieve the competence regarding the identification of some plane shapes at the preparatory class, the following stages can be followed:

Stage 1. Acquisition of fundamental knowledge about the plane shapes.

Young scholars already know the four geometrical shapes: the circle, the square, the triangle and the rectangle and therefore we can get their consolidation so as to see what they know and what must be approached in order to complete their knowledge.

In this respect, we can use as a topic: The acknowledgement of the plane shapes on the basis of deductive reasoning.

Learning tasks:

1. What shape and color have the following geometrical pieces?

- squares, circles and triangles are presented;
- the logical-mathematical game,"Guess my shape and color" is used.

2. What shape and color have the covered pieces?

- if a certain piece does not have two colors, the shape and color have to be found out;

- the game ”What shape and size do I have?” is used.

Finally, using deductive reasoning, it is concluded that all the yellow figures are triangles, or the covered figures are thin and red.

These learning tasks can be complicated according to the level of the preparatory class and the available material resources.

Stage 2. Transformation of fundamental knowledge in functional knowledge.

If the four plane shapes are known, we shall pass to their representation by drawing, the creation of some floral arrangements and the creation of some situations by which the young scholar should show what he or she knows to do.

Learning tasks

1. Do we know how to draw a circle, a square, a triangle and a rectangle?

- One can use mathematical didactic sheets which contain both the enunciated shapes and dotted lines which can be joined with the help of a pencil;
- The game”Will you draw the round shape? ” can be used.

2. Let’s draw the shapes from the given chips

- One will use chips with combinations of two from the four geometrical shapes;
- On will use the game:”Draw the shapes from my chip on the sheet of paper”.

3. Let’s draw the models from the given chips

- One will use chips with strips and floral figures with the four given geometrical shapes;

- One will use the game:”Can you draw me also differently?” All learning tasks can be complicated and one can use situations which should develop the capacity of analysis and synthesis.

Stage 3.Formation of the interiorization attitude of knowledge

The use of geometrical shapes in approaching mathematical concepts is a necessary step because using geometrical kits is to be found in the contents of every logical-mathematical game.

These games allow the endowment of children with a slim and polyvalent logic device that gives intuition a dynamic role and lays the emphasis on the child's actions on objects.

That is why at this age, to know how to be means to know how to use geometrical shapes to form the other mathematical concepts.

Learning tasks

1. Formation of the set which should contain pieces with the four attributes

- One will use the pieces of the Dienes kit in order to characterize the sets which do not contain certain pieces;
- One will use logical games of negation concerning the composition of a piece at a set and to distinguish it by an attribute.

2. Formation of pairs between the elements of a set

- one will use geometrical pieces and build sets that are based on various characteristic properties, then the set with fewer, several or all elements will be asked;

- One will form sets with geometrical pieces with "as many" elements as the given set, using Dienes kit, the demonstration at the blackboard and didactic sheets.

We have presented only two sequences related to the notion of set that is decisive in the formation of the concept of a natural number. This modality allows the modeling of assimilation structures of the processing actions by stages up to the interiorization of knowledge.

Stage 4. Exteriorization of knowledge

It is about the possibility of the young scholar to know how to become a ”little expert” in using geometrical shapes. In this respect, the most efficient modalities of exteriorization at this age are represented by the games of constructions with the use of geometrical shapes.

Learning tasks

1. Formation of various figurative constructions using the game ,,Tangram”

- One will build silhouettes, animal figures and figures of known things;
- In building figures, the main rule is that all the seven component shapes which build the initial square will be set one close to the other, without superposition;
- One will get various constructions using other variants of the game as well: Regulus, Cocogram, Phytagoras şi Chi No-Ita.

All games of construction can contribute to the formation of the capacity to elaborate logical types of reasoning, to the formation of

the capacity to act on the basis of some logical principles and to the creation of the premises to exteriorize logical operations.

3. Conclusions

The formation of mathematical competences at the preparatory class is a time-consuming activity, which has to be staged in order to be understood.

In the case of identification of geometrical shapes, their study begins with the direct research of several objects from the real world, and afterwards, by intuitive processes there will be the discovery of those common characteristics which outline the materialized geometrical image.

All these characteristics of forming the specific competence regarding the identification of plane geometrical shapes, come to emphasize the importance of knowing the cognitive field and the mechanism of staging.

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SYMBOLS IN THE BOOK OF THE METOPOLIS OF STEFAN BANULESCU

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Abstract

Ştefan Bănulescu's short story "The Book of the Metopolis of Ştefan Bănulescu" displays two scenarios: a realistic one and a fantastic one. The entire narrative meaning is built around this ambiguity. The atmosphere is tense and enigmatic datotorită using symbols. Symbols turn into metaphors, such as: furnace, bell, island etc. The real is metamorphosed into the fantastic. The movement is subtle and imperceptible. Symbols configure an imaginary space.

Key words: fantastic, imaginary space, island symbol.

In *Studies culture typology*, Yuri Lotman identifies four cultural codes depending on the relationship their mark. There are two fundamental codes, the other remaining is an ingenious combination of the first codes. In describing different cultural codes, Yuri Lotman starts from the definition of the linguistic sign, as he understood

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Ferdinand de Saussure. Culture, believes Lotman, overrides language and text, is a picture of the cultural code that also transcribes language structure.

In this cultural code, culture is understood as a whole. Profile is given by the sum of all parts: signifier part but not the whole amount of syntactically organized factions (*Studies culture typology*: *40*). The emphasis is on the relationship between the parties. The whole body is understood. Assimilation whole organism due importance it has in the body. The body is composed of the sum of the parts. Thus, the image becomes a symphony.

Lotman discusses principles of textualism, based on the description of a cultural code. Text restore cultural profile, being understood as an organized whole musical principle. Principle not only to coordinate the parties. What must be sought is the way the characters and images are considered as parts of the whole seen as body text. Text is communicated itself becomes self-referential. Communicating himself, he becomes a metatext. Contains its poetic text that creates a background reference, a metatext by trying to highlight their operating mechanisms (*Textualism and Authenticity*: *145*)[110]

Image not mean anything, but is that parts of the text. Their importance is given to the way in which relations are established

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[10] Marin Mincu write about a "real" as a pretext for text. Text cancel their referentiality, but canceled and himself, multiplying and narrative perspectives. Extensively about this in Textualism and authenticity of Marin Mincu, 1993, Constanta, Pontic Publishing, p 223.

between them to provide images of text as a whole. Thus, they are converted into symbols, the carrier sense.

In *The Book of Metopolis* word describes a world then becomes autonomous. Textualization is the empowerment of the word. The book contains its mechanisms, technical and poetic interpretation, author and lecturer. Ultimately, the book is a text Ştefan Bănulescu how to write literature.

Language merely describes a world that in the end not to have *another purpose besides that of the universe contrasts his own presence, solid, opaque object oriented* [11](Monica Spiridon *1984: 149*) and Roland Barthes, writing is a basic concept. He sees in it a process of socialization of literary expression, writing requires that the ceremonial aspect of literature (*About 'appearance' and 'reality' of literature*: *106*). He also distinguishes between language as a state common speech style as a writer and writing given the level where you start literature.

The book becomes a book about how to make a book. In the two parts of the text will follow the relationships established within the text to shape the image of the whole text.
In *The Book of Metopolis* can be isolated metaphors that give the image text. These metaphors icon, the text cites himself as tautology, becoming a metatext. Broadly become symbols of the book.

The oven has two updates: Fibula oven and Guldena female ornaments and bread oven of the priest Viaţa Amărâtă. The first is

[11] Monica Spiridon, About "appearance" and "reality" literature, Univers, Bucharest, 1984, p 149.

the oven that turns the finished material to another material unfinished:

> *Fibula was sometime in Metopolis a goldsmith, a kind of foundry female ornaments and trinkets of old coins and objects found or stolen from the Citadel roads in the former Wool and marble hills around Metopolisului (Book of Metopolis: 56).*

Foundry Fibula is athanorul, alchemical furnace. It is an icon of textualizării, of becoming real, of the text. The material used is a derivative. Fibula converts coins and other artifacts in jewelery. Text processing finished material in other finished material. Thus, it operates with a ready-made material.

The other text that appears in the oven is the priest Viața Amărâtă. Bake bread in it. The material used is a profit. A text can not be founded on a raw material (reality), but one that must be processed, or be subjected to degradation:

Large brick kilns are in parish court (...).Viața Amărâtă has not kept only one, his household, the rest made shelters for ducks, geese, turkeys (Book of Metopolis: 66).

The oven becomes an icon of the text. Large brick ovens make reference to the primary text (Arhitext), from which the narrative. The transformation of the oven (primary) in shelter for birds can be read as a transformation of myth in modern narrative, which equated to a degradation process, the transformation of the sacred in the profane.

The myth is a raw material and the reference is the actual reality. Myth evokes a true story. Oven to wear as a raw material, is an analogue of the story (myth) with reference immediately.

In the text, the word ceases to describe a fictional world to describe himself. In the Book of Metopolis word starts as sign language. Sign particularity that of being "vehicle" refers to something beyond. Word betrays its nature and becomes autonomous. He begins by describing a world, using the technique bizantinizării and ends up describing himself. Text not but evoke.

An image of text is even Metopolis city, a result of changes suggestive:

> *Among the hills metopolisiene there was once an ancient Greek city, later the Roman and later Byzantine, Ottoman invasions missing once. Among the remains of the city, coin hoards of bronze or copper alloy, silver and even gold, were the most popular, especially hoards of coins from the time of Byzantium opulent and wasteful* (*Book of Metopolis*: 76).

The text is the result of a phenomenon of intertextuality, as Julia Kristeva to understand the concept. Intertextuality is interfering phenomenon textual codes, underlying Metopolisul cultures are Greek, Roman and then Byzantine them, add and Ottoman influence. Quotation functions as mis-en-abim. This release does not clarify meanings abyss. Reference is made to the text, the formal model Byzantium text seems opulent and wasteful. Start abyss refers not meaning, but the way of writing.

Another icon of the text is the steeple. In her isolated woman sexton: about a week, she stood locked in belfry sexton Orthodox Church and refused to give any sign. She embodies the word picture book from Metopolis. After describing a world-crossing spaces textual word turns to self:

Every year in April-May, she took the path of love (...). It returned one without the man who had left (Book of Metopolis: 73).

In fact, the word becomes image to reach self-sufficiency, autonomy, runs through textual spaces. Thus, the movement of the sign can only be a dual one: centrifuge, which is to be something other than its own nature and centripetal, which is to represent themselves. Cancelling self referential and return to the active word in textualism.

Island is another icon of the text. Island horses Constantin Losing isolated enclosure. The semiological reading Constantine seems to be an update of the "lost child"[12] (M. Robert 1983: 120). On line textualism Constantine is not only an icon of the word in the text, and the woman sexton:

It happened that when Constantine Losing to ill, lying down on the grass in those days, felt a sort of emptiness in the brain ached and I was breaking temples (Book of Metopolis: 78).

In a study dedicated to Ion Barbu, Marin Mincu[13] (*1981: 184*) considers vegetation, grass rather as the correlates figurării text. Read such extent of Constantine in the grass icon symbolizes a relationship phrase. This relationship between textual units is a horizontal one. An icon of the word is represented by Constantine, as a form of expression "lost" in the sequence of textual elements (grass). On the other hand, this word is one desemantizat ("empty

[12] Robert, Marthes, Novel early beginnings and Romania, Bucharest, Univers, 1983, p.120.
[13] Marin Mincu, Ion Barbu-Essay on textualization poetic Romanian, Book Publishing House, Bucharest, 1981

brain"). Illness character suggests a lesson of what was called the word alienation caused by the gap between the two sides that Ferdinand de Saussure consider them inseparable, ie, signified and signifier.

Island requires what is uncivilized, what comes out of the norm. Norma means disorder, understood as cluster elements and associated proliferation of detail. The image of a baroque universe is constructed:

> *Once in Island horses rod grass meadows, hungry eat leaves, tender twigs, bark, fruit, a curious hunger gripped them (Book of Metopolis: 79).*

Baroque is a prerequisite aprocesului of textualization. George Călinescu[14] defines baroque as opposed to the romantic classic type:

> *Classic and romantic are the literary itself, one promoting wealth wisdom other life. Barochistul workshop is the kind of artist who makes "art for art", analyzing the rules and perfecting them, amplifying them (Principles of aesthetics: 348).*

Over the principle musical multiplicity of voices that inhabit the island (quails, partridges, starlings, wild ducks, capons, sparrows, etc..) - Overlap principle of architectural design. Is there something in the architecture of nature which is usually represented by the disorder. Architecture is achieving abundant vegetation, and this in turn is correlated with figuration Marin Mincu text.

Inside the island is another island textual Palace rush of Andrei Mortu:

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[14] George Călinescu, Aesthetic principles, Univers, Bucharest,1968

The swamp was indeed impregnable nor horse nor foot of man, not even light could penetrate boat to rush Palace. Only Andrei Mortu exits and enters the swamp wanted using only lane he knew consisting of turtles crawling through muddy water, massed in a certain place, well hidden by reeds and tall reeds (Book of Metopolis: 85) .

Impregnable island-palace-Andrei inland island Horses sent to the phenomenon of intertextuality. Andrew's Island is surrounded by water and marsh. Swamp symbolizes sign image that refuses any coverage (reference).

Andrei is the semiological reading "hero disappeared". Andrew deaths are equivalent to the disappearances.

Constantin update "abandoned child". The character is not abandoned in the forest dark fairy tale character but as island belonging beasts namely horses. This isolation of the character in an enclosed space, refers to what Marin Mincu called "hero swallowing its own text."

And Andrew and Constantine initially swallow "text-island-island descends text-textual history, the fictional Dicomesiei. Hero swallowed text and abandoned abandon their text. Lowering the text in history equals decay. As long as it is protected by the limits of textuality, Andrei is a ballad character. When out in the text, is leaving the island prison. Similarly, Constantine left the world of myth-textual universe, the island - and get down in history beggar Dicomesiei stations. But giving up the text and immersion in history is only transient. Finally, the character character is swallowed by text is seen in corn and corn Dicomesiei them. (*Book of Metopolis:* 89).

Constantine becomes a character of legend: It was thought that has any birds nests, the birds flew them under his armpits. Perhaps traces of nests shoulders were straw that lay hidden. The character does not have a privileged status as the previous poetics. He appears as a function of the text at the same level as other textual features. Constantine's image surrounded by birds, at this level of culture is an achievement syntagmatic relationship established between literary signs.

The voice of the narrator in the passage quoted earlier speech discredit. Active game-demythisation mythicization frequently modern poetics. Debunking the myth is the process of lowering the newspaper. This embodies the result of trying to explain what it felt logical means to the supernatural, beyond logic. The effect becomes one playful. The idea for the text is a play with words.

But often, this denudation processes provide a false trail Reading: Book Millionaire has little time for the things that have happened once or several times (*Ibid.: 101).*

In fact, the book focuses exactly on what involves repetitive sequence-original copy: copy the best and, surprisingly, more authentic than the original one with you (*Ibid.: 109*).

The book is an illustration of that condition text semiological reading achievement-copy of a model. The phenomenon is acknowledged and noted as such.

2. Text which contains poetic

The text contains its interpretation but equally poetic. This textual practice denudation processes active in textualism.

The Book of Metopolis object appears in the text just write. There are text fragments with reference to the book, the final product: *if you find this does not necessarily have to look that mean in your book, because they are essential and fantastic value (The Book of Metopolis: 90)*. The object of the book is real ("you are"). This will be textualized real excuse making the game literally. The idea of literature as a game, is suggested by the occurrence of lexeme game: *Old used skillful opportunity to meet a total stranger like me a letter and an play some subtle subtext actually addressed Fibula (Ştefan Bănulescu 1999: 92).* The game is not a free one, with words, but it is one of the meanings. Poetics (description) and hermeneutic interpretation are related. Therefore, the text can be read on two levels: semantic, deepening the sign, and syntactic relations between signs.

The foundation of writing the word. Since he was born a reality, the fictional reality model given: *and Havaet has hinted as in the creation of the world, the first stage is the word (Ibid.: 93).* Demiurgic creator gesture implied writing is commonplace. Ştefan Bănulescu detaches from the commonplace by irony.

The book can be read as a parody of the type of text which contains poets write indescrifrabil. Finalize scares me. *Almost one messing up my writing assumptions to yield not convenient horses or false* (*Ibid.: 97*). Book denudează their processes becomes a parody

of this type of writing. The fragment is a fake mis-en-abim, because in reality it gives false horses. Forgery is elevated to poetic.

The textual poetics, text does not talk about anything but talk about himself. Thus, the focus moves from what is said on how to write. The book is on what you might call an internal metatextualitate: write the text himself. This is considered to be a textual practice. Text denudează their processes and contains its poetic.

In the second chapter, which contains poetic text, the wording of the word. But the reality is the fictional with the example already given reality. Therefore, everything seen Ştefan Bănulescu irony. How writing is important, that a domestic metatextualitate. Children become more real than the original but this is acknowledged *In the book of Metopolis.*

Conclusions

In the Book of Metopolis there are many images of text, such as: furnace, city Metopolis island. Each icon has a meaning in the text. Text is *the book to Metopolis*. It is bell icon or other image, all develop at first a history finally gets a sense.

Picture all the text is outlined on the one hand the relationships established within the text and on the other hand contains its poetic text. Images of text can be considered metaphors. For example, the oven in which the two women pour jewelry and the priest Viaţă Amărâtă bread oven. The latter is inhabited by birds which involves degradation, a transformation of something sacred in a profane thing.

City Metopolis, a universe made up of several suggestive metamorphosis is he an image of text. Island horses withdrawing Constantin Losing water is isolated and in textualism, Constantine is seen as an icon of the word in the text. Chaos not only to build a space that is based textualizării Baroque. Paradoxically appears another island where the palace of Andrei Mortu rush, surrounded by a swamp.

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