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WORKSHOPS: POLICIES AND STRATEGIES FOR SUPPORTING THE TALENTED YOUTH IN TECHNICAL FIELD

ANGHEL IONICA-ONA*

ABSTRACT. Supporting talented youth is an important condition for both the professional development of this special population and the economic development of the host country. This paper aims to explore the scholars' and students' opinions on the involvement of various institutions in supporting talented youth in technical by implementing different educational policies and strategies. On this purpose we organized two workshops involving professors and PhD Students from the Technical University of Iași, Romania. The collected data were processed according the requirements of the qualitative analyzes. The results show a general distrust of the participants in state institutions or non-governmental organizations, while the university is to be seen as the one supporting the youth showing a talent in the technical.

Key words: *giftedness, talent, technical talent, workshop*

ZUSAMMENFASSUNG. Die Nachwuchsförderung ist eine wichtige Voraussetzung für die berufliche Entwicklung dieses speziellen Bevölkerung einerseits, und für den wirtschaftliche Fortschritt des Gastlandes, andererseits. Dieses Papier zielt darauf ab, die Ansichten der Lehrkraft und der Studierende zu erkunden, über die Beteiligung der verschiedenen Institutionen in der Unterstützung der talentierten Jugendliche in technischen Bereiche, mithilfe verschiedener Bildungspolitik und Strategien. Zu diesem Zweck organisierten wir zwei Workshops, an derer die Lehrkräfte und die DoktorandInnen der Technischen Universität in Iași teilgenommen haben. Die erhaltene Daten waren gemäß den Anforderungen der qualitative Analysen bearbeitet. Die Ergebnisse drehen sich um das generelle Misstrauen der Teilnehmer in die staatlichen Institutionen und NROs. Die Universität ist als die Institution gesehen, die die Nachwuchsförderung im technischen Bereich hilft.

Schlüsselwörter: *Hochbegabung, Talent, technische Begabung, Werkstatt*

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I. Educational policies as public policies

Defining public policies, J. Anderson argues that it presents "a relatively stable and intended course of action, followed by an actor or set of actors, in order to solve a problem of concern" (Anderson, J., 1997, p.9, quote Stoica, V., 2000, p.17). We deal with a generic definition, but due Anderson's understanding of public policy only as one is being produced by a governmental institution, many authors keep the root concept by extending the list of "policy makers" beyond the governmental decision makers.

The concept of "policy" is frequently joined in the literature to the one of "strategy", regardless of the sector it appears: economic development and finance, social development, education, etc. But the relation between the concepts "policies" and "strategies" sometimes concerns mutual coordination or subordination, and sometimes are semantic overlapped. Both policies and strategies require a decision act with a higher or lower character of generality and therefore there are often used as synonymous. When public policies are expression of a general purpose or a national/global desirable status, then on may speak on strategies, e.g. Sustainable Development Strategy of Romania, European Commission Strategy for the Development of Higher education, etc. In this context, some authors use the concepts of policies and strategies as synonyms (Dascălu, N., 2011) during others distinguish between the two, by considering policies as subordinated to strategies (Macmillan, H., 2000, Căprioară, 2007).

Education is one of the fundamental areas of public policies at the same time determined and determinant for the specificity of the society to which it relates. According to C. Crețu, the subject of educational policy situates "at the intersection between the reactivity and proactivity valences of the educational action: the education policy studies both the purposes, methods and consequences of different adaptation strategies of the education to social realities and of those strategies determining social realities through education" (C., Crețu, 2004, p.73)

The educational policies as sector of public policies will be understood in the present paper as political decisions on establishing priorities, aims, resource allocation, formulation of criteria for measuring the efficiency and effectiveness of the process, - all these in relation to public or specific educational issues of general interest. Educational strategies will be also considered as decision documents, related to educational policies in what concerns the choice of necessary objectives, contents, methods, means and resources in solving an educational problem of public interest.

Being preoccupied about the issues of the supporting and promoting of the talented youth in technical field, we have investigated the intervention and

participation of the technical universities in Romania in this sector of education policy. Some results have already been published in 2013 (Anghel, 2013, b.). On that occasion we could show that technical universities in Romania possess in varying degrees also directions of institutional policy to support the students' academic performance, but they have no explicit policy in this sense. However universities, among other institutions are involved in supporting young people with technical talent in various proportions.

II. Methodology

The aim of the present study is to collect empirical data regarding the support of youth with technical talent through educational policies and strategies by exploring the opinions of some students and academics. On this purpose we have organized and conducted two exploratory workshop activities.

All students of the 2nd Module of psycho-pedagogical formation, organized by the Didactic Personal Training Department at "Gheorghe Asachi" Technical University of Iași, at the same time and academics or PhD Students at different faculties of the University (23 individuals) were invited at the workshop "Supporting youth with technical talent through targeted strategies on professional aspirations". A number of 13 persons have accepted our invitation. We have organized two different events, in order to get information from two homogeneous groups of subjects: academics (a group of 6 persons) and PhD students (7 persons). The participants were asked to undersign an agreement for participation and dissemination of workshop produced data.

The two workshops (with academics and doctoral students as participants) were designed and developed after focus-group scenarios (Krueger, R., Casey, M.-A., 2005, Agrabian, M., 2004; Bulai, A., 2000; Chelcea, S., 2004; Iluț., P., 1997; Morgan, D., L., 1998; Vaughn, S., Shay Schumm, J., Sinagub, J., 1996). Before starting the debate, the participants have been given theoretical information concerning the concept of "technical talent" - as "superior endowment in different areas of the technical, expressed as proven excellence by outstanding performance in this field, or as proven potential for excellence by results of various forms of assessment" (Anghel., O., 2013, 84) - and concerning the concept of " educational policies and strategies".

III. Data processing

Data recorded at the two workshops were transcribed and then processed through the technique of thematic cuts (Bulai, A., 2000, Krueger, R., Casey, M.-A., 2005). The following themes and sub-themes have been outlined by us following discussions with the two groups of subjects.

III. 1. PhD Students Workshop

a) Identification of students with technical talent is priority to their supporting and promoting:

- Absence of the concern how to identify students with hidden talent;
- Responsibility of identification lies with the university through its academics;
- Special training staff to deal with the identification;
- Establishment of a center/department to support the interests of those talented.

b) Support and promotion of the students with technical talent:

- Support is mainly through scholarships and it is desirable to exist also a moral support;
- University is the responsible main institution in supporting and promoting talented students;
- Nongovernmental organizations are involving far too less in this process, eventually only in supporting its own members;
- Students shall involve in promoting themselves;
- In lack of support, the talented either migrate to occupations below their level or migrate to other countries. This leads on the one hand to the loss of talent and on the other hand to country's economic decline.

III. 2. Academics Workshop

a) Supporting and promoting students with technical talent:

- Professors' support offer is bigger than students' ability to capitalize on it;
- Professors believe they offer support to talented, admitting that they do so especially to those affirmation-willing, these being very few;
- In order to be supported and promoted, the student shall be not only talented in the technical, but to prove the so called "soft skills", as in the Anglo-Saxon literature;
- It is raised the question if there is the need of finding a formal way to identify and promote students talented in the technical (head hunter, counseling center);
- The main consequences of deprivation young talented from support and promotion is that they are not hired in a job matching their talents or that they migrate to another country in searching a job. Both situations lead to a serious problem for the country, i.e. economic decline;
- The academics have difficulties in identifying talented students among their peers without talent.

b) Proposed programs and charged institutions:

- Types of support: programs of collaboration with the economic environment (offered by the example in which faculties facilitate the recruitment of talented by a company, in the Netherlands), scientific circles;
- Other institutions which should be involved in supporting young technical talent: companies/corporations having branches in university towns; Ministry of Education, even if its present involvement is more detrimental to everything that happens in academia; Local administration, through scholarships and facilitating the presence of corporations in the near; NGOs, even if their work is perceived as questionable.

IV. Interpretation of data

Supporting and promoting youth talented in the technical, as a general discussion, *is perceived by participants as existing in institutional practice*. Their involvement is different, from both the perspective of the proven facts and that of desirability for future interventions. The university is regarded as the one who should and do offer the most support to the talented, as being closest to them through their professors. Along with this, the involvement of different companies - even if opportunistic – is to be appreciated: the companies organize activities of supporting and promoting young students, primarily in order to have opportunities in identifying future employees. State institutions, through the ministries of education and of labor, are perceived as minimal involved and negative experiences caused by them on several occasions raise mistrust in possible future interventions. NGOs activities are less visible to the public, so that their action in supporting young people with technical talent is seen as too small. In this case, unlike governmental institutions, their work is required and considered as extremely important especially in moderating the relationship between students on the one hand, and university - economic environment, on the other.

Interpreting the data in depth, we identify some *particularities in the perceptions of the two groups of participants*. A first important aspect is that besides the themes proposed in workshops (supporting and promoting talented students in the technical and supporting strategies, oriented on professional expectations) the PhD students bring out a new theme: that of identifying students with technical talent. They believe that this is an issue prior of supporting and promoting, because talented students are not always identified and therefore, on may not even talk about supporting and promoting.

During the workshop, the PhD students counted a number of causes hindering the process of identifying, some due to students – who either have a

talent which even they are not aware, or they do not know how to make themselves visible to the professors - other due to professors - either they do not have time for this issue, due the large number of students allocated to them, or they are not prepared (in terms of theoretical issues) in identifying gifted people, others of those knowing how to make themselves visible. They have suggested several ways in which the identification process would be easier: organizing training programs in psycho-pedagogy of gifted and talented persons, addressed to academics and/or the establishment of a body - within the university - specialized in this issue. During the academics workshop, one of the participants invoked the usefulness of such a body, as having at least one representative from each faculty, whom he called "head-hunter" and whose role would be to identify talented people and direct them to different programs to be suitable for everyone.

Once clarified the issue of identification, we could appreciate the PhD students' point of view on supporting talented youth. The data shows that they perceive especially the support of university/faculty, objectified in various forms of scholarship. This form of support is laudable, but the financial support - which does not necessarily encounter those talented – should be doubled of emotional support. Talented students especially need guidance and moral support than material, as the PhD Students in our workshop assert.

If students believe that sometimes the talented are not identified, professors believe that the training level of their students is so low, that they rarely meet talented and often they treat them in the same way as the mass of students.

Only those that require help and those expressing their wish of being visible during courses and applications – which represent a small number of students - receive a differential treatment. The difference between the support offered and support demanded is proven to be big. It is true that many faculties organize extracurricular programs – the participants cited the case of weekend clubs or thematic circles initiated in partnership with a Dutch company - but these are addressed to all students, regardless of their talent. Students with technical talent may affirm among others only in situations of competition and the only activities where they cooperate are those where they are members of the same team in a competition.

There are also *points of convergence in the opinions of the two categories of participants*. The fact that all believe that talented students shall involve in their own promotion may be associated (and solved) with another matter to which all participants agree: there are invoked both the need to develop the technical skills (also known as "hard skills") and those in the category of "soft skills". In this way it is recognized the radical role of this category of skills in the

career success of the talented in technical, both on short term (partaking in contests and being team members) and on long term (acquiring the best job, effective working with colleagues, function advancing). Organization of "soft skills" training courses, regardless of whom might be the bidder - university, an NGO, firm/company - would be a benefit for those talented, so that they would have the opportunity to be together in other contexts than of specialists, moreover it would bring together valuable persons with different specialties.

V. Conclusions

Our objective was to explore the opinion of PhD students and professors of "Gheorghe Asachi" Technical University of Iași, participants to our workshops, regarding the involvement of various institutions in supporting and promoting students with technical talent from the Romanian technical universities.

The empirical data have revealed us the general distrust of the participants in state institutions, concretely, concerning the work of the Ministry of Education, seen as unable to develop any strategies to support young people with technical talent. Furthermore, it is considered that the safest support the Ministry can offer might be its complete absence from this environment. Its involvement would rather break any initiatives of the universities or economic institutions interested to engage themselves in supporting the young people's performance in the technical. On the other side, the university has, through its teachers, the highest level of confidence in the potential of supporting and promoting talented students, even if the PhD students believe that this involvement is achieved mainly through the financial aid given to the best with a minimum moral support. Not too many academics are willing to devote a part of their time to activities for the talented, because the university does not motivate them in any way for such achievements, which remain a matter of personal choice. The economic institutions are also invested with high, especially the large, transnational companies, having local offices in the university centers. Having their own interest in highly qualified human resources and especially in performance, these carry increasingly more frequent activities dedicated to the talented - competitions, workshops, company presentations, etc., but also scholarships and practice offers - most of them developed in partnership with the university. Sometimes NGOs are members in these partnerships, but their work is perceived as minimal.

Information collected from PhD students (technically talented proved by their research work) and professors who meet daily talented students, can suggest various starting point in establishing authentical policies and strategies to support young talented by various institutions responsible.

Aknowledgements: This paper is part of my doctoral thesis named *Educational Policies and Strategies to Support and Promote the Talent in Techical Domains.* I wish to express my gratitude to my scientific coordinator, Ph Creţu Carmen Mihaela, for mastery with which she guided me in my research.

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SPATIAL CONCEPTS RELATED TO EXPRESSIVE LANGUAGE IN PRESCHOOL CHILDREN

CAROLINA BODEA HAŢEGAN[*], DORINA TALAŞ[**], FLORENTINA DANIELA POP[***]

ABSTRACT. This study "Spatial concepts related to expressive language in preschool children" offers a new perspective of the spatial framework theory in preschool children in Romania. The study investigates the language abilities related to spatial concepts following the three major axes: up-down, in front-behind, left-right correlated with language production/ expressive language. During this research 143 preschool children were testes with three types of tasks: *concrete tasks*, *symbolic representations tasks* (spatial concepts were approached through visual representations) and *verbal tasks* to evaluate their spatial concepts. The results demonstrate the relation between spatial concepts and language development; the way the language develops from concrete object manipulation to verbal production is intermediated by symbolic representations, this way makes the difference between emergent abilities and mastered abilities using spatial reference. This research also underline the acquired stages within the three different spatial axes: up-down (emergent in the age range of 3-4, mastered in the age range of 4-5), in front-behind (mastered from the age range of 4-5 as similar results are obtained in 5-6) and left-right (emergent in the age range of 5-6).

Keywords: *spatial concepts, expressive language, preschool children, pre-acquisitions, basic concepts*

ABSTRAKT. Dieser Studie „Gebietliche auffassung der ausdrucksvollen sprache bei den vorschulkindern" zeigt eine neue Perspektive über die Theorie des gebietichen Bezugssystems bei den Vorschulkindern. Die Studie untersucht die sprachlichen Fähigkeiten in gebietlicher Auffassung und berücksichtigt drei wichtige Hauptlinien: aufwärts-unterwärts, vor-nach, links-rechts der sprachlichen Produktion/ausdrucksvollen Sprache entsprechend. In dieser Studie wurden 143

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Vorschulkinder getestet mit drei Typen von Aufgaben: *konkrete Aufgabe, Darstellungsaufgaben*(gebietliche Auffassungen wurden angesprochen durch visuelle Darstellungen) und *mündliche Aufgaben* um ihre gebietliche Auffassung auszuwerten. Die Ergebnisse beweisen die Beziehung zwischen die gebietliche Auffassung und die Entwicklung der Sprache; wie die Sprache sich entwickelt aus dem Umgang mit konkreten Gegenstände bis zu der mündlichen Produktion ist dazwischengelegt durch die symbolischen Darstellungen, so es macht den Unterschied zwischen auftauchenden Fähigkeiten und beherrschte Fähigkeiten den gebietlichen Bezug benutzend. Dieser Studie betont die erworbenen Phasen in drei verschiedenen gebietlichen Hauptlinien: aufwärts-unterwärts (auftauchend zwischen der Altersgruppen 3-4, beherrscht zwischen dem Alter 4-5), vor-nach (auftauchend zwischen der Altersgruppen 4-5 und dieselben Ergebnisse sind zwischen 5-6 zu finden) und links-rechts (auftauchen zwischen den Altersgruppen 5-6).

Schlüsselwörter: *gebietliche Auffassung, ausdrucksvolle Sprache, Vorschulkinder, vor dem Erlernen, Grundbegriffe.*

Basic concepts

Understanding the spatial concept relation with language is decisive in language development. The spatial concepts are involved in almost all our activities, in everyday life; they play an important role in learning reading and writing.

Children begin to achieve their basic concepts in the first months of life. The infants begin to develop these basic concepts manipulating different objects, toys and instruments or interacting with other people.

Bracken (1987) developed the Bracken Concept Development Program for teachers to assess the preschool children aged 2 years, 6 months through 7 years, 11 months and to offer a great example of general principles to use in the instruction. This instrument is a great tool for teachers and parents to help their children to achieve the basic concepts in order to develop their "foundational language" (Bracken, Crawford, 2010). These basic concepts are essential for children to understand simple directions, different tasks and to be able to participate in a conversation (Boehm, Classon, & Kelly, 1986; Bracken, 1986)

Scott-Little et al. (2003) followed Bracken's basic concept list (1987) and included the following concept categories in preschool standards: colors, letters, numbers/counting, size/comparisons, shapes, direction/position, self-/social awareness, texture/materials, quantity, time/sequence. Each category is divided in other subcategories and each subcategory has some concept examples.

There are many scales developed to measure basic concepts for different ages. The most popular scales are: Integrated Developmental Scale (Anca, Bodea Haţegan, 2012), the test of "Logopaedic Centre Romel" (Iossifova, 2014), Brigance Inventory of Early Development, Portage, MacArthur Communicative Development Inventories. Token Test for Children - Second Edition (TTFC-2) is a reliable and effective screening measure for assessing receptive language in children ages 3 years 0 months to 12 years 11 months. These scales offer a whole picture about the appropriate age these concepts are achieved in typical development.

Spatial concepts

Tversky (1990, 2001, 2005) categorized the spatial concepts in: space of the body, the space around the body, the space of navigation, the spaces created by people to augment their cognition. Morrison and Tversky (2005) studied the space of the body using different tasks to evaluate the major body parts: head, arm, hand, chest, back, leg, foot. The results indicate that "naming seems to activate the functional aspects of bodies" (Morrison and Tversky 2005, p.696). The space around the body concept category include the three major axes: head/feet, front/back and left/right spatial concepts Tversky, Kim, and Cohen, (1999). Space of navigation is a general concept involving the space we know from our direct contact (experience), from maps or from descriptions. The last category identified by Tversky, (2005) space is created by people to augment their cognition, uses mental representation to describe a specific route and involves a high level of abstraction.

Scott-Little et al. (2003) included in the direction/position category the following subcategories: three-dimensional direction (under, over, right, left), internal/external (inside, outside, around), relative proximity (near, far, beside), self/other perspective (my right, your right, my left, your left), front/rear (in front of, behind, forward, backward), specific locations (edge, corner), cardinal directions (north, south, east, west).

Spatial Framework Theory

The Spatial Framework Theory highlights the importance of the mental spatial framework involving the axes of the body, head/feet, front/back, and left/right for people to remember the location of different objects around the body. Franklin and Tversky (1990) studies support the Spatial Framework Theory; people construct a mental spatial framework out of these three axes of the body. According to their studies the first axis achieved is head/foot axis followed by front/back axis and left/right axis.

Language development

Language development is based on basic concepts acquisition according to Roulin (1991 apud Bodea Haţegan, 2013). Thus basic concepts are the starting point in acquiring oral language, which on its turn is the starting point for acquiring written language.

Göksun, Lehet., Malykhina.& Chatterjee (2013) studied the naming and gesturing spatial relation in focal brain injured individuals. The individuals with damage to the left posterior, middle frontal gyres, the left inferior frontal gyrus, and the left anterior superior temporal gyrus proved to have difficulties in naming spatial relations.

Thus, this research is focused on establishing identifying the milestones of development regarding different basic concepts within three preschool age ranges (3/4, 4/5, 5/6 years old). The differences among the three age ranges are also underlined by the different used tasks: *concrete tasks*, *symbolic representations tasks* (spatial concepts were approached through visual representations) and *verbal tasks.*

Hypothesis

There are significant differences between the data collected using concrete tasks and verbal tasks no matter the age range, regarding spatial references usage.

There are significant differences between the data collected using symbolic representations asks and verbal tasks no matter the age range, regarding spatial references usage.

Method

Stimuli. Six spatial concepts were selected following the ***Spatial Framework Theory*****:** "up", "down", "in front", "behind"," left "and "right". These concepts were evaluated using three types of tasks: concrete tasks, symbolic representations based tasks and verbal tasks. Some examples of concrete tasks are: "Put the car down!", "Put the dog in front of the house!", "Take the ball with your right hand!". Example of tasks on the worksheet: "Circle what …. is behind the…". Example of verbal tasks: "What is drown on the upper side of the paper?", Where is the ball compared to the bear?", "What is on the right side of Pinocchio?"

These types of tasks were different for each group according to their age.

Participants

There were 143 preschool children in this study. All these children belong to a kindergarten in an urban area in the north-west side of Romania (Zalău town). These participants are divided in three groups according to their aged: 44 preschool children aged 3-4, 40 preschool children aged 4-5 and 59 preschool children aged 5-6.

Table 1.

Participants in the research

Number of participants	Age range
44	3-4
40	4-5
59	5-6

Procedure

Each child selected in this group solved individually concrete tasks, symbolic representations tasks (spatial concepts were approached through visual representations) and verbal tasks following the trainer's instruction. The children in first group aged 3-4 years, were tested with concrete tasks, symbolic representations tasks and verbal tasks on the following concepts: "up" and "down". The children in the second group aged 4-5 years, were tested with concrete tasks, symbolic representations based tasks and verbal tasks on the following concepts: "up", "down", "in front" and "behind". The last group of children aged 5-6 years was tested with concrete tasks, symbolic representations tasks and verbal tasks on the following concepts: "up", "down", "in front", "behind", "right" and "left" as it is presented in the table 2.

Table 2.

Spatial concepts tested for each group age

Group age	Spatial concepts concrete tasks	Spatial concepts symbolic representations based tasks	Spatial concepts verbal tasks
3-4 years old	"up", "down"	"up", "down"	"up", "down"
4-5 years old	"up", "down", "in front" "behind"	"up", "down", "in front" "behind"	"up", "down", "in front" "behind"
5-6 years old	"up", "down", "in front", "behind", "right" "left"	"up", "down", "in front", "behind", "right" "left"	"up", "down", "in front", "behind", "right" "left"

Results and discussions

The differences between the three types of tasks: concrete tasks, symbolic representations tasks and verbal tasks bring into light data about the relation between verbal development and spatial references. It was expected that the concrete tasks to be the less difficult type of tasks offered to all the participants in the research whereas the most difficult ones to be the verbal material based tasks. Considering the mean value of the answers, for the three groups of participants in the research, this assumption is confirmed (see table 3). The symbolical representation tasks have an intermediate level of difficulty. Once spatial reference concepts are verbally used, visual symbolic representations are also correctly manipulated.

This study proves in this way the need to gradually approach these spatial concepts; they bring together non-verbal and verbal development.

Table 3.

Statistical descriptors of the answers

Type of tasks	Spatial reference	Age range	Mean	N	Std. Deviation	Std. Error Mean
Concrete tasks	up-down	3-4	.90	42	.297	.046
Symbolic tasks	up-down	3-4	.71	42	.457	.071
Verbal tasks	up-down	3-4	.67	42	.477	.074
Concrete tasks	up-down	4-5	.95	40	.221	.035
Symbolic tasks	up-down	4-5	.90	40	.304	.048
Verbal tasks	up-down	4-5	.93	40	.267	.042
Concrete tasks	in front-behind	4-5	.95	40	.221	.035
Symbolic tasks	in front-behind	4-5	.88	40	.335	.053
Verbal tasks	in front-behind	4-5	.80	40	.405	.064
Concrete tasks	up-down	5-6	.98	43	.152	.023
Symbolic tasks	up-down	5-6	.95	43	.213	.032
Verbal tasks	up-down	5-6	.95	43	.213	.032
Concrete tasks	in front-behind	5-6	.93	43	.258	.039
Symbolic tasks	in front-behind	5-6	.93	43	.258	.039

Type of tasks	Spatial reference	Age range	Mean	N	Std. Deviation	Std. Error Mean
Verbal tasks	in front-behind	5-6	.86	43	.351	.053
Concrete tasks	right-left	5-6	.70	43	.465	.071
Symbolic tasks	right-left	5-6	.56	43	.502	.077
Verbal tasks	right-left	5-6	.51	43	.506	.077

The fact that "up-down" concepts are correctly used in 3-4 year age range is also demonstrated by the fact that the mean average value of the answers is high, above .90, it going up (.98- participants aged 5-6 years) along with the improvement of speech and with the usage of other spatial referents. Even if the "up-down" concepts are correctly used in 3-4 years age range, during the 4-5 years age range significant improvements of the usage can be identified. Thus the mean values of the two groups' results are compared by using t test for independent samples, for all the three types of tasks. Results prove that children aged 4-5 years, improve their verbal abilities and the symbolic abilities, related with "up-down" spatial concepts. In table no. 4 t test results are presented in order to prove that children from the two groups aged 3-4 and 4-5 years obtain similar results when comparing their answers for the concrete task (Leven`s test is not significant, then the group variance is equal, and t=-.721, p>.05), while they obtain significantly different results when comparing their answers in symbolic (Leven`s test is significant, then the group variance is unequal, and t=-.2.312, p<.05) and verbal tasks (Leven`s test is significant, then the group variance is unequal, and t=-3.411, p>.01). It can be seen that along with the increasing of the abstractization level, the differences between the two groups are more significant, this proves the fact that during 4-5 years age important acquisitions for symbolic representations of the "up-down" spatial concepts are identified.

Table 4.

T test comparing 3-4 and 4-5 years old group regarding "up-down" spatial concepts

Type of task	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Concrete tasks	2.136	.148	-.721	82	.473
Symbolic tasks	25.008	.000	-2.312	74.981	.024
Verbal tasks	65.318	.000	-3.411	67.941	.001

In order to prove that the "up-down" spatial concepts are acquired and mastered in the three types of tasks, in the age range of 3-4 and 4-5, a comparison between the 4-5 and 5-6 groups was also performed. Results in t test prove the fact that not significant results between the two groups were identified, as it can be seen from the table no. 5.

Table 5.

T test for comparing 4-5 and 5-6 years old group regarding "up-down" spatial concepts

Type of task	**Levene's Test for Equality of Variances**		**t-test for Equality of Means**		
	F	Sig.	t	df	Sig. (2-tailed)
Concrete tasks	1.699	.196	-.646	81	.520
Symbolic tasks	3.613	.061	-.934	81	.353
Verbal tasks	1.177	.281	-.539	81	.591

The other pair of spatial reference concepts "in front-behind" is correctly used by participants in the research with ages in the range 4-5, their performances going up along with age, especially the verbal abilities of using these spatial concepts. Comparing the results obtained by the two groups of participants, 4-5 year age range and 5-6 years age range, when "in front-behind" spatial concepts were evaluated, no significant results were obtained. This means that the two groups of participants score similarly, and that even though results obtained in solving the tasks improve along with age, spatial abilities for "in front-behind" are completely achieved at 4-5 years old. Table no. 6 presents the results calculated for the t test.

Table 6.

T test for comparing 4-5 and 5-6 years old group regarding "in front-behind" spatial concepts

Type of task	**Levene's Test for Equality of Variances**		**t-test for Equality of Means**		
	F	Sig.	t	df	Sig. (2-tailed)
Concrete tasks	.564	.455	.374	81	.709
Symbolic tasks	2.934	.091	-.845	81	.400
Verbal tasks	2.147	.147	-.729	81	.468

"Left-right" spatial concepts are the most difficult reference concepts to use, the mean value of the results is at .70 even if the tasks performed were concrete, and even lower when the tasks involved different degree of abstractization (.56 mean value of the answers when the symbolic representation tasks were used and .50 when verbal tasks were used).

These results prove that spatial reference concepts such as "left-right" still need to be improved along with the fallowing age range, these concepts are very important for academic achievement, aspect also underlined by Bracken, Crawford (2010).

Regarding the first hypothesis of the research results prove the fact that there are significant differences between the answers children offer for concrete tasks and verbal tasks, but just in the case of the spatial references that are in an early stage of mastering.

Thus, participants with ages in the range 3-4 scored significantly different in the concrete tasks and in the verbal tasks for the spatial items "up" and "down" ($t=3.186$, $p>.01$), participants with aged 4-5 years scored significantly different in the concrete tasks and in verbal tasks for the spatial concepts "in front" and "behind" ($t=2.623$, $p>.01$) and participants aged 5-6 years scored significantly different in the concrete tasks and in the verbal tasks for spatial concepts "left" and "right" ($t=2.710$, $p>.01$).

These results underline the fact that emergent spatial abilities are easily trained, introduced and developed using concrete tasks. The verbal tasks are extremely important in communicative abilities development, thus, they have to be part of the speech intervention program; in this way it is established the relation between concrete and symbolic, between speech prerequisites and verbal abilities.

The results conclude that when different spatial concepts are mastered no differences can be underlined when scoring in the three types of tasks. Thus, participants aged 4-5 years obtain no significant results among the three types of tasks, when "up" and "down" spatial concepts were evaluated and participants in the research aged 5-6 years obtain no significant results among the three types of tasks, when "up", "down", "in front" and "behind" spatial concepts were evaluated.

These results underline the fact that at the age of 3-4 years children have emergent abilities for using spatial reference concept for "up" and "down", while children with ages in the rages 4-5 and 5-6 master the using of "up" and "down" spatial concepts. "In front" and "behind" spatial concepts are already mastered by 4-5 years old children, while 5-6 years old children do not score significantly different in these spatial tasks. "Left" and "right" spatial concepts are emergent in children aged 5-6 years.

After analyzing the obtained results it is important to expand the research in a future study and to introduce other groups of participants aged 2-3 years and 6-7 years, covering the whole period of time for the developing of the spatial abilities. In the group of children aged 2-3 years, "up-down spatial concepts should also be introduce, while in children aged 3-4 years "in

front-behind" spatial concepts should be introduced, and in children aged 4-5 years "left-right" spatial concepts should be introduced. It is important to expand this research to get more reliable results, to underline the milestones achievement in the main three axes of spatial concepts for Romanian children.

The data collected using visual symbolic representation tasks prove the above underlined aspects differentiating between mastered and emergent abilities using different tasks even if the second hypothesis of this research was not confirmed.

Table 7.

Comparisons between symbolic representation based tasks/verbal productions based tasks

Types of tasks to compare	Spatial reference	Age range	T value	Sig. (2-tailed)
symbolic representation tasks/verbal tasks	up-down	3-4	.530	.599
	up-down	4-5	.572	.570
	in front/behind	4-5	1.356	.183
	up-down	5-6	-1.000	.323
	in front-behind	5-6	1.775	.083
	left-right	5-6	.628	.533

One possible explanation for the fact that the hypothesis was not confirmed is the reduced number of participants in the research. The fact that spatial reference concepts are usually introduced, from a curricular point of view, through the three different means: object based, symbolic based and verbal based can also be an explanation for the fact that the second hypothesis of this research was not confirmed.

Conclusions

This establish the relation between motor, concrete object based development and abstract, symbolic, language development focusing on three different spatial axis: "up-down", "in front-behind" and "left-right". The three different types of tasks: concrete tasks, symbolic representations tasks and verbal tasks enable the researcher to establish a stage development in those six spatial reference concepts. This stage development can be used to design speech and language therapy and to design the curricular approach of language prerequisites.

The results confirm Franklin and Tversky (1990) studies, the first axis archived by the preschools tested during this study is head/foot axis followed by front/back axis and left/right axis**.**

A future perspective to expand this research and to demonstrate the fact that "in front-behind" axis is mastered even from 4-5 years old, children aged 3-4 can be assessed in order to establish that emergent/mastered "in front-behind" spatial abilities are already present at this age. Then, introducing other group of participants in the research, participants aged 6-7 years, may prove the fact that "in front-behind" axis is mastered at 4-5 years, the 6-7 years old children should obtain similar results with those with ages in the ranges 4-5 and 5-6.

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A PRELIMINARY INVESTIGATION OF A PARENTAL STRESS MEASURE FOR PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS AND DOWN SYNDROME

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ABSTRACT. Parents of children with disabilities were identified as presenting higher levels of negative emotions, higher risks for psychopathology and physical illness, as well as higher levels of distress, compared to parents of children with typical development. In general, more attention towards the needs of the parents who have children with disabilities in Romania is necessary, but research on the topic is scarce. Our preliminary study of parental stress is centered mainly on testing the reliability of the translated and adapted version of the Parental Stress Scale (Berry and Jones, 1995) on a Romanian sample of parents of children with ASD and Down Syndrome. Our results show that the parents of children with ASD and Down Syndrome do not report high levels of distress attached to their parental role and that the level of parental distress increases with the child's age. The scale proved to be a valid measure of parental stress in parents of ASD and Down Syndrome children, but future validation on larger samples of parents of children with disabilities is needed.

Keywords: *parental roles, assessment, parental distress, autism, Down Syndrome*

ZUSAMMENFASSUNG. Bei Eltern die Kinder mit Behinderungen erziehen, wurden erhöhte Werte an negativen Gefühlen festgestellt, ein verstärktes Risiko der Psychopathologie und der physischen Erkrankungen sowie höhere Stresswerte. Allgemein empfiehlt sich eine höhere Aufmerksamkeit gegenüber den Eltern von Kinder mit Behinderung, die in Rumänien leben, jedoch gibt es unzureichende Untersuchungen zu dem Thema. Unsere vorausgehenden Untersuchungen bezüglich des Stresses, dem die Eltern ausgesetzt sind, beziehen sich vordergründing auf das Testen der Zuverlässigkeit einer übersetzen und

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angepassten Version der Skala zur Messung von Stress-Auswirkungen bei Eltern (Berry and Jones, 1995) gegenüber Rumänischer Probanden - Eltern von Kindern die an Autismus und Down Syndrom leiden. Aus unseren Ergebnissen geht hervor, dass Eltern von Kindern mit Autismus und Down Syndrom Erkrankungen keine erhöhten Stresswerte bezüglich ihrer Elternrolle vorweisen und dass gleichzeitig die Stresswerte mit dem Heranwachsen ihrer Kinder steigen. Die Skala hat sich als zuverlässiges Instrument erwiesen, jedoch ist eine zusätzliche Bestätigung davon durch die Beobachtung einer höheren Anzahl an Probanden nötig.

Schlüsselwörter: *Eltern Rolle, Bewertung, Eltern Stress, Autismus, Down Syndrom*

Background

The challenges and emotional demands of daily life are higher in parents of children with intellectual disability which leads to difficulties in the parents' daily functioning (Norlin and Broberg, 2013) and increase of parental distress (Beck et al., 2004). Various authors reported levels of depressive symptoms below clinical relevance, showing that most parents adapt successfully to the diagnosis of their children and even place positive value on raising a child with disabilities, even though several changes in the family may occur (i.e., marital conflict, single parenthood, low quality in couple relationship). Still, studies carried out in different cultures found that parental distress is higher in parents of children with disabilities in comparison to parents of children without disabilities. Parental distress was higher in either mothers or fathers of children with developmental disabilities (Gupta, Mehrotra and Mehrotra, 2012, Huang et al., 2014), children with autism (Gika et al., 2012), and children with ADHD (Tzan, Chang and Liu, 2009, Sethi, Gandhi and Anand, 2012).

Several authors show that, in fact, the lives of people with disabilities, as well as the negative impact of disability on the family are determined by social factors, especially negative attitudes and prejudices towards disability, such as the tragedy discourse and the perspective that the family is a victim of circumstances (Broberg, 2011). Also, parental distress may be high not because of the burden that the child imposes, but because of contextual factors and circumstances that the parent experiences raising a child with disabilities. On the other hand, Baxter, Cummins and Yiolitis (2000) argued that increasingly normalized conceptualization of disability, as well as deinstitutionalization of children with disabilities during schooling, increasing access to services and facilities in the community may impact the level of parental distress and also

shift the focus of parental distress from the child to the family system and its ability to cope to life problems and challenges.

Parental stress is significantly associated with the children's level of functioning (Gika et al., 2012), meaning that the lower the children's functioning the higher the parental distress, while increased levels of parental distress lead to alteration of the parents' ability to adapt and care for their children (Agazio and Buckley, 2012). Minor psychiatric problems of the parents, such as depression and anxiety are associated with the extent and frequency of behavior problems in children with intellectual disabilities (Beck et al., 2004).

Deater-Deckard (1998, cited by Hastings, 2002) investigated the association between parental distress and the behavior problems of children with developmental disabilities and found a cycle of reciprocal influence between parenting behavior and child conduct problems: parent behavior influenced children's behavior, which in turn influenced parents' level of distress. Thus, according to the authors cited, parenting behavior mediates the impact of parental distress on child outcomes.

Orsmond et al. (2003, cited by Beck et al., 2004) also found a bidirectional effect of child behavior problems on maternal well-being. Child behavior problems and lack of pro-social behavior was found to be predictive for parental distress (Beck et al., 2004). On the other hand, Lopez et al. (2008) underlined the importance of parental coping strategies on the distress level, stating that the use of adaptive coping strategies lowers the distress level. Gupta, Mehrotra and Mehrotra (2012) found that the religious coping is effective for stress management of Indian parents raising a child with developmental disabilities.

Parental distress in the context of having a child with disability was correlated to quality of life and well being. Parental quality of life was lower in fathers of children with developmental disabilities compared to fathers of healthy children (Hastings, 2002, Huang et al., 2014).

Stress in parents of children with Autism Spectrum Disorders

Autism Spectrum Disorders are lifelong severe neurodevelopmental disorders entailing a considerable functional and financial burden on the individual and family. Autism, as a prototypical disorder includes qualitative impairments in social interaction, qualitative impairments in social communication, restricted repertoire of interests, behaviors and activities, the evidence of delay or deviation being present in the first three years of life. Most of the characteristics of ASD are present early in life: limited or absent attention sharing behaviors, reduced spontaneous imitation, difficulties in understanding and using symbolic behaviors (American Psychiatric Association, 2013). Many children

with ASD have a quite difficult behavioral profile, involving self-injury, tantruming, complex rituals, which can be hard to manage and can interfere with the daily lives of their families. Disruptive behaviors, fixed schedules and the demands of daily life may also make it difficult for families to participate in activities outside the home (Bouma and Schweitzer, 1990, Fox et al. 2002, Lee et al., 2008).

A child diagnosed with ASD may represent a constant source of distress on the family unit, affecting caregivers, siblings and relationships between family members (Sanders and Morgan, 1997). Having to cope with the physical and emotional demands of caring for a child with ASD can be a threat for the psychosocial wellbeing of parents (Lee et al., 2008). Their self-confidence and self-esteem can really suffer when the family has to face the child's behavior and his special demands (Gray and Holden, 1997). It is very common for parents having a child with ASD to experience helplessness, feeling of inadequacy and failure, anger, guilt, frustration and resentment (Jones, 1997). They could refuse to give the proper medication to the child, even when the family's ability to function effectively is threatened by the child's severe behavioral problems. Stress is mostly related to the issues of ongoing dependency and the limits imposed to the family activity (Konstantareas, 1995).

It has been reported that the level of emotional distress in parents is positively associated with the level of challenging behaviors of the child (Allik et al., 2006) and it is negatively associated with the child's ability to communicate functionally (Ello and Donovan, 2005).

Other psychological problems including depression and anxiety were reported within families with children having autism and in the same time, studies have shown that a high level of distress experienced by mothers had an inverse relationship with the educational progress of the child (Robbins et al., 1991). Some caregivers of a child with ASD experience a sense of social isolation, due to the time and energy needed for the child, which severely limits their free time and ability to engage in social activities (Higgins, Bailey and Pearce, 2005).

Various authors report that the distress on families who have a child with ASD may be exacerbated because this disability is often not identifiable by physical appearance (Sanders and Morgan, 1997). There is also a lack of understanding from the community of the behaviors associated with ASD and as a result, people are often insensitive regarding the public behavior of children with ASD. Research also demonstrates that the distress associated with ASD impacts on most aspects of families' lives: recreation activities, housekeeping, emotional and mental health of members, marital relationships, sibling relations and relationships with extended family, friends and neighbors (Rodrigue et al., 1990, Benson and Dewey, 2008, Gika et al., 2012).

Another problem that could affect families with ASD children is related to financial challenges because this could involve higher rates in work loss and important medical costs (Hecimovic and Gregory, 2005). Independence is a particularly important issue for children with autism as they are more likely to remain dependent on their family or services for support as they get older compared to children with other disabilities (Howlin et al. 2004).

When compared to the level of distress of parents raising children with Down syndrome, mental retardation and non-disabled children, parents of children with ASD had higher scores (Benson and Dewey, 2008), showing higher levels of distress.

Stress in parents of children with Down syndrome

Down syndrome represents a congenital chromosomal disorder due to an error in cell division which leads to an extra 21st chromosome that causes cognitive delay, impaired language and communication skills, possible sensory impairments, motor delay, associated medical conditions. Down syndrome is a lifelong impairment which determines the need to benefit of educational and rehabilitations programs for the development of language and communication, cognitive abilities, motor skills, self-help abilities, social and emotional competences. In relation with parents of children without disabilities, parents of children with Down syndrome perceive more caregiving difficulties, child-related distress regarding demandingness, the need of extra support, unacceptability and parent- related distress (Roach, Orsmond, and Barratt, 1999).

There is an abundance of literature suggesting a "Down syndrome advantage" in mothers of children with Down syndrome compared with mothers of children with other intellectual and developmental disabilities (Esbensen and Seltzer, 2011). Mothers of children with Down syndrome report lower levels of distress, have more extensive and satisfying social support and networking and perceive their child as being less difficult (Abbeduto et al. 2004). Mothers of adolescents and young adults with Down syndrome also display better psychological well being than mothers of similarly-aged children with other types of intellectual and developmental disabilities (Abbeduto et al, 2004). They also have reported less pessimism about their child's future, more closeness in the relationship with their child, and fewer depressive symptoms (Esbensen and Seltzer, 2011). After reviewing the wok of several authors, Esbensen and Seltzer (2011) reached the conclusion that the Down syndrome advantage can be conferred to older maternal age at the time of the birth of the child with Down syndrome which leads to greater maturity and financial

stability. The authors also suggest that better well-being and less parental distress relate to the Down syndrome behavioral phenotype of having fewer behavior problems contributed the most to better outcomes.

Glidden, Grein and Ludwig (2014) show that Down syndrome advantage is most likely when the metric is about the child rather than the parent or family, that it may be present or absent at different ages, and it is partially explained by higher levels of adaptive behaviors, suggesting the importance of multiple measures at multiple times, and implications for family expectations and priorities across lifespan. Most, Fidler, Laforce-Boothe and Kelly (2006) sustain through their studies findings that early emergence of the Down syndrome behavioral phenotype may play an important role in shaping maternal experience. As behavioral patterns become more pronounced (cognitive delays, language delays, maladaptive behaviors) during the first 3 years of development in children with Down syndrome, maternal distress levels increase. Stronger cognitive-linguistic skills and lower levels of maladaptive behavior at all time points were associated with lower levels of distress.

In the support of the Down syndrome advantage is the fact that the condition is diagnosed and confirmed to the parents at birth or soon after or even before the child is born, thus the parents having the opportunity to begin the process of assimilating this information into their expectations, understanding their parenting role, and in many cases, beginning a coping process. (Most et al., 2006).

Van der Veek, Kraaij and Garnefski (2009) investigated the cross-sectional and prospective effects of cognitive coping strategies on the distress experienced by parents of children with Down syndrome. The results showed that using acceptance, rumination, positive refocusing, planning, and catastrophizing more often were related to increased levels of parental distress, while using positive reappraisal was associated with less parental distress.

Assessment of parental stress in parents of children with disabilities

The measurement of parental stress was not really a subject of interest for quite a long period of time. Some general stress inventories include items related to parenting, but it is impossible to differentiate the stress associated with the role of being a parent specifically in these measures.

One measure, the Parenting Stress Index (PSI) (Abidin, 1986), which is designed to measure distress in a parent-child system is used with parents of children without clinical problems. The index has been criticized because it did not measure the construct of stress, because it was considered highly invasive and because of its problems concerning the gender difference, with fathers scoring significantly lower than mothers.

Available research provides general support for the conclusion that parenthood may have negative consequences on psychological well-being and that children exert negative influence on the quality of other family relationships (McLanahan & Adams, 1987). For sure, there is a need for better understanding of the connections between parental distress, on one side, and well-being and the quality of other relationships such as couple, on the other side, taking into account both the rewards and demands of parenthood. One step ahead was the development of a more direct measure of individual differences in the level of stress associated with raising children.

Compared to other measures for parental stress, Oronoz, Alonso-Arbiol and Balluerka (2007) consider the Parental Stress Scale (Berry and Jones, 1995) appropriate because of its wide applicability, as well as for the accessible formulation if the items. The measure is designed to assess the level of stress associated with child rearing and generated by the parenting role itself.

The Parental Stress Scale was originally tested for validity on several groups of parents with at least one child under the age of 18 living at home; the samples were generally well educated and many held managerial and professional occupational positions (Berry and Jones, 1995). Relevant literature on stress and parenting was surveyed by the authors in order to identify potential themes and concepts involved in parental stress. The item selection aimed to consider the dichotomy of parenthood, source both of pleasure and strain. Positive themes include emotional benefits (love, happiness, fun) and sense of self-enrichment and personal development. Negative components include demands on resources such as time, energy and money and opportunity costs and restrictions. Half of the items indicate higher stress and the others indicate lower stress (Berry and Jones, 1995). The measure proved to be a reliable instrument for the assessment of parental stress on Romanian populations of parents of children without clinical problems or disabilities aged between 2 and 17 years (Gaviţa et al., 2011a, b, Gaviţa, David and DiGiuseppe, 2014).

Though research focusing on the stress of parents raising children with disabilities is vast, the findings are contradictory and so far the dilemma regarding positive and negative impact of the presence of a child with disabilities in the family system has not been concluded. Research regarding Romanian population has been scarce, although the legal and social changes for children with disabilities require more attention in research and practice on the parents and families of these children.

In order to approach this need, the current study has as objectives:

a) the adaptation and preliminary testing of reliability on Romanian population of a scale that assesses parental stress;
b) the investigation of the levels of parental stress experienced by parents of children with ASD and Down syndrome and

c) the exploration of some demographic characteristics associated with differences in the stress levels reported.

Method

Participants

Thirty-two biological parents of children with ASD and Down syndrome were recruited from several agencies addressing the needs of children with disabilities, as well as several special schools in Cluj-Napoca, Romania. All the participants volunteered to participate in the present preliminary study of parental stress. One of the participants did not understand the procedure and therefore we considered that the results given could bias the whole analysis and therefore were eliminated from the database.

Measure

The 18-item version of the Parental Stress Scale was found to have adequate reliability (Berry and Jones, 1995) as a measure of the distress attached to parenting, an alpha Cronbach coefficient of .83, on a total sample of 125 parents of children without disabilities. There were several administrations of the scale in order to assess the validity of the instrument, as the authors reported. Also, good reliability of the measure was found on Romanian populations of parents raising typically developing children (Gaviţa et al., 2011a, b, Gaviţa, David and DiGiuseppe, 2014), Cronbach alpha values ranging between .83 and .85.

Following two analyses with the purpose to observe the ability of the scale to discriminate between parents of typically developing children and parents of children with both developmental and behavioral problems, the results of the discriminant analyses showed that the scale is able to differentiate between the two samples of parents (Berry and Jones, 1995).

In addition to the PSS, the parents also completed measures of loneliness, anxiety, marital satisfaction, job satisfaction, state guilt, trait guilt, social support satisfaction and the dimension the social support network. Parental Stress Scales scores were significantly related to all measures in the expected direction, with one exception – number of people in the social support network for fathers (Berry and Jones, 1995).

Also, results from the factor analysis suggested the relevance of considering specific components of parental stress (rewards, stressors, control). The authors suggested that additional data are needed to assess the co variation between the PSS and other measures of interpersonal functioning, attitudes and emotions and to determine if the PSS is an appropriate measure for larger

socioeconomic groups, for single parents, for different clinical populations and for fathers of children with special needs. Nevertheless all the data suggest the utility of the Parental Stress Scale as a brief, valid and reliable measure of the important construct of parental stress.

The Romanian translation of the measure attempted to preserve the meaning of each item in order to maintain the equivalence with regard to the underlying construct. Three versions of the translation of the instrument were compared and the most appropriate wording for each of the items was chosen based on mutual agreement. The three researchers that translated independently the measure hold expertise in the field of special education and family systems psychotherapy. None of the 18 items of the original measure was eliminated.

Procedure

Permission to recruit the participants was requested from all the institutions involved in the present research. After the informed consent to volunteer was obtained from all the participants, the questionnaires were given to them to complete at home and to be returned in about one week time. The parents who needed further clarifications could ask for advice from the contact persons in each institution, who were instructed to respond to such requests from the participants.

Results and discussion

Demographic characteristics of the sample

The parents that volunteered to participate in our study ranged in age from 31 to 55 years (M=40.1, SD=6.08), most were from urban areas (58.1%) and most of them were mothers (64.5%). Of the total number who answered, 86.2% were married, 6.9% not married and 6.9% divorced, most were highly educated persons with graduate and postgraduate studies (54.9% of the total number). Still, a large part of the participant parents were employed as personal assistants for their child (45.2% of the total number).

The age range of the children with disabilities was between 4 and 16 years (M=9.8, SD=3.04), most of them were diagnosed with ASD (71% of the total number) and the rest with Down syndrome. A percentage of 29% of the children were the only ones that the parents had, while most of them (48.4%) had another sibling, 9.7% had two other siblings and 6.5% had 6 other siblings. Of the total number of children, 41.9% were first born.

Reliability of the Parental Stress scale

The Parental Stress Scale (Berry and Jones, 1995) used in our research was tested for reliability, by computing the alpha Cronbach coefficient. We obtained adequate values for the measure of scale reliability, namely an alpha Cronbach of .84, which shows that the Romanian translation and adaptation of the scale is a reliable measure of parental stress in parents of children with ASD and Down Syndrome, as indicated by the results obtained in our preliminary study. The values are similar to the ones reported by the authors of the instrument (Berry and Jones, 1995), but should be treated with caution given our small sample of participants.

Severity of parental distress and factors that influence the distress level

On the total sample of parents, the mean score we obtained for parental stress was 38.55 (SD=9.2), meaning that the parents in our sample did not seem to experience increased levels of distress. All the parents in our sample were recruited from institutions in which the child's with disabilities needs were appropriately approached and answered, which can be a reason why the parents did not experience high levels of distress in their role as parents. Still, a number of parents did experience higher levels of distress (the range of the scores was between 24 and 59) and even if a significant number of parents had scores below 40, we consider that several of them may be at risk, as 9 of the total number of 31 parents scored between 40 and 50 points and two had scores above 50 points, as shown in figure 1. As professionals, we cannot ignore that there are parents for whom raising a child with disabilities means high levels of distress and who are at risk because of this.

On the other hand, most of the parents included in our study asserted that they received support in raising their child with disabilities (a percentage of 54.8% of those who answered the question). The social support is indeed an important factor in the management of stress derived from the tasks that a parent normally has with respect to his/her child. Most of the support identified by the parents comes from the nuclear family (husband/ partner), but also from the extended family (grandparents, in particular) and from the larger system (teachers, child protection services and professionals, the state, NGOs). Reliable sources of support from a large network are important for the parents in their process to adjust to their children's needs.

The level of parental distress significantly correlated with the child's age ($r=.45$, $p<.05$), meaning that the higher the age of the child with disabilities is, the level of parental distress increases. This result is in line with theoretical assumptions and empirical evidence showing that with age, the child's disability

and limitations become more obvious, as he or she advances in schooling, while the parent's vulnerabilities become more explicit with age, leading to the increase of worry for the child's future. Also, as the child becomes older, the parent's ability to manage problem behavior decreases, leading to the increase of the parent's anxieties. All the parents and children were recruited from institutions offering special education services and therapies for children. In time, the efforts that the parents involve in various interventions, generating frustration in case the child's situation does not improve, seem to increase the distress level that the parent reports. The parents' age alone was not significantly associated with the level of parental distress.

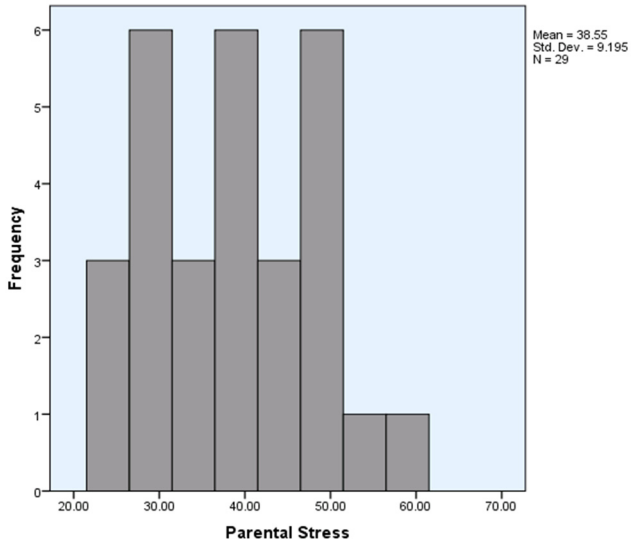

Figure 1. The distribution of the parental stress scores

As shown in table 1, other demographic characteristics were not relevant for the level of parental stress that the parents in our study reported.

Table 1.

The mean level of parental stress, depending on demographic characteristics

Characteristic	mean	t
Child's diagnosis		
Down Syndrome	37.86	.24
ASD	38.81	
Parent's gender		
Masculine	35.4	.84
Feminine	39	

Characteristic	mean	t
Origin		
Urban area	35.88	1.43
Rural area	41.67	
Parent's work status		
Unemployed	43	1.53
Employed	36.79	

Interestingly, our preliminary investigation did not find any significant differences between the levels of parental distress of the participants raising children with ASD and those of children with Down Syndrome, as other studies found, though a slightly higher level of distress was found for parents of children with ASD (table 1). Parents' gender did not account for significant differences in the levels of distress, though mothers in our study did report higher levels of distress compared to the fathers. Though not statistically significant, participants from rural areas were more stressed than those from urban areas and participants who did not work outside the home reported slightly higher levels of distress compared to those who were employed. As the size of our sample is very small, these results need to be further tested in other researches on larger samples.

Conclusions

Our results showed that the parents of children with ASD and Down Syndrome may not experience higher levels of distress, compared to the results reported in other studies. The mean scores reported by the authors of the scale (Berry and Jones, 1995) on a group of mothers of children with behavior problems was 43.2 (with a SD of 9.1), the mean scores of mothers who had children with developmental disabilities receiving special education services were slightly lower (M=40.1, SD=9.3) and the mean score of the mothers of children without clinical problems was significantly lower than both the previous ones, a mean of 37.1 with a SD of 8.1, which shows that the scores for the parental stress on the group of parents included in our research were not significantly different from the scores that the authors obtained for parents of children without disabilities.

Our preliminary investigation of parental stress adds important contributions to the development of the field of parenting children with disabilities, though given the small sample size our results should be treated with caution and tested on larger samples. The Parental Stress Scale (Berry and Jones, 1995) proves to be a reliable instrument for the assessment of stress levels in Romanian parents raising children with ASD and Down

Syndrome, as our preliminary investigation shows. The Romanian translation and adaptation of the scale was easy to understand for the parents and also easy to complete, so its use in future studies is recommended. The instrument itself needs further testing in order to become a valid assessment for practitioners working with children with disabilities and their parents.

In our study, the level of stress that the parents of children with disabilities experienced was not overall high, with some notable exceptions that our data emphasized, some of the participants experiencing stress levels much higher than the average. As practitioners, we have the duty to identify and provide the care that these parents may need, in order to reduce the potential risks.

The only demographic characteristic relevant for the stress level was the age of the child with disabilities, the older the child, the higher the distress that the parent reports. With time, the parents as caregivers of a child with disabilities may become tired and even experience symptoms of burnout. Also, with time, other risks and losses may add to those inherent to the specific characteristics of the child with disabilities. A possible direction for further research would be to differentiate between various sources of distress that the parents are exposed to, besides the difficulties arising from raising a child with ASD or Down Syndrome.

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IMPLEMENTING AND TESTING LEVEL I EXTENSION OF TRAINING FIRM METHOD

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ABSTRACT. This paper introduces an extension of the teaching-learning and evaluation model of Training-firms method, which supports high school economic curricula. We argue that hands-on business competences can be achieved by low-level business simulations between class members. Therefore, we advocate the organization of classroom as a virtual business environment, which groups students into several companies (mini training-firms) that interact directly. This is an advancement over the classic Training-firm method that requires an entire class to be organized as a company. We evaluate the impact of mini-firms based economic simulations, by field studies conducted in two high schools, in two consecutive school years. The research data is further supplemented by questionnaires applied to the whole studied population. The subjects of our research were high school tenth graders enrolled in Entrepreneurship Education class, respectively in the internship for the Trade and Tourism area of curriculum areas "Man and Society" and "Technology". Ultimately, our proposed Mini Training Firms method targets any high school students in technological and services curricula, with diverse skills and theoretic background.

Keywords: *training firm, entrepreneurship, teaching and learning model*

ZUSAMMENFASSUNG. Dieser Beitrag stellt jährige Verlängerung des Lehr-Lern-und Bewertungsmodell von Übungsfirmen-Methode, die unterstützt die wirtschaftliche Hochschullehrpläne. Wir argumentieren, dass praktische Business-Kompetenzen von Low-Level-Business-Simulationen zwischen den Teilnehmern erreicht werden. Daher befürworten wir die Organisierung von Unterricht als eine virtuelle Geschäftsumgebung, in der die Schüler in Gruppen Mehrere Unternehmen (Mini Schulungen Firmen), die direkt interaktionen. Dies ist Fortbildungsunternehmen über die klassische Methode erfordert, dass die ganze Klasse als Unternehmen

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organisiert wird. Wir untersuchten die Auswirkungen der wirtschaftlichen Simulationen aufgrund Mini Firmen, von Feldstudien in zwei Gymnasien in zwei aufeinanderfolgenden Schuljahren durchgeführt. Die Forschungsergebnisse wird durch Fragebögen bei ganzen untersuchten Population angewendet ergänzt. Die Themen der Forschung waren Zehnklässler in der Hoch Schule Klasse Entrepreneurship Education eingeschrieben, die jeweils den Praktikums Handel und das Tourismus Bereich, Lehrplan Bereichen "Mensch und Gesellschaft" und "Technology" folgen. Letztlich zielt unsere Methode die vorgeschlagene Mini Übungsfirmen irgendwelche Gymnasien in technologischen und Dienstleistungen Lehrpläne, mit unterschiedlichen Fähigkeiten und theoretischen Hintergrund.

Schlüsselwörter: *Übungsfirma, Unternehmertum, Lehr- und Lernmodel*

1. Introduction

Contemporary Europe must face a new phenomenon - transition from entrepreneurship education towards the “entrepreneurial society". This process involves the development of initiative and entrepreneurial spirit, which is the middle that leads to entrepreneurial central role in the development of entrepreneurship education transition back (Ciobotaru, 2013).

Entrepreneurship is a key competence laid down in the European Framework of Qualifications (European Commission, 2006), (European Commission, 2013). Bearing in mind that no individual is born entrepreneur, the question is of the role that education plays in the relationship between market and entrepreneurial education itself that some areas of interest are distinct one from another. Thus, entrepreneurship education has the function of a bridge between market and education. According to experts, the current stage of entrepreneurship is focused not on education itself, but on the educational aspects and categories based on economic principles (Ciobotaru, 2013).

Entrepreneurship education has evolved from teaching knowledge of starting a business to experience entrepreneurship. This is actually the answer to the question that teachers ask themselves, namely "How can we teach / learn entrepreneurship?" (Ciobotaru, 2013).

Our approach, which we present in this article, is part of the process of changing the methodology of teaching-learning and evaluation of entrepreneurial from traditional to modern methodology; the essential differences between the two methodologies are listed below (see Table 1):

Table 1.

The traditional methodology of entrepreneurial education versus modern methodology:

Traditional methodology	Modern methodology
• Developing a business plan • Case studies • Courses / conferences	• Interviews with entrepreneurs • Visits to familiarize the business • Internal Traineeship (internship) • Behavioral Simulations • Computer Simulations

Source: Ciobotaru, 2013

The model of level I exercise company suggested still meets the requirements of the European reference since it aims in particular four of the eight key competences described in the document of the European Parliament, namely (European Commission, 2006):

- Digital competence;
- Social and civic competences;
- Sense of initiative and entrepreneurship;
- Basic skills in mathematics, science and technology.

These are intersected by a number of transversal skills that include critical thinking, creativity, problem solving, risk assessment, decision making, constructively management of emotions, etc. Each of the key skills should be acquired and then transferred in everyday life.

According to the Romanian Center for Training Firms (ROCT) documents, the general objective of teaching and learning through exercise firm (regardless of level) is to develop entrepreneurship in the following ways (ROCT, 2005):

- Familiarize students with the specific activities of a real company;
- Simulation of operations and business processes specific to the real business environment;
- Develop skills and attitudes necessary for a dynamic entrepreneur. This is a person able to develop a production process, to bring to market a new product or service, namely to identify and use a new distribution channel.

2. Outline the level I exercise firm (mini-exercise firm)

Teaching-learning process through the level I exercise company is based on a closed model, the so-called "learning office", in which must be simulated all the activities and economic situations, and relationships between the firm and other elements of the external environment- customers, suppliers, competitors, banks, etc. are presented by the teacher (as defined out by the ROCT[1]).

[1] See www.roct.ro/firme-de-exercitiu/concept/

The exercise company's organizational model can be used in the CDL[2] at tenth grade, the service profile, as seed-stage of exercise firm (according to recommendations of ROCT) (ROCT, 2005).

Level I exercise firm (mini-exercise firm) has several characteristics:

- Do not relate to the external environment of the classroom;
- Not recorded in ROCT;
- The teacher is the one who initiates situations will be simulated;
- The teaching and evaluation is action oriented;
- Student performs activities through all company departments and its tasks either individually or in teams.

Basically, the model of teaching-learning and evaluation by level I exercise firm is based on two principles:

- Computer training (e-learning);
- Learning by doing.

At the core of teaching and learning method proposed by us lies a completely different approach of the concept of training firm. The model is to create, in each class, a virtual business environment, consisting of several mini-training firms. They have a small number of participants and the collaboration of mini-companies exercise is done in the classroom and not outside it, as if the concept of level II training firm. In this way, each student must achieve at a time, each of the activities of a real company. On the other hand, interactions between mini-training firms organized in the same class provide a solid foundation for engaging and empowering each student.

Mini-training firms will work in 4-5 fields, chosen from the specialization of the class. The purpose of creating these mini-training firms is to allow students to use the skills acquired through specialized theoretical classes.

From the point of view of the teacher, classroom organization in mini-training firms actually means organization working class groups, each group consisting of the number of four students. To do this, the teacher can use several methods[3] such as:

- "one standing, three runs";
- "mixing";
- "mix up / frozen / form pairs";
- Method "seagulls and dolphins"
- Method of colored cards;
- The draw (with letters, numbers, drawings).

Each of these methods can be applied in different situations and moments of the mini-firm existence. These methods are specific for critical thinking (Steele, 2000), (Temple, 2000).

[2] CDL = Curriculum in Local Development

[3] We have taken it from the website firmaexercitiu.tvet.ro/index.php/sesiuni-formare

Schematically, in our conception the virtual business class environment is illustrated in figure 1:

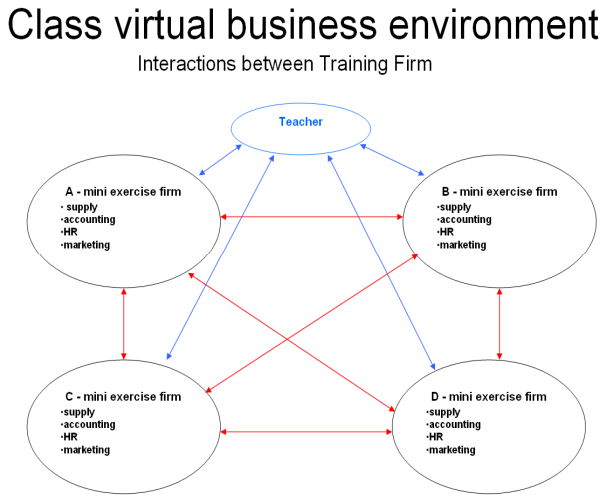

Fig. 1. Schematic representation of the virtual business environment of class

As shown in the figure, the virtual business class consists of (apparent) of the four mini-company office, denoted A, B, C and D. All companies interact with each other, and each of which interacts with the teacher. The organizational schema of a mini-training firm includes the following departments: purchasing/ procurement, accounting, human resources, marketing/sales. Each student occupies a position within each department.

The interactions between two mini-training firms are based on client-provider relationship. Each of the mini-companies turns to play the role of a client or supplier, to the other company, as we show in figure 2:

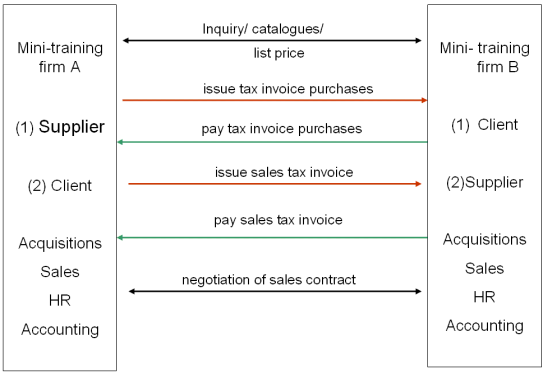

Fig. 2. Scheme of interactions between two mini-exercise firms

In the mini-exercise company are other interactions between students belonging to the various departments, as we have shown in figure 3:

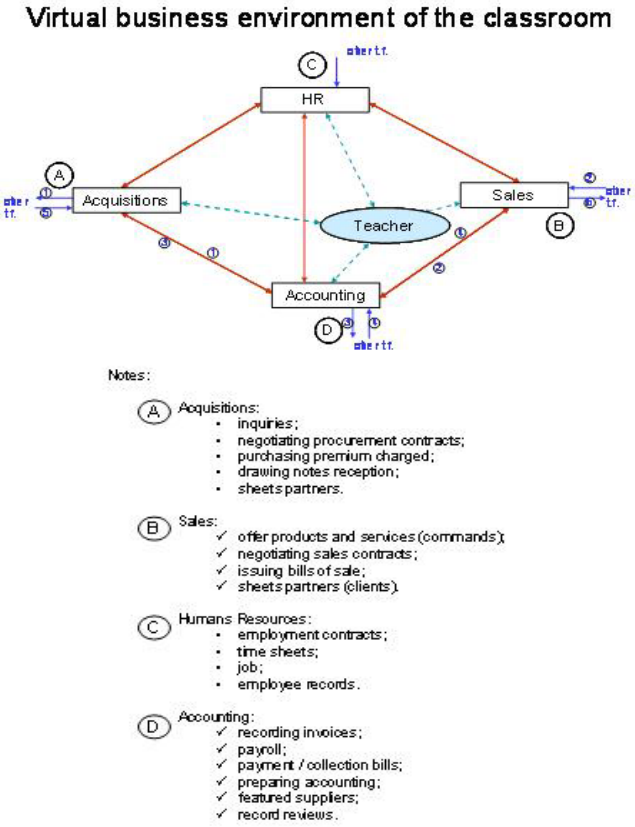

Fig. 3. Scheme of the mini-exercise company interactions

Each mini-exercise firm is actually an open system, given that the students from each department interact with students from other mini-exercise companies during their work. Within each department students carry out certain activities, shown schematically in figure 3.

The role play teaching-learning method is used for every student to be able to fulfill its responsibilities to the position they occupy in the mini-firm.

Virtual business environment simulation in class is supported by the software application. With this application, we can perform certain activities that simulate the external environment, respectively the internal environment of a company. For example: business registration, registration of business partners, publishing job advertisements, track invoices, payroll, accounting and economic operations carried out, etc.

Place software application within the virtual business environment of class is illustrated by us in figure 4:

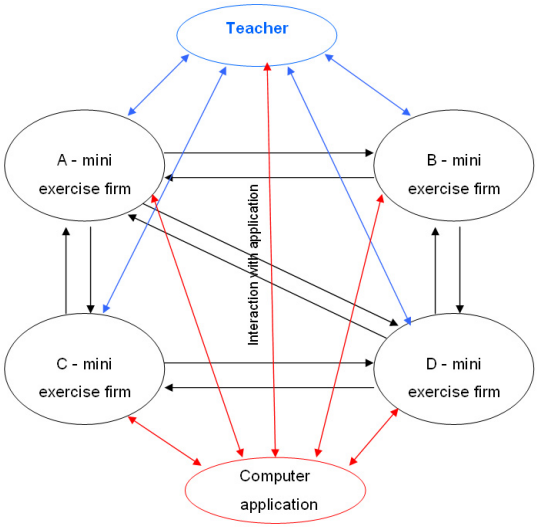

Fig. 4. The place of IT application in the virtual business environment of the classroom

The software application is used both by the teacher and by the students from each mini-company. Students input the necessary data and do limited data processing (the overview is given by us in figure 5):

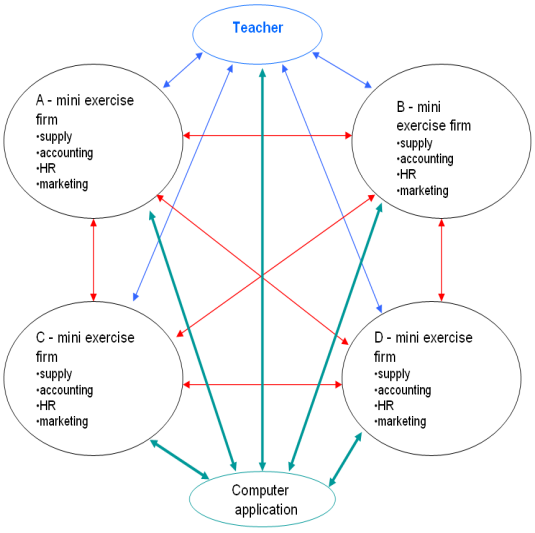

Fig. 5. The place of IT application under the mini- exercise company

The results are used further in the activity of Mini-exercise Company in the frame of virtual business environment of the classroom.

The software application allows students to improve their digital skills using computer for carrying out business within the virtual business environment of the classroom or in the mini-firm practice. Each of the students, regardless of position they occupy in the exercise company, will interact at a time with the software application and the teacher, as we show in figure 6:

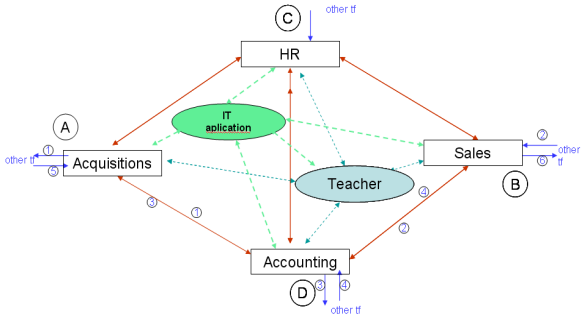

Fig. 6. The place of the computer application inside the mini-exercise firm

Made in C Sharp and having built a database, the software application has many versions- compatible with operating systems Windows XP, Windows Vista, Windows 7. It was initially available on C.D. Currently, the software application is available online and can be accessed at following address bis.econ.ubbcluj.ro:8080/Activitati/frmLogin.aspx

Software application, through the way it was designed, is combining pedagogical and information requirements. Software obtained addresses of students and teachers who have basic knowledge of computer and software in general. From the point of view of the user, the application has the explanations and messages displayed to guide the user in its successful operation. Content is modern and useful, and friendly interface takes into account the standard elements known and appreciated by users, such as: buttons for uploading and downloading files, using the mouse, listing documents, etc. IT application components have been adapted both for students and for teachers.

The software application is divided into a main menu and submenus, which are added some helpful menu-bars. Attached database contains the information needed to simulate different business situations that the teacher may require the students to solve certain problems.

In conclusion, the software application is educational software that meets the standards of quality and performance requirements for software programs, being equally an interactive learning software, a software simulation and practice software for students.

Using the computer application in business class, we covered the following steps:

- Organizing the work groups (mini-training firms) and establishing the role of each student in the group;
- Distribution of documents and materials necessary to conduct the business activities by the teacher;
- Explanation of the workload;
- Launch the computer application;
- Manage workload;
- Data entry and processing computer;
- Analysis of results;
- Provide students' grades based on evaluation criteria (announced in advance).

3. Methodology and results of the conducted research

To assess the impact of teaching-learning model and a software application on students, we developed an opinion survey, available on-line, on the website www.isondaje.ro/sondaj/312755597.

The questionnaire includes several types of questions, namely: identification questions, questions of control, dichotomous questions, questions with multiple choice and open response questions to learn the opinion of students about the teaching-learning model and software application used within it. The results of the research were statistically processed and we present it below.

In conducting our research, we took into account the recommendations and conclusions presented in the foreign literature, on the occasion of other research in the field of computer-assisted learning (Lipponen, 2001).

3.1. Case Study

To see the impact of teaching-learning model of the level I exercise firm and to test the software application created to simulate virtual business environment of classroom, we conducted an exploratory research from 18th of June to 1st of July 2014.

In this research, we conducted a case study by direct observation of tenth grade students. It consists of 18 students from Technological High School "Alexandru Borza" Cluj-Napoca (technician specializing in procurement and contracting), during the professional practice at the end of the second semester of school year 2013-2014. Practice was conducted using the model of level I exercise firm and software application has been used to improve student involvement in activities carried out within practice classes.

The option for this method of research was motivated by the following aspects:

- We analyze a topical issue, namely the growing influence the computer applications have on students, coupled with the growing concern at the institutional level to integrate certain applications in teaching at all levels of education (primary, secondary, secondary, university).
- There is no formal theoretical basis, strongly grounded, which is linked to the integration of computer applications in simulation activities business; otherwise in Romanian literature are only a few papers about the subject, the most of it descriptive and less applied (Brut, 2006), (Cucoș, 2006), (Adăscăliței, 2007).
- We have not proposed to control the environment in which the mini-firm operates.

Data sources used for the case study were:

- Documents completed by students during their work;
- Semi-structured interviews;
- Direct observation of the students (by collecting impressions, notes, think-aloud);
- Data stored by the software application;
- Questionnaires filled by the participating pupils.

Journal of the first day research included the following activities:

- The division of students into four mini-training firms, by using the method of colored cards;
- Conducting interviews for positions in the company's office (purchasing, sales, accounting, human resources);
- Students chose the name and purpose of each of the four companies;
- Students have prepared offers for products sold, which were displayed on the board and they discussed them, using the gallery tour method;
- They have been negotiated and completed the sale contracts agreed between mini-training firms.

Journal of the next day's research included other activities:

- Students were divided into six mini-training firms, two of which sold components for mobile phones, and four assembled and sold mobile phones (finished products).
- To make their offerings, students have searched the internet price components using the website www.alibaba.com;
- There have been negotiated and completed the sale contracts agreed between firms;
- Sealed bids in a sealed envelope were sent to the representative of a known mobile company, whose role was played by the teacher;
- It has created some learning situations to negotiate contracts for the sale of mini-companies.

The lack of motivation of students was reduced by providing rewards for those of them who performed the best their workload and were more involved in the firm activities. Assessment of student work took into account the following criteria: accuracy of documents completed in activities, answers to the teacher and the involvement in work tasks received.

On the last day of research, the students have got opinion questionnaires mentioned above and they have completed it.

The study population consisted of 8 boys (44.44% of all students' class) and 10 girls (55.56% of total). The average age of respondents was 15,7 years.

The model we proposed was accepted by students because of activities in the frame of mini-training firms. The students also liked the most next activities (% of total) (see fig. 7):

- Negotiate contracts (40,5%);
- Issuing and paying bills (21,6%);
- Establishing mini-exercise company (18,9%);
- Organize the class into mini-training firms (13,5%);
- Promotion of mini-exercise company (5,5%).

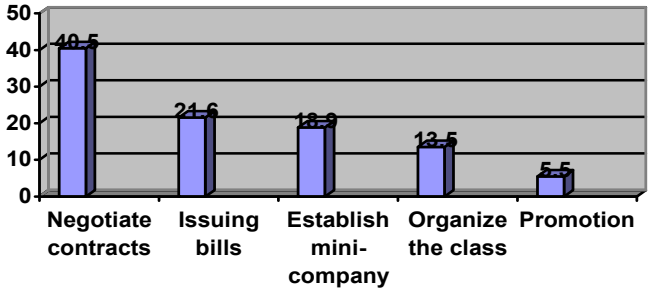

Fig. 7. Activities in the frame of the mini-exercise company

One of the positive effects of our model reflected the desire of students to learn. All students interviewed felt that the activities helped them to improve certain aspects of learning. In order of importance granted, they were (% of total):

- Communication with colleagues (29,3%);
- Level of knowledge gained in modules / specialized subjects (26,8%);
- The practical application of knowledge gained in modules / specialized subjects (22%);
- Communicate with the teacher (12,2%);
- Using the computer (9,7%) (see Fig. 8).

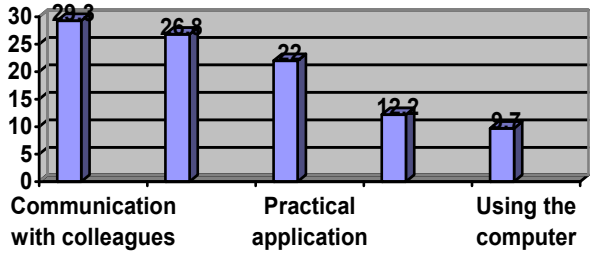

Fig. 8. The improving learning issues

Participating in mini-exercise company helped the students in the following areas (% of total):

- To better understand the business environment (34,1%);
- To exchange views and experiences with colleagues (27,3%);
- Group work (25%);
- Individual study (13,6%) (see fig. 9).

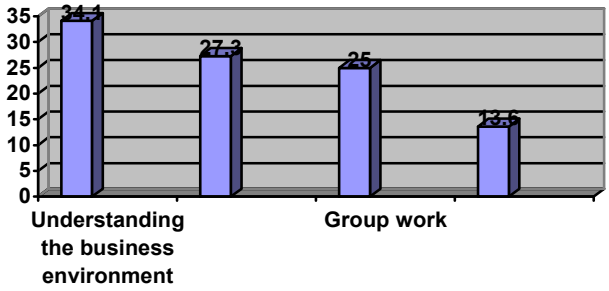

Fig.9. Impact of mini- exercise company activities on students

The vast majority of students have used software application in the mini-firm practice, i.e. 72,2% of all responses.

When were asked what they liked the software application, students mentioned the following elements (see fig. 10):

- Ease of use (30% of total);
- Its structure (22,5%);
- Application appearance (20%);
- Forms are useful for business activity (12,5%);
- Facilitate the exchange of ideas and experience (7,5%);
- Other (7,5%).

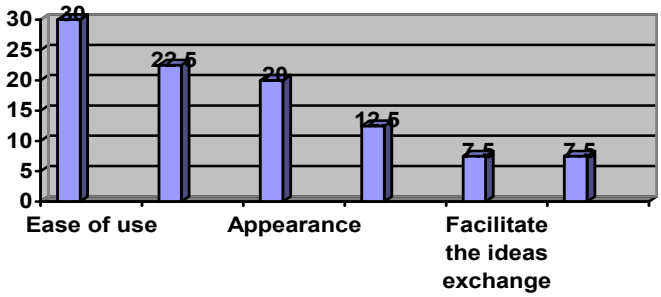

Fig. 10. Characteristics of IT application

The students' participation in mini- exercise company activities has developed certain powers, as follows (see fig. 11):

- Completion of required documents for mining-company exercise (41,7%);
- Organization of working time (22,2%);
- Using the computer (22,2%);
- Working group (13,9%).

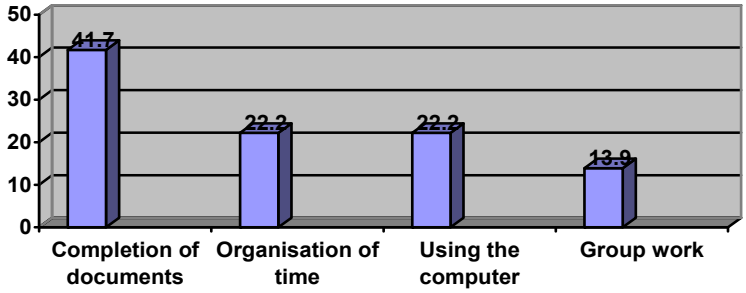

Fig. 11. Skills developed with the model of mini-exercise company

In terms of their careers, students mentioned the following positive effects it has had participation in mini-exercise company over it:

- Practical application of useful concepts (26,7% of total);
- Better communication with others (22,2%);
- Greater trust in themselves (22,2%);
- Opening new opportunities for career choice (15,6%);
- Searching for a job (13,3%).

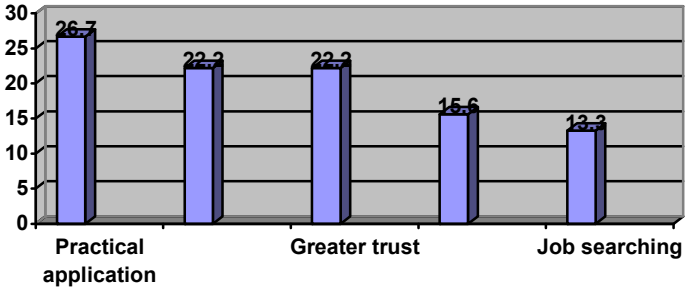

Fig. 12. The positive effects of model mini-company exercise the students' career

On the other hand, participation in mini- exercise company has changed (for the better) students' opinions about the following (see fig. 13):

- Business (35% of total);
- Learning to work in groups (22,5%);
- Motivation to learn (20%);
- Willingness to engage in various projects (15%);
- Motivation for entrepreneurship (7,5%).

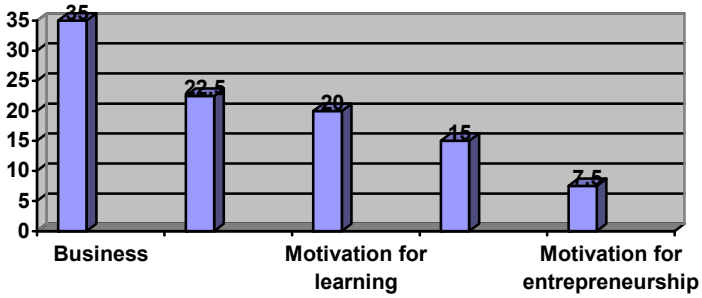

Fig. 13. Aspects changed by the participation in mini-exercise company

Compared to the previous school year (2012-2013), the tenth grade level, the situation is as follows:

Table 2.

Activities in the mini-exercise firm which the students liked the best:

Activity carried out	School year	
	2012-2013	2013-2014
Class room organisation	21,3%	13,5%
Setting up mini-exercise firm	17%	18,9%
Recruiting employees	23,4%	---
Promoting mini-exercise firm	14,9%	5,5%
Negotiation of contracts	17%	40,5%
Issuing and paying bills	6,4%	21,6%

Table 3.

Aspects of learning improved by participating in mini-exercise company:

Aspects of learning	School year	
	2012-2013	2013-2014
The level of knowledge acquired	27,5%	26,8%
Communication with colleagues	27,5%	29,3%
Communication with teacher	17,6%	12,2%
Using the computer	3,9%	9,7%
Practical application of knowledge	23,5%	22%

Table 4.

Usefulness of participation in mini-exercise company activities for students:

Aspect	School year	
	2012-2013	2013-2014
Individual study	7,1%	13,6%
Exchange of opinions with colleagues	19%	27,3%
Work in groups	38,1%	25%
Understanding the business environment	35,8%	34,1%

Table 5.

Skills developed through participation in mini-exercise company:

Competence	School year	
	2012-2013	2013-2014
Organization of working time	28,6%	22,2%
Using the computer	2%	22,2%
Completing documents	34,7%	41,7%
Work in groups	34,7%	13,9%

Table 6.

Effects on students' future career:

The obtained effect	School year	
	2012-2013	2013-2014
Searching for a job	23%	13,3%
Practical application of concepts	27,8%	26,7%
Communication with others	23%	22,2%
Opening of new opportunities	14,8%	15,6%
Self-confidence	11,4%	22,2%

Table 7.

Influence model to change certain aspects:

Aspect	School year	
	2012-2013	2013-2014
The opinion about business	16,7%	35%
Motivation for learning	22,9%	20%
Motivation for entrepreneurship	8,3%	7,5%
Willingness to be involved in other projects	25%	15%
Learning to work in a group	27,1%	22,5%

From the data presented, it appears that use of the model of teaching and learning through level I exercise firm and IT application had beneficial effects on classroom observation subject, at least in the following aspects:

- Understanding the business environment;
- Searching for a job;
- Opening up new career opportunities;
- Self-confidence;
- Feedback about business;
- Motivation for entrepreneurship;
- Motivation for learning.

3.2. Comparative approach to the situation

In the following we make a comparison of the impact of the use of teaching and learning model level I exercise firm in the entire population studied over two school years (2012-2013 and 2013-2014), at the Technological High School "Alexandru Borza" Cluj-Napoca and Theoretical High School "Ana Ipătescu" Gherla.

The studied population was composed of a number of 98 students from the two schools, tenth grade, classes in economics, specializing in services. They worked in the classroom with the teacher, using the model of teaching and learning level I exercise firm previously presented software application online within hours of entrepreneurial education (TC = Common Core) and practical training pooled (CDL = Curriculum in Local Development).

Population structure studied is shown in the following table:

Table 8.

Structure of the school population studied:

School year	**2012-2013**		**2013-2014**	
Number of Students, including:	45		53	
Girls	15	33,33%	27	50,94%
Boys	30	66,67%	26	49,06%

In the population studied, the model we proposed was accepted by students. Activities in the mini-exercise firm, the interviewed students liked most are as follows (see table 9):

Table 9.

Activities in the mini-exercise firm which they liked the best (in the population studied):

Activity carried out	**School year**	
	2012-2013	**2013-2014**
Classroom organization	12,1%	16,1%
Setting up mini-exercise firm	16,1%	25%
Recruiting employees	16,9%	2,4%
Promoting mini-exercise firm	24,2%	22,6%
Negotiation of contracts	21%	21%
Issuing and paying bills	9,7%	12,9%

As the desire for learning, matters improved by using the level I mini-exercise firm are shown in the following table:

Table 10.

Aspects of learning, improved by participating in mini-company office (in the population studied):

Aspects of learning	**School year**	
	2012-2013	**2013-2014**
The level of knowledge acquired	22%	29,3%
Communication with colleagues	27,6%	30,2%
Communication with teacher	20,5%	12,9%
Using the computer	4,7%	5,2%
Practical application of knowledge	25,2%	22,4%

Participation in mini-exercise company has been useful to students in certain respects (see Table 11):

Table 11.

Usefulness of participation in mini-exercise company activities for students (in the population studied):

Aspect	School year	
	2012-2013	2013-2014
Individual study	4%	8%
Exchange of opinions with colleagues	23,3%	28,3%
Work in groups	31,3%	25,7%
Understanding the business environment	41,4%	38%

The software application was used in class work in a much higher proportion in the second school year, when it was available on-line, compared to the first school year, when it was only available on CD (see Table 12):

Table 12.

Using of IT application by the students:

School year	2012-2013	2013-2014
Yes	46,7%	81,1%
No	53,3%	18,9%

Elements that students liked at the software application are differentiated according to the means used (CD or web page):

Table 13.

Items valued by students in computer application:

Characteristic elements	School year	
	2012-2013	2013-2014
The look of application	1,5%	13,3%
The structure of application	7,7%	15,3%
Ease of use	12,3%	30,6%
Facilitate the exchange of ideas	20%	16,3%
The usefulness of forms	21,5%	16,3%

There are certain skills that have been developed through students' participation in mini-exercise company activities; they are presented in the following table:

Table 14.

Skills developed through participation in mini-exercise company
(in the population studied)

Competence	School year	
	2012-2013	2013-2014
Organization of working time	35,8%	36,5%
Using the computer	4,6%	9,6%
Completing documents	27,5%	36,6%
Work in groups	32,1%	17,3%

The positive influence of the model on students' career was manifested. Positive effects of using this model of teaching and learning on their career are given in the table below:

Table 15.

Effects on the future career of the students (in the population studied):

The obtained effect	School year	
	2012-2013	2013-2014
Searching for a job	19,5%	17,1%
Practical application of concepts	22%	24,4%
Communication with others	22%	20,3%
Opening of new opportunities	10,2%	10,6%
Self-confidence	26,3%	27,6%

The model proposed by us had an influence on certain aspects of change that are presented in the following table:

Table 16.

Influence of the model to change certain aspects (in the population studied):

Aspect	School year	
	2012-2013	2013-2014
The opinion about business	14,3%	25,4%
Motivation for learning	14,3%	16,4%
Motivation for entrepreneurship	18%	18%
Willingness to be involved in other projects	32,4%	25,4%
Learning to work in a group	21%	14,8%

The positive effects of using the model have manifested in the entire population studied, namely:

- Over a third of the students better understand the business (41,4% of responses, respectively, 38% for the next school year);

- Feedback about business improved significantly (percentage of responses increased from 14,3% in the first school year studied, from 25,4% in the second year):
- Increased motivation for learning (from 14,3% in the first year to 16,4% in the second year).

4. Conclusions

Applying this new approach to the concept of level I exercise firm at class, two consecutive school years (2012-2013 and 2013-2014), we found that there are certain advantages (previously identified theoretically), namely (Petruşel, 2011):

- Students are involved in a much larger number of simulations;
- Increased interest and involvement in student activities as increased realism of simulations made;
- Rotation of the posts (exchange of roles) is made from time to time, established by the teacher;
- Interaction between students is improving;
- Activities of a mini-training firm are made by a small number of students;
- Develops communication skills of students;
- Increased attractiveness of the activities carried out;
- Rotation of the posts provides a balance between the number and complexity of the activities assigned to each position;
- The number of possible activities increased substantially (there are firm foundation activities, tasks, activities monthly, quarterly activities/month);
- These activities covering all stages of a business life;
- Realism and interactions need to store due to the limited number of fields to exercise firm (chosen from the specialization of that class);
- Negotiate contracts for the sale is done face to face, between negotiating teams made up of members of two mini-training firms (in the same class);
- At the time of rotation of the posts, it is necessary termination of all contracts of employment and re-employment of each student in a training firm to another function, another salary negotiation, etc.

Teaching and learning model we proposed moves from the personal characteristics of the entrepreneur ("trait approach") to approach the contractor behavior ("behavioral approach") in the direction of entrepreneurship education as entrepreneurship means both knowledge and action. By the other side, the use of the teaching and learning model through level I training firm have had beneficial effects on the studied population. These effects have manifested in entire population studied and consisted in a better understanding of the business environment, an increasing motivation for learning and entrepreneurship and opening up a new career opportunities.

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GROUNDING DEVELOPMENT IN CULTURE: HOW TO STUDY THE INFLUENCE OF CULTURE ON DEVELOPMENT

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ABSTRACT. One way to understand the unfolding of human development is to consider it a culturally situated phenomenon. The present paper aims to provide a grounded perspective on how culture influences human development, specifically one in which shared practices, artifacts, ways of relating, and institutions become more important than the abstract norms of a culture in shaping development. We will analyze thus how development might become grounded in culture through the specific tools, cultural tasks and bodily actions that children from a culture are exposed to via parental practices. In the end, we discuss the implications of such a perspective for studying the interaction between culture and development.

Key-words: *embodiment; grounded cognition; culture; parental practices.*

ZUSAMMENFASSUNG. Eine Möglichkeit, die Entfaltung der menschlichen Entwicklung zu verstehen, besteht darin, diese als kulturgebundenes Phänomen zu betrachten. Anliegen dieser Arbeit ist es, eine fundierte Perspektive in Bezug auf den Einfluss der Kultur auf die menschliche Entwicklung zu bieten, vor allem eine in der gemeinsame Praktiken, Artefakte, zwischenmenschliche Beziehungen und Institutionen vor sämtlichen abstrakten kulturellen Normen für die Gestaltung der Entwicklung an Bedeutung gewinnen. Daher wird untersucht, inwieweit sich die Entwicklung auf Kultur, anhand spezifischen Instrumenten, kulturellen Aufgaben und körperlichen Handlungen zu denen Kinder einer Kultur über erzierisches Handeln ausgesetzt sind, stützen könnte. Schließlich werden die Folgen einer solchen Perspektive für die Forschung der Wechselwirkungen auf dem Gebiet Kultur und Entwicklung diskutiert.

Schlüsselwörter: *Embodiment; Grounded Cognition; Kultur; erzieherisches Handeln.*

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Introduction

The way human development unfolds over time and the exact factors that dynamically shape this unfolding is still a mystery in the study of human functioning. One way to see this process is that human development is situated. As such, it is not a universal process but one which is influenced by the socio-cultural context in which it takes place (Dasen & Mishra, 2000; Levine, 2002). For example, children from Cameroon Nso become compliant to maternal interdictions and requests faster than children from Greece; on the other hand, children from Greece recognize themselves in the mirror faster than children from Cameroon (Keller, Yovsi, Borke, Kartner, Jensen & Papaligoura, 2004). These differences are associated with the culture specific parenting practices to which children are exposed to (Keller et al., 2004; Keller, 2013). The more distal parenting style, focused on object manipulation and face to face interaction found in Greece is associated with children recognizing themselves in the mirror earlier. The more proximal parenting style, focused on body contact and body stimulation (e.g., massage) found in Cameroon is associated with children being compliant to maternal interdictions earlier (Keller, 2013). Other cultural differences can be seen for example in processing speed. Processing speed has been found to be higher and develop faster in the case of children from Hong Kong than children living in the USA (Kail, McBride-Chang, Ferrer, Cho & Shu, 2013; McBride-Chang & Kail, 2002). The difference in processing speed might be explained by the fact that Chinese children learn to read in a language with a more complex orthography (Kail et al., 2013). Learning a visually complex orthography might lead children from China to having higher visual-spatial skills and a faster processing speed (Demetriou, Kui, Spanoudis, Christou, Kyriakides & Platsidou, 2005).

There are also cultural differences in recognizing the emotions represented by certain facial expressions. For example, four year old children from Japan are influenced by the context when they have to match a facial expression with an emotion, while children from the US are not (Kuwabara, Son & Smith, 2011). If children from Japan would see an individual with a happy facial expression surrounded by other happy people they would evaluate him as expressing more happiness then if the other people had an incongruent emotional expression. In contrast, children from the US wouldn't be influenced by the facial expression of the surrounding people when judging the emotion expressed by an individual (Masuda, Ellsworth, Mesquita, Leu, Tanida & Van de Veerdonk, 2008). These differences are consistent with the fact that Japanese parents stress the context dependency of the child's behavior and the way this behavior affects others while parents from the US frame the behavior as the effect of the child's characteristics, desires and needs (Kuwabara et al., 2011). It strikes us as obvious

from these few examples that for an accurate understanding of human development we need to understand the context that influences it, and this leads us naturally to the concept of culture.

Culture is a concept which is very difficult to pin down. As such, to this date, it has no agreed upon definition (Triandis, 2007). Despite this, most theories of culture agree that culture is constituted by a shared system of meanings which is made up of abstract values, beliefs or norms (e.g., Hofstede, 2011; Kartner & Keller, 2013; Markus & Kitayama, 1991; Triandis, 1996). This shared system of meanings is considered to provide then a framework that guides the way people in a certain group process incoming information, behave and feel (Berry & Poortinga, 2006; Soliman & Glenberg, 2014). In this paper we will call this the "classical view" on culture for the ease of reference.

Based on this view, the focus in several developmental research is on the way parental beliefs have an impact on parental behaviors and subsequently on child development. For example, the "developmental niche" framework developed by Super & Harkness (1986, 1999) states that the culturally influenced environment in which the child develops is composed of three interacting systems: a) the physical and social settings in which the child develops; b) caregiving practices that the child is exposed to; c) the psychology of caretakers, with a focus on parental ethnotheories (Harkness, Super, Bermudez, Moscardino, et al., 2010; Mone, Susa & Benga, 2014). Parental ethnotheories are belief systems that are shared by the parents from a community and that refer to the nature of children, their development, to family and parenting practices (Harkness & Super, 2005). The parental ethnotheories are considered central in this framework. As such, a caregiver's ethnotheory, a system of abstract norms, is considered to provide caregivers with a framework that guides the way they structure the child's physical and social environment and the childrearing practices they employ. A similar view can be found in the ecocultural model of development (Keller & Kartner, 2013). This model states that culture influences the child's development through its influence on parental cultural models (i.e., set of shared beliefs within a community), socialization goals and ethnotheories. Again, we see that abstract norms are considered to be the main aspect that influences child development via their influence on parental practices. As such, caregiving practices are considered only a consequence of parental beliefs.

A possible alternative to the perspective on culture previously detailed is based on the embodied cognition framework. In contemporary cognitive science, the embodied/grounded view of cognition is a very influential post-cognitivist approach. It grew steadily in the past three decades and it challenges the classical view of cognition that tends to separate perception,

cognition, and action and to consider cognition as a higher order independent component (Gomila & Calvo, 2008; Ionescu, 2011). *The embodied cognition* approach states that cognition cannot be separated from perception and action and that higher order cognition is fundamentally shaped by our bodies, namely by sensory-motor neural networks, body morphology, and body states (Barsalou, Breazeal & Smith, 2007; Ionescu & Vasc, 2014). Furthermore, *the grounded cognition* account sees our representations as grounded in "the environment, situations, the body and simulations in the brain's modal systems" (Barsalou, 2010, p.717). We will use these two terms interchangeably in this paper to express the fact that cognition is in every moment shaped by the environment we are in and the bodies we have. Let us illustrate briefly with two examples.

First, one key aspect of cognition is the representations the system has. In classical cognition, representations are amodal and stored in semantic memory (Pylyshyn, 1980). Instead of this, grounded cognition sees representations as multimodal, thus grounded in the sensorial modalities of the brain and in the actions of the body (Barsalou, 2003, 2008, 2010). More and more data show that representations are mental simulations of the state the body had when learning. This new approach solves the symbol grounding problem (i.e., the way symbols acquire their meaning in our brain, Harnad, 1990), because the sensorimotor and the conceptual systems of the brains are linked together (Barsalou, 1993, 2003, 2008): concepts (or representations) are re-enactments of the sensorimotor states that captured their properties or, in other words, simulations. For example, empirical data show that when verifying properties of concepts people are faster if the properties are preceded by a same modality property (visual-visual) then when they are preceded by a property from another modality (tactile-visual) (Pecher, Zeelenberg & Barsalou, 2003). This proves that properties are stored in modality specific brain areas that are re-activated when mentally working with concepts. Second, and maybe more compelling, researchers talk about embodied mathematics. In classical cognition, mathematics is the prototype for abstract and independent thinking (Nunez, 2008). However, recent data show that the way we solve mathematical problems is grounded in immediate perception: the way formulas are written (e.g., 2+3 X 2 vs. 2 + 3X2) influences our accuracy because we tend to overlook abstract rules and compute in the first place the elements that are closer together (Landy & Goldstone, 2007). This shows again that higher order cognition is fundamentally influenced by perceptual processing, thus grounded. In sum, from a grounded or embodied perspective, cognition is not independent but fundamentally linked to the immediate and distal surrounding (i.e., the body and the environment) at any time, no matter how abstract an answer may be.

Based on the assumptions of the grounded cognition framework, we can speculate that culture is not to be identified with a system of abstract norms and values. Instead culture can be conceptualized firstly as the shared practices, artifacts, ways of relating and institutions of a community; and secondly, culture expresses the sensory-motor calibration of individuals from the respective community. This sensory-motor calibration arises from the interaction of individuals with a specific type of body with their social and physical environment and this calibration forms the psychological fabric of culture (based on Soliman & Glenberg, 2014). There is no duality between abstract norms on one hand and behavior on the other (Soliman & Glenberg, 2014). The different way people from different cultures develop, think, act and feel are hence brought about by the fact that they interact with different environments (i.e., with certain institutions, artifacts, practices and ways of relating). From a grounded cognition perspective on culture, abstract norms or beliefs become verbal labels that reflect the relevant constellation of bodily routines of individuals (Soliman & Glenberg, 2014). As such, we can differentiate cultures not based on abstract values, norms and beliefs but based on the prevalent institutions, artifacts, practices and ways of relating (Markus & Kitayama, 2010). For example, Canada or Germany can be described as individualistic not because most of the individuals from those societies explicitly hold individualistic beliefs but because they are composed of ways of relating, situations, practices, social institutions and systems that are fundamentally individualistic. The focus on autonomy and separation in the respective societies is evident in the prevalent dating practices, family structures or living arrangements individuals are confronted with (Markus & Kitayama, 2010). As such, culture itself becomes grounded.

The main focus of this paper is to provide a different perspective on the way culture influences child development. By linking the grounded cognition approach with an embodied view of culture we may arrive to a better comprehension of the mechanisms that shape human development. In this vein, we will review some of the mechanisms that influence development, and will analyze them from a grounded perspective. This endeavour is brought about by the fact that the "classical view" on culture can lead to a duality between the abstract norms of a culture and the behavior of the individuals living in that culture (Soliman & Glenberg, 2014). This duality is problematic because there might not be an association between individual's self-reported beliefs or values and their behavior (Matsumoto, 2006). Oftentimes, parents do no behave in accordance with the norms, rules and beliefs they verbally state (Dasen, 2008). Taking this into consideration, can we still maintain that culture influences development through its impact on parental beliefs? Can we still

state that parental beliefs are central and parental practices only a consequence of these? Coupled with the difficulty of predicting parental practices from parental beliefs, the findings that sensory-motor behaviors and collective artifacts help us differentiate between cultures while abstract norms and beliefs don't, suggest that the answer to these questions is no (Kitayama & Imada, 2010).

Based on the arguments presented above, in the remainder of the article we will analyze how culture influences development through a series of concrete mechanisms. We will focus on tools, cultural tasks and bodily actions as possible ways through which culture molds children's development. In the end, we will argue that one way parental practices shape the development of children is via these specific cultural mechanisms.

Grounding development in culture

Development might become grounded in culture through a multitude of mechanisms. We have chosen to analyze the tools, cultural tasks and bodily actions individuals from a culture are provided with for two reasons: (1) there are intercultural differences in the tools, cultural tasks and bodily actions people are exposed to (Markus & Kitayama, 2010), and (2) these intercultural differences are further associated with differences in children's developmental pathways as we shall argue next (Gauvain, Munroe & Beebe, 2013; Keller & Kartner, 2013; Super & Harkness, 1986). Thus, we will consider each of these elements and argue that they are important mechanisms through which parental practices influence development.

Tools. An illustrative example of the impact of the tools individuals use on their development can be found in the research focused on the effects of using the abacus. Individuals who are expert users of the abacus perform the same arithmetic operations differently than individuals who are not expert users of the abacus (Miller and Stigler, 1991). Expert abacus users have specific knowledge about numerical structures and operations acquired through extended practice with this tool (Chen, Wu, Cheng, Huang, Sheu, Hsieh & Lee, 2006). This allows them to efficiently store and retrieve information by using a mental abacus; because of this they can perform mental computations at higher speed and accuracy. When performing a computation on a virtual abacus, all they have to do in order to attain the final result is to read the final imagined bead position and this shortens the computation time (Chen et al., 2006). As we can see, the physical instrument used for counting, the abacus, is the basis for the mental representations that are used in arithmetic computations even when the instrument is absent. As such, in the case of people from different cultures not only the result of a computation differs but also the cognitive process that leads to it.

The way people interact with certain tools also has an impact on the way they represent numbers. For example, there is a relationship between number magnitude and grasp aperture (Andres, Davare, Pesenti, Olivier & Seron, 2004). This was observed in a task in which adults were required to indicate the parity of visually presented numbers through a grip opening or closing. Participants were presented with Arabic digits ranging from 0 to 9. In half of the trials they were requested to close their grip if the number was even and open their grip if the number was odd. In the other half they were requested to close their grip if the number was odd and open their grip if the number was even. The task required making parity judgment so as to keep number magnitude processing implicit. The results of the study show that participants tended to close their grip faster when the number was small and open their grip faster when the number was big regardless of their parity (Andres et al., 2004). This is associated with a history of interacting with small objects with a grip that requires precision and interacting with large objects with a more powerful grip. This finding is consistent with the fact that numerical values and object size share common representations in the dorsal visual pathway (Walsh, 2003).

There is also evidence for the impact of using artifacts in a certain way on knowledge representation and lexical structure provided by Sinha and Lopez (2000). The sample used in their study was made up of children from Denmark and the Zapotec community from Mexico. There were two tasks: a language comprehension task and an action imitation task. In the language comprehension task children were required to put objects in, on or under an upright or inverted cup. In the action imitation task children had to imitate actions of placing an object in, on or under a cup with no instructions that contained locative items, but with statements like "Can you do what I did?" or "Can you do the same?". They found that Danish children displayed a canonical bias or the tendency to place objects *in* the cup. This was evident in both the language comprehension task and the action imitation task. In the case of Zapotec children, the canonical bias didn't appear at all. Thus, the authors suggest that these differences are driven by the way containers are used in the respective cultures and not by the semantics of the language used in the two cultures. For example, in the Zapotec culture containers are used flexibly: baskets are used in an upright orientation as well as in an inverted orientation (e.g., children's games, as covers for food items, etc.). In contrast to this, in Denmark, containers are used more in an upright orientation and individuals engage from early ages in interacting with upright oriented containers: children see adults using upright oriented glasses or cups. Moreover, they themselves play and drink from upright cups (Sinha & Lopez, 2000). As such, in the Zapotec culture containment is not canonically associated with an upright oriented container while in Denmark containment is canonically associated with an

upright oriented container. Hence we have proof that differences in artifacts and practices associated with their use might give rise to different conceptualizations of containment.

Another example of the way the tools individuals use ground development in culture comes from research on how gaining experience in weaving influences children. This type of expertise has an impact on processes involved in planning in the context of weaving as well as outside of it (Tanon, 1994). Support for this statement can be drawn from a study realized by Tanon (1994) with a sample of young men from Cote d'Ivoire. This sample included weavers and non weavers with varying levels of schooling and there were two tasks to assess planning skills. One task involved pattern matching based on either traditional or commercial weaving cloth. In the other task, the young men had to load and unload passengers and luggage in a small bus. This had to be done while considering the order in which the passengers would disembark. Both weaving and schooling were positively associated with planning skills but the highest performance on both tasks was attained by the schooled weavers (Tanon, 1994).

As we can see from the examples above, one route via which development becomes grounded in culture might be represented by the tools a culture uses. The "classical view" of culture acknowledges the influence of tools on development, but from a grounded perspective one might arrive at a new kind of explanation. Concrete tools, like the abacus, become cognitive tools, namely mental techniques that can lead to successfully solving specific tasks. Importantly, cognitive tools are not part of our innate cognitive architecture but can fundamentally change or alter it (Wilson, 2010). Wilson (2010) introduces the concept of *cognitive retooling,* which refers to the fact that the cognitive practices or tools that people from a culture frequently use lead to a recalibration of their cognitive system. The essential difference from the classical view is that the concrete tools activate certain sensory-motor networks when learned which will become part of the child's cognitive system (see the Situated Simulation Theory, Barsalou, 2003). The translators of tool use for children are parents who via parental practices make sure that their children will be able to solve problems in a way that is adapted to the immediate environment, in other words to the local culture. Thus concrete tools become part of the cognitive system and shape its functioning.

Cultural tasks. The cultural context in which individuals operate is made up of different cultural tasks. These can be construed as a structured set of goals and the procedures one can enact to attain those goals (Kitayama & Imada, 2010).

Rogoff and her colleagues (Rogoff, Mistry, Goncu, Moiser, Chavajay & Heath, 1993) have analyzed how mothers and children from different societies collaborate when solving different problems. The mothers and children (aged 12 to 24 months) were exposed to two kinds of tasks: mothers either had to help children interact with new objects (e.g., Jack-in-the-Box) or to help them get dressed. Mothers from all cultures worked together with their children in realizing these tasks but the way they worked together differed as a function of culture. Mothers from Guatemala for example did not consider themselves equal partners of the child. The interaction was a formal one in which the status difference between mother and child was emphasized: they preferred to ask an older child to interact with the younger one. They also directed the older child to aid the younger one to interact with the new object. Also, mothers from Guatemala did not treat their children as equal conversation partners, did not praise them often and relied more on nonverbal means to communicate with them. Mothers from the US considered themselves play partners of their children. They treated their children as equal conversation partners, asked them for their opinion and used "baby talk" in order to be at a similar verbal level with the child. They also praised their children more and framed the tasks as opportunities to collaboratively play with their children. The different ways in which mothers from Guatemala and USA interact with their children reflect the different power distances that characterize the two cultures (Hofstede, Hofstede & Minkov, 2010). As such Guatemala has a high Power Distance Index of 95 (a score above 70 is considered high) which signifies that it is a culture in which individuals believe that the inequalities between people are normal and to be accepted. The USA has a lower Power Distance Index of 40 (a score of 40 or below is considered low) which signifies that people expect and accept an unequal distribution of power to a lower extent. Also, in the USA there is an emphasis on autonomy, personal achievements and separation, while in Guatemala there is an emphasis on group harmony, fitting in and acting in accordance with the goals of the group (Hofstede, Hofstede & Minkov, 2010). These differences in power distance and emphasis on autonomy and the importance of the group were instantiated in the different way mothers from the two cultures helped their children during the tasks. As such these tasks can be understood as cultural tasks in which children are engaged.

These intercultural differences in the cultural tasks individuals frequently engage in are also associated with differences in their development. A set of important findings that point to the impact of engaging in cultural tasks on cognition are those obtained by Loucky (1976) who compared two Maya communities. One of the communities was engaged in commercial activities and the other was involved in subsistence agriculture. He found that in the case of

individuals from the community involved in commercial industry there was a higher internal locus of control. The extended family also placed a higher emphasis on autonomy. Individuals involved in commercial activities presumably engage in cultural tasks which attain the cultural mandate of independence: one must be competitive, assertive, capable of structuring one's activity to follow one's goals. This leads further to the development of higher autonomy and internal locus of control. Furthermore there are studies that show the effect of moving from agricultural subsistence to entrepreneurial commerce on Zincantec Mayan children weaving practices and cognitive processes (Greenfield, Maynard & Childs, 2003). As the economy in Zincatec Maya shifted from agricultural subsistence to entrepreneurial commerce, the children's weaving apprenticeship changed. It went from being structured based on a culturally conservative model (apprenticeship is highly structured by the master and opportunities for error and innovation are low) to being structured based on a culturally innovative model (low structure provided by the master, focus on trial and error learning by the novice and on innovation; Greenfield & Lave, 1982). Involvement in a more innovative type of weaving apprenticeship led to a greater ability in representing novel patterns. There was also a shift from a concrete and detailed representation of the broad stripes in the woven patterns to a more abstract one (Greenfield et al., 2003).

Also, a series of studies by Leung & Cohen (2007) suggest that through repeated and habitual engagement in cultural tasks, the cultural imperatives become "embodied". This happens through the calibration of the individual's cognitive processes. On the one hand, individuals from independent cultures habitually engage in tasks that require to separate the self from its surrounding context and to act on the basis of their own preferences and desires. As a consequence they adopt a first person view when they represent the self in time and space. On the other hand, individuals from interdependent cultures, habitually engage in tasks that require to blend in and take into consideration other peoples perspective. As a consequence they adopt a third person view when they represent the self in time and space (Leung & Cohen, 2007). Furthermore, perspectives taking abilities are shaped by these cultural patterns that determine the development of self: Chinese people seem to be better able to take into consideration another person's perspective in a communication game than North Americans (Wu & Keysar, 2007).

As seen from the previous examples, by habitually engaging in cultural specific tasks, individuals acquire and internalize the psychological tendencies necessary to successfully complete these tasks. Individuals from different cultures might develop differently because they habitually engage in different kind of cultural tasks from birth onwards (Markus & Kitayama, 2010). As a

consequence, they develop habitual, automatic and non self-reflective tendencies way before they develop explicit beliefs about the self (Markus & Kitayama, 2010). These automatic tendencies have also been shown to differentiate people from independent and interdependent contexts better than self-report measures (Kitayama, Park, Servincer, Karasawa & Uskul, 2009). So development might become grounded in culture through the fact that parents frequently engage children in culturally specific tasks. In a recent study, Soliman and Glenberg (2014) investigated if individuals from collectivistic cultures, as compared to individuals from individualistic cultures, make different estimations of the physical distance to an in-group member. The results of the study show that individuals from collectivist cultures, in comparison to individuals from individualistic cultures, estimate the distance to an in-group member as being smaller. This was evident in the fact that they estimated that it would take less (in seconds) to walk to an in-group member. Moreover, as the distance to an in-group member increases, the differences between the estimations made by individuals from collectivistic cultures and those made by individuals from individualistic cultures also increase. This suggests that individuals from collectivistic cultures and individuals from individualistic cultures use different scales to estimate the distance to an in-group members and, moreover, that in collectivistic cultures individuals have a system that is more tuned to interactions with in-group members. Hence, we can further speculate that the way in which tasks are framed in a culture gives shape through parental practices to the cognitive systems of children such that they are able to efficiently navigate the requirements of their culture.

Bodily actions. Development might be grounded in culture through the fact that children are encouraged to use certain culturally specific ways to walk, eat, stand or dance, in other words through the way they learn to make use of their bodies (Barsalou, Barbey, Simmons & Santos, 2005; Cohen & Leung, 2009; Ransom & Alicke, 2013). For instance, in societies where there is a high power distance, individuals of a lower status adopt a head-down and slumped position when interacting with individuals of higher status, a posture which signifies submissiveness. The higher status member adopts a head held up high position which signifies dominance (Schubert, 2005). Furthermore, in an individualistic culture where personal achievement and the expression of emotions are very important, standing with one's head up high might be associated with pride. Also, in a collectivistic culture where group harmony and personal effacement are prized having one's head bowed might be associated with guilt or shame (Oyserman & Lee, 2008). Other cultural differences in bodily postures might be seen in how individuals express emotions. For example, Japanese individuals tend to be more restrained in emotional situations than North

American individuals. They move their hands, arms and bodies to a lower extent then individuals from North America (Scherer, Matsumoto, Wallbott & Kudoh, 1988). Also, when expressing affiliation and liking individuals from America tend to lean forward while individuals from Japan display restrained gestures and straighten their back (Semnani-Azad & Adair, 2011). These examples are in accordance with the fact that in individualistic cultures (e.g., Canada, US) the expression of emotions is valued while in collectivistic cultures (e.g., China, Japan) a greater value is placed on the control of emotions and on personal effacement.

To illustrate how development might be grounded in culture through the bodily postures and actions that are encouraged in a culture let us take the study of Ijzerman and Cohen (2008). This experiment was realized with a sample of individuals from the US in which one group of the participants in the experiment, while completing the tasks had to stand with their head up high to see the items used in the tasks. The other group had to bow their head to see the items. During maintaining this posture, participants first completed the fill-in-the blank task which either primed honor or primed nothing. Half of the participants from the head up high group and half of the participants from the head bowed down group were primed with honor; the other half of participants from both groups were not. After the priming procedure, the participants completed a questionnaire which evaluated their level of honor endorsement. In the case of the unprimed participants, there was no difference regarding honor endorsement between those with their head held up high and those with their head held downwards. This is in accordance with the lack of centrality of honor in American culture (Ijzerman & Cohen, 2008). In the case of those primed with honor, there was a greater endorsement of honor for the participants whose head was held up high then in the case of participants whose head was held downwards. In another study realized by Rotella and Richerson (2013), constraining the participants to adopt an upright position led to feelings of pride, but constraining them to adopt a slumped, head down posture lead to feelings of guilt. From these studies it is evident that the same postures can prime different reactions as a function of the meaning system that is made salient to the individual.

As we saw above the body postures and actions encouraged in a culture prime certain affective and cognitive reactions (Cohen & Leung, 2009). For example, for those who are strong believers, a kneeling position in the context of a prayer signifies submission to a deity (Barsalou et al., 2005). To investigate how kneeling influences judgment in the case of religious participants Ransom and Alicke (2013) conducted two studies. These investigated the impact of kneeling on the judgment of various scenarios as being miraculous and on identifying various images as religious objects. The results suggest that kneeling

leads to the judging of events as being significantly more miraculous and to evaluating ambiguous photos significantly more often as depicting religious objects. There is also proof that adopting a slumped position and bowing one's head primes further the basic affective reaction of guilt (Rottela & Richerson, 2013).

There is also evidence that parents shape children's bodily actions in a culture specific way. For example parents employ certain shepherding moves (i.e., body twists, tactile and non-tactile steering) to control, shape and scaffold the child's bodily actions (Cekaite, 2010). Let's consider a situation in which the mother is controlling the child's bodily actions so as to aid him in getting to the bathroom to wash his teeth. She can steer him in a more or less controlled way thus granting him more or less autonomy (Cekaite, 2010). In a individualistic culture the mother will give the child more control of the trajectory. A mother that is controlling and firmly steers the child through the environment encourages ways of bodily acting and poses that prime submission, just like those found in collectivistic cultures.

So as we can see from the examples above, another way through which development might become grounded in culture is through the bodily actions that are encouraged in a culture. Parents might employ certain shepherding moves to shape the children's bodily actions or children might learn bodily actions through observation and imitation (Leung & Cohen, 2009). So, parents enculturate their children not by transmitting explicit values, beliefs or norms but by shaping their bodily actions so as to promote a certain type of acting and being in the world. The fact that parents encourage children to use different bodily actions has important consequences if we look at this fact from a grounded cognition perspective. If mental representations are simulations of the states that the body had when learning then individuals with different bodily characteristics and actions should form fundamentally different mental representations (see the body specificity hypothesis, Casasanto, 2009). Hence, the intercultural differences in the encouragement of different bodily actions will shape the way a child's cognitive system develops.

Conclusions

Everybody agrees that development is determined by the interaction between nature and nurture and that it is not worth it anymore to think about which one is more prevalent (Karmiloff-Smith, 2009; Spencer, Blumberg, McMurray, Robinson, Samuelson & Tomblin, 2009). Beyond this, however, little is known about which factors pertaining to the nurture side are important and how they shape human development. One key factor might be represented by the parental practices children are exposed to. These are known to be influenced

by the social context (Bornstein & Cheah, 2006; Super & Harkness, 1986). The main focus of this paper was to provide a different perspective on the way culture influences child development through the way parents raise their children. As such, we tried to pinpoint some specific mechanisms through which culture is represented and determines development. Specifically, we focused on the tools, tasks, and bodily actions that children interact with or are subjected to everyday. Thus we analyzed them from a cultural perspective, namely by showing that different communities have different tools, tasks, and postures that are transmitted to children and that shape the developmental trajectories of children in different ways.

The ideas sketched in the present paper suggest some modalities through which the embodied cognition paradigm might explain previous results from research on culture and development. Let's go back to the "developmental niche" framework formulated by Super & Harkness (1999).This framework postulates that the caregiver's parental belief system guides the way parents structure the physical and social settings that the child is emerged in. They also influence the parenting practices he is exposed to (Super & Harkness, 1986). Using the embodied cognition framework we can specify the mechanisms through which caregiving customs and the physical and social settings impact the development of children. For instance material tools give rise to an individual's cognitive tools and leads further to specific ways to solve problems. These tools are provided by parents in everyday settings, becoming a mechanism that shapes the cognitive systems of children. The experiences an individual has in a certain developmental period, and the way he interacts with his environment or actively samples information shapes the kind of input he is exposed to. This leads to changes, over time, in brain structure and functioning (Byrge, Sporns & Smith, 2014). For example, studies that investigate the effects of learning to read, write and compute on brain structure and function provide support for the fact that brain networks are shaped by the behavior of children and the cultural tools they engage with (Byrge et al., 2014). Speaking about reading and writing one could envision interesting predictions based on embodiment. For instance, recent studies show that children who use handwriting are better able to recognize letters than children who write on a keyboard (James, 2010). We might predict that using *different* tools will lead to *different types* of developing one and the same ability because of the *different* motor programs that shape representations (i.e., handwriting is based on particular motor movements for each letter while using the keyboard implies the same movement for all the letters). Moreover, the new tool (i.e., the keyboard) might also have beneficial effects due to the different locations that the letters have. This can have the effect of a better hand-eye coordination. Thus the analysis of tools might take us to a deeper comprehension of the causes of

development and to understanding specific developmental trajectories. So, we see that this new approach explains previous results and also makes new insightful predictions.

Moreover, we can think about a connection between the three mechanisms: parents use and put children in certain types of bodily actions (like sitting on the floor or sitting at a table), and then use certain tools (like the abacus or fingers for counting) in certain tasks (like learning to count), and all this chain of objects/situations/actions leads to a certain type of cognitive system ready to solve culture specific problems. To express the interconnections of these mechanisms and the effects they have on the developing system we can borrow the title of a recent paper and say that "it's all connected" (Smith, 2013, p. 618).

Adopting a grounded perspective about the way culture influences development will also take us a step closer towards a unified psychology. Traditionally, psychology has compartmentalized the study of the human mind in cultural, social and cognitive partitions, each with its own conceptual paradigm and explanations (Soliman, Gibson & Glenberg, 2013). In the cognitive tradition, individuals are considered information processors; in the social tradition they are social agents which are driven by the need to fulfill interpersonal goals; in the cultural tradition individuals are immersed in and guided by their shared set of beliefs, norms and values (Hofstede et al., 2010; Keller, 2013; Soliman et al., 2013). An integration of these segments might take the study of human development, and ultimately the understanding of the human mind, to a more comprehensive picture. Sensory-motor mechanisms might be the key link between them: they embody cognition and they embody culture.

The idea that culture plays a major role on development is not new. The theory of Vygotsky is a prominent example for this (Schaffer, 2010). What is new is thinking about this role from an embodied perspective and finding specific mechanisms that influence development. More specifically development becomes grounded through the culturally specific sensory-motor calibration of the developing child and this might take place during parent-child interactions. The calibration might be achieved through the engagement of the child with culture specific environments, tasks, tools and encouragement of certain bodily activities. And this takes us further to the idea that culture itself is embodied: rather than study the abstract values and norms of a culture it is better to investigate the embodiments of culture. Going back to parents, there are for sure parental beliefs that are generalized or abstracted from repeated practices. What we argued here is that parental practices come first and that beliefs are consequences that are not the key elements in shaping the development of children. It is rather through repeated actions that parents guide development, and these actions are grounded in the concrete aspects of a culture. We do not

intend to say that the classical view on culture is to be dismissed. It may well be that an integration of the two approaches – the classical one and the embodied one – will take us closer to a more complete comprehension of the exact route that leads from culture to development (see for similar ideas for cognition Barsalou, 2010).

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A DESCRIPTIVE STUDY OF DIDACTIC COMMUNICATION

CRISTIAN STAN[*]

ABSTRACT. The efficiency of didactic communication largely determines both the quality of the educational process as well as the preparedness of the students. Given this starting point, our study primarily aims to investigate students' opinions on the quality of didactic communication. The main investigative methods used were the semi-structured interview and the questionnaire based survey with the focus on items such as: the extent and conditions under which students appreciate didactic communication as being effective, indicators that students consider that didactic communication is effective, factors that generate a sense of satisfaction as a result of attending a course and communication blockages. The results of the investigation indicate the fact that most subjects recommend devoting more attention to defining and explaining the fundamental concepts for overcoming communicational blockages.

Keywords*: didactic communication, communicational efficiency, communicational competence, communicational climate, communicational blockage.*

ZUSAMMENFASSUNG. Die Effektivität der didaktischen Kommunikation bestimmt weitgehend die Qualität des Bildungsprozesses, sowie das Ausbildungsniveau den Studenten. Von diesem Ausgangspunkt, stellen wir uns vor, als Hauptziel, die Untersuchung der Meinungen den Studenten über die Qualität der didaktischen Kommunikation. Die wichtigsten verwendeten Methoden der Untersuchung waren halbstrukturierten Interviewmethode und die Fragebogenerhebung. Diese wurden verwendet, um folgendes zu erfahren: in welchem Maße und unter welchen Bedingungen schätzen die Studenten die didaktische Kommunikation als wirksam; welche sind die Indikatoren, die diese Meinung den Studenten einflüssen und welche sind die Faktoren, die ein Gefühl der Befriedigung oder Kommunikations Engpässe nach der Anhörung eines Kurses generieren.

Schlüsselwörter: *Didaktische Kommunikation, Kommunikationseffizienz, kommunikative Kompetenz, Kommunikations Klima, Kommunikations Engpass.*

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1. Introduction

The literature devotes ample spaces to the issues of didactic communication and the conditions that ensure its effectiveness, knowing that there is a close correlation between the quality of communication and the quality of education as a whole. The vast majority of research in the field of communication is considered to be paradigmatic, while specialty literature identifies a number of four such approaches: a structural-expressive paradigm, a formal-transactional paradigm, a relational-systemic paradigm and a phenomenological paradigm (Muchielli, 2005). Beyond natural epistemological differences between the paradigms mentioned above, we do, however, find that there is a common concern, namely that of identifying the rules that govern communication and using them in order to increase its efficiency. Thus, the diachronic analysis of various approaches to communication shows that in their early days, most of them were focused mainly on the technical aspects of communication, because in the absence of a sufficiently well developed communicational engineering, trainers would permanently be in a position to improvise by exploring or even resorting to random combinations (Peretti, 2007).

Over time, the approach of communication as a technical situation was abandoned as a result of accepting that communication involves individuals, operators subjected to massive influences from psychological factors (Abric, 2002). Thus, a new direction arises that brings the human and social dimension of communication to the foreground. In this context, a number of non-technical elements are observed that are able to ensure the efficiency of communication, elements such as empathy, since interpersonal communication is not only the exchange of information but also of feelings and assumptions regarding the emotional state of another (Cabin, Dortier, 2010).

This fact is observed by numerous other studies indicating that the evocation of emotions in the form of a discourse is a constant of interpersonal communication, most conversations including affective components (Rime, 2007). Not only the empathic dimension justifies emphasizing the humanistic character of communication but also the intentional dimension because when sending a message to the receiver, the issuer operates in four distinct levels - the level of reality, the relationship plane, the level of self-revelation and the level of appeal, seeking to answer, through signs that make up the message, the following questions: what am I informing the receiver about?, how do I treat the receiver and how do I see my relationship with him?, what do I tell the receiver about me? And last but not least, what am I urging the receiver towards? (Fârte, 2004).

Emphasizing the human and social dimension of communication is not only necessary but also consistent with the current guidelines of pedagogy since knowledge is a dynamic activity, learning represents a natural consequence of performance and teaching is a process of negotiated construction of meaning (Arsith, 2012). Moreover, the humanistic approach to didactic communication is also important from the perspective of highlighting the opportunities to optimize it, because sometimes, due to the fact that our language skills were developed effortlessly, we might be tempted to believe that our level of competence in the use of language can not be changed, which is essentially wrong because by repeating the same processes that we used at first to inherit them, language skills can be modified and improved (Turk, 2013).

The awareness of this fact and its implementation in principle, underlying the initial training activity of future teachers is a priority, knowing that now, due to the multiplication of information resources and the low interest of students regarding school, class activity has lost much of its consistency. In this context, effective didactic communication can be a viable solution for many problems of the Romanian educational system.

2. Major research coordinates

Our research falls along the lines of humanistic approaches to communication. Unlike other research that started from theory towards practice, from general towards particular, our investigation is inductive and is intended to capture the opinion of the beneficiaries of didactic communication regarding its efficiency and the requirements for its efectiveness.

Taking the above statements as a starting point, the main goal of our research was to identify the students' perception on the quality of the communicational act. The reason we considered this approach useful and necessary was that obtaining a perspective from the inside, observing viewpoints from those directly involved regarding the efficiency of teaching, we would be able to not only bring a necessary addition of knowledge in the field but also to provide practical solutions for an efficient didactic communication.

In a first stage, we used a semi-structured interview method for a group of 25 students from the Primary and Preschool Pedagogy specialization, with the purpose to identify and clarify the parts that will be the basis for achieving the actual investigation. Following this approach, a questionnaire was designed composed of six multiple-choice items, items covering the following aspects: the extent and conditions under which students consider didactic communication as being efficient, indicators regarding the students' opinions towards the overall effectiveness of didactic communication, the factors that generate a feeling of satisfaction as a result of attending a course as well as communication blockages.

Thus, the primary method of investigation used was the questionnaire based survey with a sample of subjects consisting of 92 students, future teachers for primary and preschool level education. The results obtained were statistically processed and the percentages obtained for each item and each choice are summarized in tabular form.

3. Presentation and interpretation of results

The first of the questionnaire items sought to highlight the students' opinions regarding the efficiency of didactic communication as a whole.

Table 1.

Opinions concerning the efficiency of didactic communication

Answers	N	%
Very efficient	42	45.7%
Efficient	49	53.3%
Slightly efficient	1	1.1%
Inefficient	0	0%
Total	92	100%

As we can see in the analysis of data presented in the table above, 45.7% of students consider their teachers' didactic communication as very efficient, while 53.3% think that it is efficient. Only one person considers didactic communication to be slightly efficient (1.1%) while no student opted for the "inefficient" answer. The large number of subjects that consider didactic communication as very efficient or efficient is an important indicator of the quality of the didactic activity carried out at the "Pedagogy of primary and preschool education" specialization.

The next item of the questionnaire aimed to identify factors in relation to which students form their opinion on the attractiveness of a course. The data is summarized in Table 2.

Table 2.

Determinant factors of the attractiveness of courses

Answers	N	%
The importance of the subject	30	32.6%
The interactive character of communication	27	29.3%
The applicative nature of the course	22	23.9%
The teacher's interpersonal style	13	14.1%
Total	92	100%

The data presented in the above table shows that most of the subjects, 32.6%, consider that the central element based on which they consider a course to be attractive is its importance relative to other subjects but also in terms of its contribution to the formation of professional competences. We interpret that most students overlap the attractiveness of a course with its importance as being proof of pragmatism and utilitarianism, constant features of contemporary society. In turn, the interactive nature of communication is considered by 29.3% of subjects as a determining factor in the attractiveness of subjects while 23.9% of them stated that attractiveness is generated by the applicative nature of the course. A less important element in this respect appears to be the teacher's interpersonal style, considered important for the attractiveness of a subject by only 14.1% of participants. We thus see that for most of the students, 56.5%, the attractiveness of a course overlaps with its importance and its applicative nature while the interactive character of communication and the teacher's interpersonal style are important indicators only for 43.5% of subjects, which demonstrates, in our opinion, a high level of maturity and ambition of students regarding the educational offer.

Another element that our research pursued was capturing the conditions under which students consider didactic communication to be effective. The results are presented in Table 3.

Table 3.

Conditions under which students consider didactic communication as being efficient

Answers	**N**	**%**
When they learn unique pieces of information	23	25%
When they clarify certain previous concepts	40	43.5%
When references to actual life situations are made	29	31.5%
When concepts from different courses intertwine	0	0%
Total	92	100%

The data presented in the table above reveals that most of the students involved in the study, 43.5%, consider didactic communication to be effective in the situation where they can clarify certain concepts previously acquired. In other words, somewhat surprisingly, for 40 students out of 92, the efficiency of didactic communication is correlated with its ability to contribute to the clarification of certain concepts and notions already taught in the previous classes. Another indicator of the efficiency of didactic communication, considered important by 31.5% of the subjects surveyed, is represented by the references made in the classroom concerning real life situations, which

stresses the need for a concrete contextualization of the information transmitted and a permanent anchoring of the didactic discourse in everyday life. Equally surprising is the situation determined by the fact that the acquisition of new, unique knowledge, is considered as an indicator of the efficiency of didactic communication by only 25% of students. We do not interpret this situation as necessarily being a reluctance of students but rather as expressing a reaction to the phenomenon of informational saturation that characterizes contemporary superior education. We also observe the fact that intertwining the notions and concepts taught in other courses is not considered an indicator of the effectiveness of didactic communication by any of the subjects investigated.

Another element targeted by our investigation is represented by the reaction of students in situations where didactic communication and the teaching activity in general are considered to be less efficient. The results obtained on this issue are presented in Table 4.

Table 4.

Methods of compensation for inefficient didactic communication

Answers	**N**	**%**
Enlightening discussions with colleagues	23	25%
In-depth research of the course support and bibliography	40	43.5%
Requesting explanations from the teacher	29	31.5%
Requesting explanations from other teachers	0	0%
Total	92	100%

The analysis of the data presented in the table above indicates the fact that most of the subjects investigated, 43.5%, said that for them the main way of compensating for the inefficiency of didactic communication is an in-depth research of the course support and bibliography. In other words, they believe that cognitive obstacles and shortcomings existing in the teacher-student didactic communication can be best overcome through personal effort for the purposes of browsing through the course support and additional lectures in the field. Another important segment of the subjects, 31.5%, stated that in case of poor didactic communication, the main strategy put into play is represented by requesting explanations and further information from the teacher. We consider this to be a positive element as it indicates the existence of open relationships between students and teachers, where students bravely approach teachers if they have uncertainties and where the teachers exhibit solicitude and a cooperative attitude in relation to the students' explanatory requests.

Another strategy put into play by students in the case of misunderstanding theories, concepts or phenomena is represented by enlightening discussions with colleagues. Thus, 25% of students state that they clarify their insufficient knowledge through dialogue with colleagues on that topic. The variant of requesting clarification or additional information from other teachers was not agreed upon by any of the subjects.

Another item of the questionnaire aimed to surprise elements that, in the opinion of the students interviewed, teachers should pay more attention to in order to increase the efficiency of didactic communication. The results regarding the possibilities of optimizing the efficiency of didactic communication are summarized in Table 5.

Table 5.

Ways to optimize the efficiency of didactic communication

Answer	**N**	**%**
Clear definition of the concepts	39	42.4%
Examples offered	40	43.5%
Highlighting the correlations between concepts	7	7.6%
Correlations to various existing theories	6	6.5%
Total	92	100%

As we can see in the table above, the students' responses for this item provide a clear view of how didactic communication can gain in both consistency and efficiency. Thus, we can observe that 43.5% of respondents consider that the main direction on which teachers should focus their concerns in order to increase the efficiency of didactic communication is represented by granting greater attention to doubling theoretical exposures with examples and illustrations of practical relevance. No less important is considered to be another aspect, namely the clarity and accuracy with which new concepts are presented and explained, which was agreed upon by 42.4% of the subjects investigated. Highlighting the correlations between various concepts and notions is considered to be a way to streamline didactic communication by 7.6% of participants while 6.5% of students opt for making connections and correlations to exiting theories in the field.

Another aspect that our research pursued is represented by the issue of barriers and communication blockages. Interpersonal communication in general and didactic communication in particular, constitute an open system, influenced by many factors, most of them being able to constitute elements susceptible to lead to the decrease of communicational efficiency (Pânişoară, 2006).

We thus believe any factor able to determine the quality of communication and reduction of the clarity of receiving transmitted messages to be a communicational blockage. The classifications of communicational blockages and barriers are varied, being made by a variety of criteria. Our research aimed at capturing the students' views on communication bottlenecks caused by cognitive, affective or organizational factors. The results obtained on this issue are presented in Table 6.

Table 6.

Blockages in didactic communication

Answer	**N**	**%**
Cognitive blockages	51	55.4%
Affective blockages	8	8.7%
Organizational blockages	33	35.9%
Total	92	100%

The data in the table above indicates the fact that, according to 55.4% of the students interviewed, communicational blockages recorded in teaching are cognitive. We refer in this context to the increased complexity of educational messages in relation to the cognitive resources of its recipients, complexity that generates difficulties in decoding information. Another category of disturbing factors in didactic communication is represented by organizational blockages, as stated by 35.9% of the subjects. Organizational blockages mainly refer to the conditions under which communication occurs, the fact that the teacher monopolizes the discussion, focuses mainly on teaching, allocates very little time for discussion and questions from students, does not encourage or facilitate communicational cooperation during the course. Affective communicational blockages seem to be uncommon, generated by shyness or the hostile attitude of teachers or colleagues, response option chosen only by 8.7% of the participating students.

4. Conclusions

The results of the investigation conducted indicates the fact that the overwhelming majority of the students investigated, 99% of them, consider didactic communication to be very effective or effective. In terms of the attractiveness indicators of a course, the pragmatic orientation prevails, including items such as the importance of the matter, the applicative nature of the course as well as communicational interaction. Regarding the factors in relation to which didactic

communication is considered to be efficient, elements such as clarification of earlier concepts and references to concrete situations are highlighted, while learning new information or connections to concepts taught in other courses are assessed as less important or not important at all. The main ways of compensating for a less effective didactic communication are the individual in-depth research of the course support and bibliography as well as requesting further explanations from the teacher, while enlightening discussions with colleagues is an option only a quarter of the students participating in the research opted for. Regarding ways to optimize the efficiency of didactic communication, most of the subjects recommend granting more attention to defining and explaining the fundamental concepts but also a more frequent appeal to examples, while other elements such as highlighting correlations between the notions are less requested. Regarding communicational blockages, the majority of the students interviewed stated that they are cognitive and organizational, which requires both granting greater attention to information accessibility as well as organizing didactic activities in a manner that ensures enough time for discussions, debates and questions. The results of our research show that it is necessary to give greater attention didactic communication problems both in the classroom and in the initial teachers training program.

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THE CATECHIST / RELIGION TEACHER-TARGETED ABILITIES AND COMPETENCES

VASILE TIMIŞ*

ABSTRACT. Knowing ones religious values represent a form of cultural security, a sign of civic and culturally attitudes. Religious education invites to reflection, to self-knowledge, to a conversion to the world of values, having the purpose of bringing communion between people and solidarity between the members of a community. Recent years have proven that the catechetical activity of the Church and the presence of religion in schools are necessary not only for religious denominations, but also for the Romanian society as a whole, which, by these rightful measures gained access to its own spirituality and to an essential tool in teaching the young.

In Romanian space, Christian belief has acted as a unifying and perpetuating factor for the nation. Being religiously initiated means to be educated, means to have the capacity to increase and to support the education. Religious realities of contemporary Romania show that the role of the religion teacher is a very important one. Given the oversizing of the urban parish, the teacher manages constantly the religious education of the young. This quasi-sacerdotal function of the religion teacher imposes certain requirements in the training of the teacher himself, in his continuous self-evaluations and self-improvement.

***Key-words**: Educational System; Christian pedagogy, Religious Education, Catechesis, Continuous Training and Professional Development.*

ZUSAMMENFASSUNG. Die Kenntnis von den religiösen Werte einer Person ist eine Form der kulturellen Sicherheit, ein Zeichen der bürgerlichen und kulturellen Haltungen. Religiöse Erziehung lädt zum Nachdenken, zur Selbsterkenntnis, zu einer Umwandlung in der Welt der Werte, mit dem Zweck, Kommunion zwischen den Menschen und der Solidarität, zwischen den Mitgliedern einer Gemeinschaft zu bringen. Die letzten Jahren haben gezeigt, dass die katechetische Wirken der Kirche und die Präsenz der Religion in den Schulen sind notwendig, nicht nur für die Religionsgemeinschaften, aber auch für die rumänische Gesellschaft als Ganzes, die von diesen Maßnahmen rechtmäßigen Zugang zum eigenen Spiritualität und ein wichtiges Instrument in der Lehre der junge gewinnt. Im rumänischen Raum, hat der christliche Glaube als einigende und erhalt Faktor für die Nation gehandelt.

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Religiös initiiert sein, bedeutet, erzogen sein und die Fähigkeit die Bildung zu erhöhen und zu unterstützen. Religiöse Realitäten des heutigen Rumänien zeigen, dass die Rolle der Religionslehrer ist ein sehr wichtiges. Angesichts der Überdimensionierung der städtischen Pfarrei gelingt es der Lehrer immer wieder die religiöse Erziehung der Jugend zu erledigen. Diese quasi-priesterliche Funktion des Religionslehrer stellt bestimmte Anforderungen in der Ausbildung der Lehrer selbst, in seinem kontinuierlichen Selbstbewertungen und sich selbst zu verbessern.

***Schlüsselwörter**: Bildungssystem; Christliche Pädagogik, Religionsunterricht, die Katechese, kontinuierliche Aus- und Weiterbildung*.

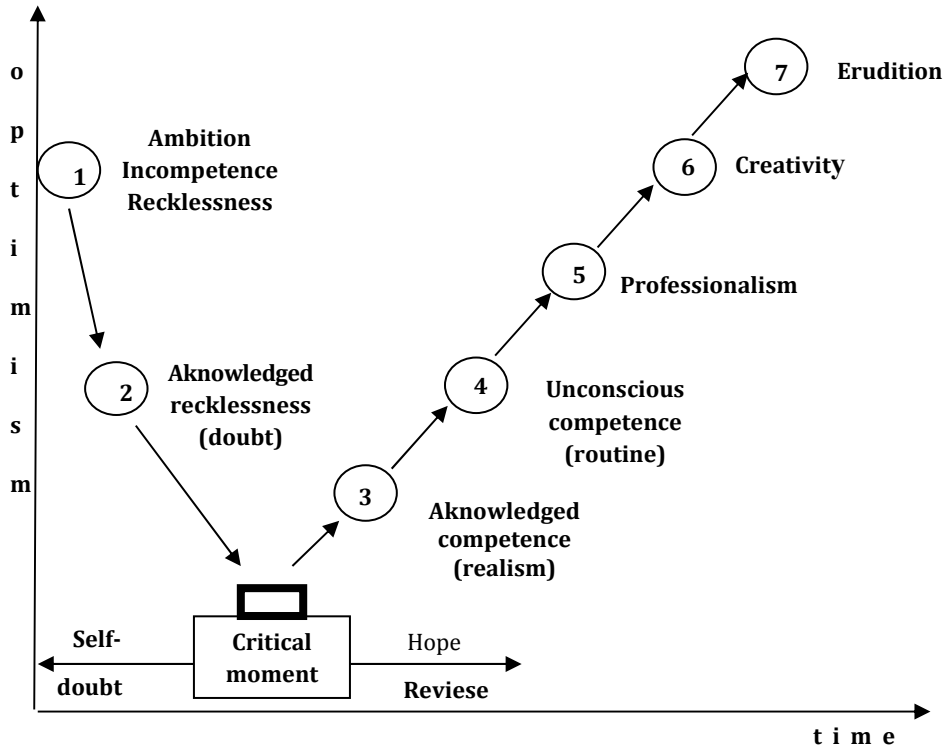
The religion teacher/the catechist is the mentor and the leader to any catechetical and educational activities of religious significance, he gives meaning and finality to the proposed educational projects, objectives and sequences. The spiritual and educational dimensions of the mission of a religion teacher result from the responsibility and from the deciding role he plays in forming the spiritual, social and moral skills and attitudes of his students. Few are the professions that require from their possessor as much competence and dedication as the one of a teacher, teaching being science and art alike. With a great part of our life –the childhood, adolescence and a part of young adulthood– we entrust the teacher. This is the reason why we remember fondly the teacher who put a pen in our hand for the first time and all the other teachers that marked our lives.

Knowledge, contents and methodologies included in curriculum and in textbooks constitute latent valences in terms of moral and religious personality formation of students; they receive an educative power only by being processed by a teacher (Nicola, 1980, p: 353). Means and methods of education, even the efficient ones, receive maximum educational valences only if they are well managed by the responsible for that school subject. Nowadays, more frequently the teaching activities tend towards modern and technical directions, but even in these conditions their foundations are built on the human relationship conducted by the student-teacher binomial.

The teaching profession, as any other occupation, it the result of an accumulated specialized culture, of endowment with some contents, technics and processes. In other words, the personality of a teacher can be analyzed through the premises for choosing such a profession and for the preparation itself for this profession (Nicola, 1980, p: 354). That is to say, the personality of a religion teacher is shaped according to abilities (vocation) and according to specialty culture (theological formation). Among the components of the professional training of the religion teacher can be listed: general knowledge, specialty culture and psycho-pedagogical training.

For defining the personality of a religion schoolmaster, a constant interest in his theoretical and practical training is necessary so that he may give good answers to his students, colleagues and community. As in any other field of activity, in order to learn the teacher profession more evolution phases must be passed through.

In a graphical representation, the beginner teacher's evolution could be presented in the following drawing:



According to the graph above, we consider that learning the skills of teaching goes through several phases. We have presented several of them; of course they can be more or can be less, it varies from case to case. *In the first stage*, any beginner teacher is powered by optimism, but not always he has the abilities shaped. The deficiencies are hardly noticed by the concerned. *The second stage* is marked by the awareness of some shortcomings and also by some doubts. Over time, with some nonfulfillment, also the optimism drops. In the case of some teachers a critic moment appears; if it is accompanied by hope, it can turn into realism, pragmatism and revising, but if this critical moment is accompanied by doubt, it can turn into relinquishment.

The third stage is marked by realism and professional competences gaining. *Fourth stage* represents a phase of competences and achievements. A risk may appear in this phase, that of developing a capping or a routine*. The fifth* stage appears when the teacher perfects certain skills, so we may talk about professionalism. *At the sixth stage* it passes from professionalism and competence to creativity and mastery. The climax of a teaching career is, we may say, fulfilled in *a seventh stage,* when we can talk about erudition. As stated before, this phases being relative, every teacher can find himself or not in this approach. For a better outlining of the professional skills is imperative to collaborate with the colleagues of department, with colleagues from the same educational circle, with counselors, with confessors and school psychologists.

A proper training of the religion teachers is necessary considering that mastery of the psycho-pedagogic language, as a detailed knowledge of the teaching-learning process, represents an obligation for all those forming young consciences. In schools cannot be admitted non-teaching gestures and behavior, forms of brutalization and coercion of children, experiments and mistakes; … it is not adequate to transfer from Church to school some discursive forms (preaches) that do not resonate with the new training perimeter; the methodological, catechetical and rhetoric ensemble developed in a class of students differs significantly from the one applied by the priest in Church, stated professor Constantin Cucoş (Cucoş, 1999, p: 299), one of the most discerning connoisseurs of the domain. It requires a rethinking of procedures and methods of intervention and conversation, a new language used by the priest or by the religion teacher throughout a lesson. We are warned that "slipping into the impressionist, sentimentalist exposition and resorting to verbal tiring clichés can affect students' interest for a school subject that has profound and significant formative connotation" (Cucoş, 1999). There are a number of problems with practical incidence that have to be delimitated and settled in the near future, so that the future of religion is optimized.

Tenure and continuous training programs represent essential elements in educating religion teachers for primary school, secondary school and high school. The main objective for these programs is to develop didactic and content related competences necessary in realizing the religious educational process. By its diversity, the actual curriculum offers the possibility to understand the subject's contents and didactic strategies.

According to the affirmations of some authors, the concept and the principles (Tenure and Improvement Curriculum, 2002) they were built on are:

- *Continuity,* reflected in the established objectives and contents, ensuring both the integration of the initial part from the university studies and the training for teaching career*;*
- *Coherence,* given by organizing and articulating in a modular-thematic way the objectives, the content areas and the bibliographic references, orienting them on eliminating the conceptual-methodological repetitions, interferences and contradictions of the different approaches*;*
- *Development and innovation*, satisfied by introducing new subjects for initiating the candidates in the novelties of the theological studies, in raising the issue of new tendencies among teachers.

Current tenure and perfection programs target the areas and the competences necessary to deepening and mastery both disciplinary contents and didactic contents. These favored religion teachers to exert a better control of the doctrinal elements, of the design and training evaluation processes and also an optimization of the methodologies for shaping and knowledge of personality. Teaching profession imposes specific competences (Săsărman, Breaz, Lobonț, 1999, p: 178), divided into several sections:

- *Competences aimed at fulfilling effectively a social role*
  - ✓ competence to understand and then to seek to be understood
  - ✓ competence to prioritize
  - ✓ competence to anticipate
- *Basic didactic competences*
  - ✓ empathy, communication, creativity
  - ✓ ability to relate and communicate
  - ✓ research and innovation
- *Abilities and skills regarding the specialty*
  - ✓ to assimilate and master the scientific content specific to religion
  - ✓ to do interdisciplinary, multidisciplinary and trans-disciplinary correlations
  - ✓ to capture pedagogical and educational aspects of religion
  - ✓ to structure and adapt the curriculum
  - ✓ to motivate students to think from the perspective of Gospel
  - ✓ to adapt religion contents according to the psycho-pedagogic development stage of the students
  - ✓ to facilitate the skill to understand the moral and religious issues
- *Abilities and skills in general didactics and religion didactics*
  - ✓ to adapt, process and transform the curriculum according to specific educational situations
  - ✓ to understand the spiritual and psychological structure of students

- ✓ to understand the interferences between school psycho-pedagogy and religion didactics
- ✓ the capacity to diagnose and analyze the spiritual state of a group of students and of the students taken individually
- ✓ the capacity to raise students' interest and motivation to actively participate to religion classes
- ✓ the capacity to understand relationships between students, parents and teachers
- ✓ the capacity to transform group mentality
- ✓ the capacity to stimulate cooperation, mutual help, altruism, spirit of justice

- *Competences of ethnical and apologetically nature*
  - ✓ to assume professional responsibilities
  - ✓ the capacity to shape the personality and character
  - ✓ the capacity to motivate students to assume, confess and live the faith.

Catechetical activities and religion school classes according to students, parents and teachers

Religion, as a school subject, is predisposing the student to many questions. This is the reason we consider pedagogical investigation leads to observations and highlights on some aspects and conclusions regarding religious education. For a clearer image on the way religion class is perceived, we asked –through certain questionnaires– the opinion of students, parents and teaches of other subjects. Aware of the fact that "the biblical message involves questioning and self-questioning" (Şanta, 2004, p:248) , we resorted to this strategy because all those involved in religious education will be richer when they have a clearer perception on the way religion school classes and every form of catechism are perceived by the society.

The survey may also be a pretext for initiating a dialog, a debate, an argumentation or counseling. It is indicated to judge religious education not only by what we want it to be, but also from the point of view of students, parents, teachers of other subjects etc. We will present below some opinions regarding these aspects.

Students. There have been questioned a number of 497 students from the primary, secondary and high school levels from 11 school units belonging to Cluj County School Inspectorate. The structure of the questionnaire was the following:

- *What do religion classes represent for you?*
- *Do you think religion classes help you?*

At primary school level, from 138 students, 135 said they like religion class and they feel it is useful, and 3 students said they do not particularly enjoy religion class. Here are some opinions:

- *For me religion class represent a conversation with God and a moment of joy* (Questionnaire, 4th grade, „Horea" School, Cluj-Napoca, 24.03.2003)
- *Religion classes help us to learn about the holy lives of martyrs, they urge us towards a sinless life, they help us to be closer to God* (Questionnaire, 4th grade, School no. 21, Cluj-Napoca, 24.03.2003)
- *I think religion classes help us a lot; they teach us to respect the Church and to love our parents. The most important thing is they help us to love Christ and the saints.* (Questionnaire, 4th grade, „L. Rebreanu" School, Cluj-Napoca, 25.03.2003)

At middle school level, from a number of 173 students, 165 answered they are satisfied with the religion school classes, 5 said only sometimes they like these classes and 3 replied they do not like them. Their opinions are interesting:

- *A particular and special subject because it helps us to be kinder to each other and to correct our mistakes* (Questionnaire, 4th grade, „Horea" School, Cluj-Napoca, 28.03.2003)
- *Religion class helped me to clear some things in my head because I was very confused. Everyone likes our teacher's classes* (Questionnaire, 8th grade, „G. Voievod" Highschool, Gilău, 8.04.2003)
- *For me religion classes are the most beautiful classes, even though they are not as important as Romanian Literature classes. It is the class where I speak openly with the teacher; it is a relaxing class… During religion classes it is as if we were living in another realm, in a better, nicer world.* (Questionnaire, 8th grade, „G. Voievod" Highschool, Gilău, 8.04.2003)

From high school have been questioned 186 students, from whom 154 think that religion classes have a special role among the other subjects, 18 did not answer and 15 confessed they do not see the point of studying it. The opinions of high school students are very responsible:

- *Religion classes, for me, represent a class through which we become closer to God and we learn His Word; this way we cannot say we have not heard of the Gospel* (Questionnaire, 9th grade, Pedagogical Highschool, Cluj-Napoca, 25.03.2003.
- *I am sure religion classes help us to go on the right path and teach us how to please God and our fellow people* (Questionnaire, 9th grade, Pedagogical Highschool, Cluj-Napoca, 25.03.2003)

- *It is a relaxing class, but I do not think an extra class is what we need in the 12th grade when we are very busy* (Questionnaire, 12th grade, „Avram Iancu" Highschool, Cluj-Napoca, 25.03.2003).

Parents. In the second semester of 2003-2004 school year we questioned 254 parents of students who go to school units belonging to Cluj County School Inspectorate. We found that the majority of the parents are content with the way religion is taught in schools and with the way their children are guided and assisted during religion classes. We present some of the parents' opinions:

- *Religion classes help my child to realize God is by his side and he is not alone through trouble and problems. He knows the difference between good and bad* (Questionnarie, „A. Iancu" School, Câmpia Turzii, 25.03.2004)
- *I can honestly say that I am content of the moral and spiritual progress of my daughter and I have the certitude that her spiritual ascent (which I hope she will go through honestly) will take her to higher levels then it took me; they remind me fondly of my school years and, at the same time with regret, because of the absolute absence of religion classes* (Questionnaire, „Gheorghe Şincai" Highschool, Cluj-Napoca, 20.03.2004)
- *According to my daughter, religion classes are held in a normal way, they are classes where students always understand what is taught…Over the years, my daughter's progress has grown; this year thanks to her young teacher, she received answers to some questions which had not been answered for many years* (Questionnaire, „Raluca Ripan" Technical Highschool, Cluj-Napoca, 20.03.2004)
- *We are pleased that what is done is done with pleasure. It is very important that at the end of religion classes, the students walk out with the hearth opened by God…Gradually, the faith received in childhood must become personal belief…I cannot say to whom, but a request should be submitted for a found, or a found should be allocated, in order to go on pilgrimages with the kids. In addition to the knowledge assimilated in class, the students would remain, also, with the beauty of the images that would surely be imprinted in their minds. This is due to the fact that some families are indigent* (Questionnaire, „V. Ungureanu" Technical Highschool, Câmpia Turzii, 21.03.2004).

School teachers. Teachers of other subjects can help religion teachers in various aspects: interdisciplinary activities, inter-assisting, offering some educational resources, offering certain suggestions regarding the strategies

and methodologies used. Very interesting are the opinions and suggestion of other disciplines teachers on how to operate in schools. In order to underline this fact, we gave a questionnaire to some teachers (262 have answered) from 23 middle schools and high schools form Cluj County (June, 2003). We selected some answers and opinions:

- *Religion classes contribute in a special way to forming students' personality, to shaping their character, to forming a healthy conception about the world. It cultivates their feelings of love of fellow men and of God.*
- *Religion teacher morally supports the students and he is actively involved in their life by giving them advice (sometimes, where the class master and the parents have failed, the religion teacher has succeeded).*
- *The students are more understanding; through religion classes, the positive qualities of students are developed*
- *I consider religion class to be a special one if the teacher is competent.*
- *I consider one of the shortcomings is that the emphasis is on informing the students and not so much on shaping their personalities.*
- *In my opinion, for 1st to 4th grade the lessons are quite difficult, it is given a lot of information that is not very accessible to children; the lessons should have their starting point in surrounding realities, in children's universe. The objectives of the curriculum can be accomplished also by simple stories.*
- *Children are better behaved, they have the feeling God exists. It is a shame that religion teacher's work, in school, is not carried on by parents, at home.*

In early December 2014, the 2003 survey was repeated in order to make a comparative analysis regarding the perception on religion teaching now. The questionnaire had the following structure:

- *What is your opinion on the religion class?*
- *Do you think the religion class is necessary for everyday life?*

The questionnaire was applied in 72 school units in 5 counties: Cluj, Satu Mare, Sălaj, Bistriţa and Maramureş. There have been interviewed students from 5th grade to 12th grade, parents and teachers of other subjects. Comparative analysis of the answers, opinions and suggestions reflects the following aspects:

- Proactive interest is maintained in studying religion as a school subject of the common core curriculum;
- Students keep their interest in the subject, and at the same time, they seem captivated by active and participative methods;
- Students, and also parents, appreciate the fact that this discipline is preparing them for everyday challenges, offering models and examples worthy to be observed;

- Teachers of other subjects value the educative and formative role of the subject, and its interdisciplinary approaches.

Synthesizing, it can be stated that the contents and the educative activities specific to the subject facilitate the process of shaping desirable characters, inviting to communication and communion, both in the educative space, and in society.

The opinions and suggestions from students, parents and teachers come to certify that religious education has found its place in Romanian schools. It behooves the religion teacher to adapt his didactic speech according to particular situations from school and from society, using those school books and didactic resources which are appropriate to the age particularities of students, and also appropriate to interdisciplinary approaches.

Conclusions

Analyzing these competences and reporting them to tenure contest, we cannot avoid including somehow our endeavor in the bivalent logical approach. This is explained by the position of religion teacher between university and school, between *poiesis* and *praxis*, between his *mentors* (university professors) and his *apprentices* (students). At the same time, the religion teacher is himself a mentor and an apprentice in his school. He is a mentor because his calling is to shape moral and religious characters, to form opinions. He will also seek to improve the flexibility and the fluidity of channels and of horizontal and vertical informational fluxes between religion and other subjects from the educational process. Historical perspective on the relationship between education and religion, underlines that education's mission and religion's mission are not mutually exclusive, but interdependent, they stimulate each other, tending to increase their interference nowadays.

The paradox of Christian teaching and communication is that everything comes from God, but the man remains fully responsible to the divine gift, "which we obtain through sacrament of Christian initiation" (Streza, Dură, 1988, p: 220). After the resurrection, Christ the Savior commands the Apostles*: therefore go and make disciples of all nations*. Risen Christ, in order to continue His work, joins His disciples saying: *And lo, I am with you always, even unto the end of the world*. The work of God is the one that is continuous, not only that of the man. God transcends the man (the catechist) to meet the world.

Catechetical and educational activities will reach their intended purpose and finalities to the extent to which we observe more profoundly the words of Apostle Paul: *Though I am free and belong to no one, I have made myself a slave to everyone, to win as many as possible. To the Jews I became like*

a Jew, to win the Jews. To those under the law I became like one under the law (though I myself am not under the law), so as to win those under the law. To those not having the law I became like one not having the law (though I am not free from God's law but am under Christ's law), so as to win those not having the law.To the weak I became weak, to win the weak. I have become all things to all people so that by all possible means I might save some. I do all this for the sake of the gospel, that I may share in its blessings (I Cor. 9, 19-23).

It must be admitted that in the 21st century the Gospel's message will not be transmitted as it used to be in the 19th century. Nevertheless, the same eternal values revealed by God will be transmitted. With each step, with each generation, the Church is renewing its catechetic and pastoral means; remaining constant in its principles regarding faith, but refreshing itself permanently through its means of exposing faith. Living in a world of changes, the Church is and should be sensitive to them. It seems suggestive the urge of worthy of remembrance Metropolitan Antonie Plămădeală: *to keep up with the world, but not to be like it* (Plămădeală, 1999, p: 169), to update Christian values according to each generation.

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THE EFFECT OF REWARDS ON STUDENT MOTIVATION

MARIA WONG[*], MARGARETA MARIA THOMSON[**]

ABSTRACT. The present study is a literature review focused on investigating student academic motivation in relationship with academic performance. Much research has been dedicated to exploring student motivation, the types of motivations and the impact of motivation on student behavior and classroom performance. A specific line of research has explored specifically how teachers understand the use of rewards in classroom, what is the student outcome as of result of using various motivational strategies, and which are the most effective ways to motivate students. Practice shows that a vast majority of teachers use predominantly rewards to enhance student academic motivation, but recent research shows that extensive use of rewards in classrooms can have a negative impact on student intrinsic motivation, and in the long run, a negative impact on student academic achievement as well.

Key words*: motivation, rewards, teacher education.*

ZUSAMMENFASSUNG. Die vorliegende Studie ist eine Literaturrecherche, die sich auf der Untersuchung von Schülern akademische Motivation in Beziehung zu schulischen Leistungen konzentriert. Viele Untersuchungen waren gewidmet, die Motivation der Schüler, die Arten der Motivation und den Einfluss von Motivation auf das Verhalten der Schüler und akademische Leistungen zu erforschen. Eine bestimmte Forschungsrichtung hat ausdrücklich untersucht, wie die Lehrer die Verwendung von Belohnungen in der Klasse verstehen, zu welche Ergebnisse die Verwendung von verschiedenen Motivationsstrategien führt und welche die wirksamsten Möglichkeiten sind, um Schülern zu motivieren. Die Praxis zeigt, dass eine große Mehrheit von Lehrkräften überwiegend Belohnungen verwendet, um die akademische Motivation den Schülern zu verbessern. Aber, neuere Forschungen zeigen, dass umfassenden Gebrauch von Belohnungen in den Klassenzimmern kann negativ die Schüler intrinsische Motivation beeinflussen und, langfristig, hat dieses Prozess auch einen negativen Einfluss auf Schüler akademische Leistungen.

Schlüsselwörter: *Motivation, Belohnung, Lehrerausbildung.*

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I. Introduction and Purpose

Recent research in teacher education focused intensively on teaching quality and student performance. A bulk of research has focused specifically on student academic achievement and motivation; most specifically on how the use of rewards has been influencing student achievement. Recent research has shown that the use of rewards undermines student intrinsic motivation and thus can negatively impact student academic achievement (Ryan & Deci, 2000). How teachers understand the role of rewards, the impact of extrinsic and intrinsic motivation on student achievement is still part of an ongoing debate in education regarding the use of effective motivational strategies with students.

A person is motivated if they are "moved to do something" (Ryan & Deci, 2000, p. 54). Motivation is the reason a person exhibits a behavior (Guay et al., 2010). If a person does not have an incentive to act, they will be unmotivated to perform a behavior. Motivation plays a key role in education. Students must be motivated in order to comply with school regulations and to excel academically. When people are born, they are eager, curious and ready to learn about the world (Ryan & Deci, 2000). However, as they grow they begin to lose their motivation to learn (Guay et al., 2010). In order to promote compliance and academic achievement, teachers must find ways to motivate students. Encouraging motivation in elementary school is especially vital because it predicts students' motivation to learn in later grades (Broussard & Garrison, 2004). Students who are highly motivated to learn by age nine will continue to perform better academically later in life than students who are not motivated to learn by age nine (Broussard & Garrison, 2004). Given the importance motivation plays in students' academic success, teachers have the crucial task of discovering effective means to motivate students.

Academically motivating students and keeping them motivated is one of the greatest challenges teachers face. Teachers regularly use rewards, such as stickers, extra time on the computer and praise, to encourage academic achievement. In the United States, teachers have been using toys to gain compliance from children since as early as the 1800's (Kohn, 1993). However, research shows that some common forms of rewards can have a negative effect on students' long term motivation. Tangible rewards, in particular, have been shown to decrease intrinsic motivation. Praise, however, has been shown to increase intrinsic motivation under certain circumstances (Deci, Koestner, & Ryan, 2001; Kohn, 1993). By identifying those circumstances, teachers can effectively use praise to motivate students to excel. Praise refers to "positive evaluations made by a person of another's products, performances or attributes" (Kanouse, Gumpert, & Canavan-Gumpert, 1981, p. 98). To better understand why praise should be used and how to use praise effectively,

teachers must first understand what motivates students, how rewards can motivate students and what effect praise has on motivation.

II. Theoretical Considerations

Intrinsic Motivators

Intrinsic motivation refers to behaviors done to attain something directly from the activity, such as enjoyment, learning or feelings of accomplishment (Guay et al., 2010). An intrinsically motivated person, for example, will conduct a science experiment because finding a solution provides a sense of pleasure. In order to comprehend the importance of using praise, teachers need to know what motivates students. Students can be motivated either through intrinsic motivation or extrinsic motivation (Guay et al., 2010).

Although compliance is important, teachers should use intrinsic motivators to encourage students to excel. To determine the effect of intrinsic and extrinsic motivation on performance, Lepper (1988) asked 797 third to eighth graders to fill out questionnaires in which they were asked the degree to which they were motivated by certain intrinsic and extrinsic motivators (Lepper, Corpus, & Iyengar, 2005). Intrinsic factors included preference for challenge, focus on curiosity and desire for mastery, while extrinsic factors included preference for easy work, pleasing the teacher and getting good grades (Lepper, Corpus, & Iyengar, 2005). They found that kids with higher intrinsic motivation had higher GPAs and standardized test scores, whereas kids with higher extrinsic motivation had lower GPAs and standardized test scores (Lepper, Corpus, & Iyengar, 2005). In another study, Lepper (1973) gave preschoolers a certificate and ribbon for drawing with Magic Markers (Kohn, 1993). Two weeks later he let the kids play with the Magic Markers again but not for a reward. He found that the kids who were offered the rewards were less interested in the markers than they were before they were given the reward and less interested than kids who were not given a reward (Kohn, 1993). He concluded that rewards, even given once, can decrease intrinsic motivation for weeks (Kohn, 1993). The children's perception of why they should play with the markers changed from enjoyment to the attainment of the reward (Cameron & Pierce, 1994). He called this perception shift from self-initiated goals to external goals the overjustification effect (Cameron & Pierce, 1994).

Intrinsic motivation plays a critical role in students' achievement in certain subjects based on their gender (Guay et al., 2010). Guay and his colleagues found that girls were more intrinsically motivated to excel in reading and writing then boys. On the other hand, boys were more intrinsically motivated to excel in math than girls (Guay et al., 2010). They found that this difference is more

prominent in children from ages eight and above (Guay et al., 2010). Students between the ages of five and seven generally maintain the same intrinsic motivation among various subject areas (Guay et al., 2010). Guay and his colleagues argued that the difference can be attributed to children's perceptions of their strengths and weaknesses (Guay et al., 2010). Older children are able to more accurately perceive their relative strengths and weaknesses among different subjects, whereas younger children generally perceive themselves as having the same degree of strengths and weaknesses across all subjects (Guay et al., 2010). Because intrinsic motivation plays such an important role in achievement, it is imperative that teachers find ways to reward children that will maintain or increase their intrinsic motivation.

Extrinsic Motivators

Extrinsic motivation refers to behaviors done to attain something not directly from the activity, such as rewards (Guay et al., 2010). For example, an extrinsically motivated person will solve a math problem even when they have little interest in it because of the satisfaction they will get from a reward.

Over a hundred studies have concluded that extrinsic motivators such as tangible rewards lead to a decrease in intrinsic motivation (Deci, Koestner, & Ryan, 2001). When kids are given extrinsic motivators, they perceive the activity they are being asked to do as merely a means to the extrinsic motivator (Lepper, 1988). As such, they lose their intrinsic motivation to do the activity and cease to do the task once the reward is removed (Lepper, 1988). For example, Lepper (1988) found that fourth and fifth graders rewarded for playing math games played them frequently while they were offered a reward, but once the reward stopped, they no longer played with the games (Kohn, 1993). Kids who were not rewarded continued to play with the games (Kohn, 1993). Extrinsic motivators decrease people's attitude toward an activity (Kohn, 1993). They lead to the belief that "if they have to bribe me to do this, it must be something I wouldn't want to do" (Kohn, 1993, p. 76). Tangible rewards lead kids to exercise the least effort needed to obtain the reward and avoid taking risks (Lepper, 1988; Kohn, 1993). In several studies, when kids received rewards for reading books, they read more books, but the books were shorter, had larger print, and the children demonstrated poorer comprehension than kids who did not receive rewards (Kohn, 1993). Furthermore, kids' interest in books outside of school dropped significantly (Kohn, 1993).

One of the most detrimental effects of tangible rewards is that it forces kids to compete as rivals to obtain the rewards, making classmates their opponents (Kohn, 2006). This prevents cooperation and sharing of resources and knowledge, which leads to higher quality learning (Kohn, 2006). Despite the evidence that tangible rewards are detrimental to intrinsic motivation,

Cameron and Pierce (1994) found tangible rewards to be detrimental only when kids expected the rewards for doing the activity. They claimed "the undermining of intrinsic motivation by extrinsic awards is a myth" (Deci, Koestner, & Ryan, 2001, p. 2). They evaluated several studies where intrinsic motivation was measured by attitude, time on task after removing the reward, performance and willingness to volunteer for future studies without a reward (Cameron & Pierce, 1994). Results found that rewards increased intrinsic motivation for up to a year (Cameron & Pierce, 1994). Results also found that verbal rewards, as well as rewards for performance, increased intrinsic motivation (Cameron & Pierce, 1994). Rewards were shown to decrease intrinsic motivation, however, when tangible rewards were expected for doing an activity, regardless of the level of performance (Cameron & Pierce, 1994). Cameron and Pierce (1994) contended that studies making broad claims against the use of rewards either used ineffective rewards that did not cause people to increase their behaviors or used poorly devised questions to assess attitude, which may have confused people's liking of the reward with their liking of the activity.

However, researchers in 1996 and 2001conducted an extensive review of 128 studies which challenged Cameron and Pierce's claims, while supporting Lepper's findings (Deci, Koestner, & Ryan, 2001). They found that tangible rewards, both for completion of tasks and for performance, led to decreased motivation (Deci, Koestner, & Ryan, 2001). They also conducted a study which not only confirmed that performance based rewards decrease intrinsic motivation, but that they are the most detrimental rewards when some people receive smaller rewards than others (Deci, Koestner, & Ryan, 1999). In another study, people showing the best performances were given the greatest rewards, while others received smaller or no rewards (Deci, Koestner, & Ryan, 2001). Intrinsic motivation in this group was lower than any other group in the 128 studies (Deci, Koestner, & Ryan, 2001). These researchers concluded that findings described by Cameron and Pierce used some inappropriate procedures and made errors in their meta-analysis (Deci, Koestner & Ryan, 2001). Given the extensive amount of research showing the detrimental effects of tangible rewards, teachers should carefully use extrinsic motivators, and consider whenever appropriate the use of praise to motivate students.

Praise

In order to use praise effectively we must also consider the effect of praise on motivation. Praise can have either positive or negative effects depending on how it is offered and based on the information that it conveys. Praise increases intrinsic motivation when it is focused on underlying processes, rather than traits (Mueller & Dweck, 1998). For example, it is better

to praise someone for using the right strategy to solve a problem, rather than for being an expedient worker. This effect is even greater when children are performing challenging tasks (Mueller & Dweck, 1998). Praise also increases intrinsic motivation when it is perceived as sincere and directed at the student's mastery of a skill without making social comparisons (Henderlong & Lepper, 2002). It is more effective, for example, to praise someone for getting most of the problems correct, rather than getting more problems correct than classmates. Social comparisons are detrimental, in part, because they set the bar too high for what children can be expected to do (Henderlong & Lepper, 2002). Not all children can be above average for every task (Henderlong & Lepper, 2002). To increase intrinsic motivation, teachers should praise a child's effort, rather than his or her ability. Praising effort helps kids attribute their success to internal, controllable factors, giving them a feeling of control over their learning (Mueller & Dweck, 1998). If kids feel in control over their lives, they will accept more risks and challenges (Mueller & Dweck, 1998). On the other hand, praising ability leads kids to believe that their intelligence is unchangeable (Mueller & Dweck, 1998). In order to maintain the appearance of excellence, they will avoid challenges and risks (Mueller & Dweck, 1998). Without challenges and risks, kids will fail to fulfill their potential (Mueller & Dweck, 1998).

Even if praise is given for mastery, process and effort, rather than social comparisons, traits or ability, praise can only have a positive effect if it leads to a feeling of self-determination, rather a feeling of being controlled (Kohn, 1993). Praise diminishes intrinsic motivation when used controllingly (Deci, Koestner, & Ryan, 1999). Praise can only increase motivation if not used controllingly but to affirm the person's competence (Deci, Koestner, & Ryan, 1999). Praised used to control students may decreases intrinsic motivation because the negative effects of the control counter the positive effects of the information on competence (Deci, Koestner, & Ryan, 1999). Sometimes, praise can be received as controlling or demeaning when the teacher's intentions are merely to compliment (Kohn, 2006). Sometimes praise is considered demeaning or dishonest when it is exaggerated (Kohn, 2006). To avoid this, praise should be specific, given only when merited and teachers should be aware of the inflection in their voice.

Before we can use praise effectively, however, we must understand how extrinsic rewards motivate students. The two theories that have been proposed are behaviorism and cognitive evaluation theory. According to Watson (1919), all behaviors are physiological responses to stimuli, which he defined as "physical energies" that elicit a behavior (p. 194). He argued that by altering the stimuli a child is exposed to, he could train him to become any type of specialist "even into beggar-man and thief, regardless of his talents" (Watson, 1927, p. 10). The notion that all behaviors can be explained in terms of stimuli and responses became known as behaviorism (Watson, 1927). In

1938 Skinner expanded on Watson's theories and concluded that teaching is merely the act of providing reinforcers to increase the repetition of a behavior. He concluded that there is no such thing as a self or freedom (Skinner, 1990). People are nothing more than biochemical machines (Skinner, 1990). They will repeat a behavior when a reward, which he called a reinforcer, follows a behavior (Skinner, 1950). Unlike Skinner, Deci and Ryan (2001) believed that intrinsic motivation is based on an innate need for competence and self-determination. People are born curious about the world and ready to learn; therefore, extrinsic rewards are superfluous (Ryan & Deci, 2000). External events can increase a person's intrinsic motivation if it promotes feelings of competence and self-determination (Ryan & Deci, 2000). Feedback and rewards can, at times, increase intrinsic motivation because of the information they provide (Ryan & Deci, 2000). However, if given in a controlling manner, the negative effect of the control will counter the positive effect of the information, and lead to a decrease in intrinsic motivation (Deci, Koestner, & Ryan, 2001). These principles are known as the cognitive evaluation theory (Deci, Koestner, & Ryan, 2001). Based on the theories of behaviorism and cognitive evaluation theory, praise should be given repeatedly until the students are achieving at the desired level and praise should be used to promote competence and self-determination.

III. Discussion and Conclusion

Decades of research and over a hundred studies have failed to produce general agreement concerning the effects of rewards on intrinsic motivation. A general review of the literature on rewards, however, suggests that teachers should use caution before immersing their class in rewards. Over a hundred studies have concluded that tangible rewards lead to a decrease in intrinsic motivation (Deci, Koestner, & Ryan, 2001). In turn, research has shown intrinsic motivation to be directly correlated to achievement (Lepper, Corpus & Iyengar, 2005). The negative effect tangible rewards can have on achievement, suggests it may be counterproductive for teachers to use tangible rewards to try to increase students' achievement. However, as Lepper (1988) pointed out, it may be necessary to use rewards if the student does not possess intrinsic motivations for the task. Although Kohn (1993) points out that people are born intrinsically motivated and rewards can only exacerbate the problem if a child has lost his intrinsic motivation, students need to learn the material being taught or they will fall further behind. In an ideal world teachers would have the time and expertise to help every child in the class regain his or her intrinsic motivation. However, with the growing number kids in the classroom, the extreme time constraints teachers face and the complex issues many kids are going through, including divorce, illness, family violence and poverty, teachers

simply cannot resolve the personal needs of every child. After teachers do their best to motivate students intrinsically and to help them resolve their personal issues, teachers need be able to use extrinsic motivators to encourage students who remain unmotivated to learn the material.

A review of the literature on motivation suggests that praise is the most effective external motivator for achievement. Although intrinsic motivation leads to greater achievement, it is not always possible to motivate kids intrinsically. When extrinsic motivators are required praise is best because tangible rewards not only fail to achieve better performance, but they lead to a decrease in intrinsic motivation. According to the theories of behaviorism and cognitive evaluation theory, praise should be given frequently for competence and self-determination. Research also finds that to be effective praise must be specific, honest and directed at mastery, process and effort, rather than social comparisons, traits or ability.

Frequent, specific praise given honestly for mastery, process and effort affects students' intrinsic motivation to excel. At first glance, the research on praise as an extrinsic motivator appears inconclusive. In general, many behaviorists contend that verbal rewards are always effective, while most cognitive researchers argue that praise can be detrimental. A closer look at the research, however, reveals that there are very specific instances when praise is detrimental or effective. By evaluating those instances, we can comprehensively identify the characteristics of effective praise and further increase students' motivation by combining those characteristics. Various research studies have compared two methods of praise; for example, process based praise compared to trait based praise or specific praise compared to general praise. This limited research suggests that praise is effective if it is process based or if it is specific. This can lead some teachers to mistakenly believe that process based general praise if effective. For example, a teacher using process based praise may fail to achieve increased performance from students. This may be because the positive effects of using process based praise may be outweighed by the negative effects of the teacher's use of general, rather than specific, praise. By combining those characteristics of praise that have been deemed effective, we can magnify their combined effect on students' intrinsic motivation. By doing so, we can clarify the most effective ways to praise students.

Amidst the flux of seemingly inconclusive research, both tangible and verbal rewards continue to be promoted as one of the most effective tools for classroom management (Kohn, 2006). However, research supports the importance of using praise, rather than tangible rewards, to better motivate students. By using a comprehensive list of effective praise characteristics, teachers can more effectively use praise to increase student's intrinsic motivation to excel. As a result, their students will become better academically. Teachers will have achieved one of their greatest challenges.

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