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**THE SPECIFIC OF USING OPEN RESOURCES IN FORMAL  
EDUCATION**

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**Abstract**

Current trends of development of the educational framework evoke the support of the innovative methods of integrating open educational resources and formative resources in learning process. In this study we aimed at developing the coordinates of an educational design centered on using open and formative resources. As a study methodology, the cascade analysis was used, with groups of specialists for each level/ education form, the variables of an integrative educational approach being set. Conclusions show the innovative dimension of this educational design model (communication abilities, understanding capacity, the degree of interaction between students, the level of interactivity with the content of learning). The weak points of this design are the learning environment objectives created by the educator, and they refer to: the unavailability of certain analysed types, teachers lack of experience in using them, and not valuing these resources potential in educational context, the ungrateful attitude of some specialists and parents regarding their use in school, in teaching situations, in the first levels of schooling. An open learning design is shaped on the base of the socio-constructivist paradigm that promotes the idea of building knowledge through individual effort in interaction with the content.

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**Keywords:** Open-resources; formative-resources; open learning-design.

## 1. Introduction

In the last 20 years, in Romanian educational system we have assisted at the reshaping of educational area, by renewing all its strategic components, its methodology, traditional means and inlaying some methods and alternative means, whose efficiency and opportunity have often been investigated in diverse studies and national projects. In this new area, the teaching activity is governed by



new models of curriculum design, complementary strategic approach, educational supports and varied and flexible logistics (Chiş, 2002).

Reorganizing the means of learning system is one of the priorities of the Romanian pre-university education reforms, with direct implications in reshaping the curriculum system. Arranging, individualizing educational needs at the training and educational needs of each child/students, ensures optimal curricular reforms (Tauşan, 2016). The development of the means of education system by including modern means as open resources has direct consequences upon the educational design and on the strategic approach of the teaching process. On the other hand, the integration of open resources in the formal didactic process leads to the reshaping of all the teaching components- method of teaching, of organizing school learning, ways of evaluating student's results. On the other hand, this type of resources give a distinct shape of the educational environment: the class ergonomics becomes flexible and easily to be adapted to school needs, direct communication with persons outside the teaching area is allowed, the online communication resources used helps to develop the informational volume as a learning base; the existence of these means builds students a good place to practice technical skills and also to develop ICT skills.

## **2. Paper Theoretical Foundation and Related Literature**

### **2.1. Open Resources and Formative-Resources. A Way to Open Learning-Design**

In recent years there has been significant progress on identifying the potential of open-resources and their inclusion in the programs as support in the educational activities. Many studies highlight the importance of these technologies in learning by projects, as a support for developing the investigation abilities, the cognitive structures, the speed of processing information, and for developing the collaboration between students in school and virtual space (Ulrich, 2016).

Moreover, the number of available non-course open educational resources - like articles, individual curriculum units, modules, and simulations - is also increasing. La acestea se adauga surse media precum imaginii, sunete, animatii, filme. Extinderea invatamantului la distanta a permis dezvoltarea materialelor multimedia de tipul mobile-learning (m-learning) ca modalitate de a invata oricand, oriunde, fara restrictii de spatiu si timp, cu ajutorul dispozitivelor mobile si portabile: telefoane mobile, PDA-uri, camere digitale, reportofoane etc. (Bocoş, 2013).

Given the students' training needs, as well as their skills and achievements, but also the time they spend to acquire a certain level of training, on-line communication along with face-to-face training sessions can contribute, to a larger extent, to the formation of the skills profile of university graduates in the field of education sciences (Langa, 2016).

It is a fact that these digital instruments enter in children daily life from an early age, that leads teachers to change options in interaction with the digital environment (Ulrich, 2016). In this sense, educational resources based on communication has fully demonstrated its efficiency and specificity. It stimulates the intellectual activity of students, causes them positive feelings, involve them more in achieving school tasks and create a suitable environment for the development of the teaching-learning process (Bloju, & Stan, 2013).

### 3. Methodology

The purpose of this research is to develop a theoretical-practical model for integrating open resources and formative resources in teaching didactic contents.

To develop this model, workshops were held with different categories of specialists, achieving a cascade analysis, as follows:

- Identifying concrete ways to operationalize specific terms

The group of three specialist experts in the field of higher education (sociopsihopedagogical skills) achieves an analysis of the specific concepts: open resources, formative resources, ways of exploiting it in formal context, advantages and limits, analyze of the competent relationship specific - educational content - open resources/ formative resources - assessing pupil skills.

After analysing and synthesizing responses, we identified the following variables for the defined notions:

- to form the communication skills, open resources /formative resources have the following advantages for the teaching process: large amount of information, new and inaccessible information from other sources, associating the information/concepts with the intuitive support (movie, presentation, audio support, dynamic support), opportunities for interaction between students;
  - to form scientific skills, open resources/ formative resources are valuable because of the following advantages: sensory support by experiments, movies, ability to access platform, the opportunity to access repeatedly the electronic source to ensure the understanding of scientific content;
  - in developing learning attitudes, by using open resources, students practice their techniques of intellectual work (selecting and structuring the material, essentializing and systematizing it, managing time and effort in learning);
  - integrating open resources /formative resources in the teaching process creates the habit for students to practice directly the use of information tools and to support learning; these are the best tools for the development of autonomous learning;
  - formative assessment is done by creating moments of evaluation based on assessment and self-assessment: identify gaps in learning, repetition of learning, communication with others to clarify learning difficulties (with open resources support - group discussions, open consultations, further investigations by search engine computer and identification of new informational sources etc.).
- Analysis of the curriculum for preschool and primary education in order to identify categories of content and modalities of teaching transposition and open resources, namely formative resources complying normative teaching (availability depending on age and students level of training, providing concrete - sensorial base, corroborating theoretical and practical contents, essentialization scientific content, providing a force feedback).

The group of six specialist experts in preschool and primary education (skills in language, mathematics, geography, history) analyzes concrete ways and examples of design focused on using open resources and formative resources in teaching contents of the curriculum curricular areas (language and communication, mathematics and science, arts, technology, man and society, music and movement, play

and movement). In this analysis the contents proposed by the education syllabus were respected. For each curriculum area found in the curricula.

For example, for curricular area Language and Communication, integration of open resources in the educational activity is possible in the following didactic situations: play roles, telling and retellings, organizing dialogues with colleagues from other school environments or real or created characters, the analysis of certain case studies (author's biography, events, real or imagined events), listening (for foreign languages).

For the curricular area of Mathematics and Sciences, didactic situations can be created, such as: demonstrations (the functioning of tools, appliances), experiments (water cycle in nature), problem solving (earthquake, fire), observations (natural phenomena, the cosmos, the living environment). Interesting examples were found for curriculum areas Music and Movement, Play and Movement: listening and watching the dances and traditional songs from different world areas, which creates an optimal pitch for valorising elements of intercultural and emotional expressiveness. In the mentioned cases, open resources are the iconographic support for formative evaluation.

At the same time, the following didactic transposition and educational development criteria have been analysed: the selection of contents in relation with the specific /frame targeted competence, the contents essentialization around some key concepts for each area content, to simplify the contents through examples, demonstrations, learning tasks ordered from simple to complex, problem-solving, case studies etc. to identify some resources categories that can be used in relation to the elements presented above (traditional/modern, individual/ group, natural, bi-dimensional, tri-dimensional /open resources /formative resources etc.)

- Develop an educational design model from the perspective of open and formative resources integration

The group of six experts, methodologists of preschool and primary education, in a focus group, identify and analyze the strengths and weaknesses of proposed educational design. The proposed educational design will be based on the following variables: specific skills, type of content (abstract /concrete, communication/science/ musical/ aesthetic), the use of active and interactive methodology, develop of cooperation relations in the learning group, the encouragement of evaluation and inter-evaluation.

#### **4. Results**

By quantifying responses for each of the experts group and their longitudinal analysis the following coordinates can be specified in the development of a theoretical and practical design to integrate open and formative resources in teaching didactic contents.

Educational design centered on the development of specific skills of a development domain: socio-emotional, language and communication, cognitive skills and attitudes to learning:

- Teaching program: skills operationalization from school curriculum by defining the knowledge sistem, specific skills from development sistem;
- Strategic options: strategies based on practical action and experimentation, problem-based strategies, discovery, research, expeditionary type etc. It is indicated the appropriateness of strategies at the

specific and the content of the development area: for communication activities will predominate formative development of communication strategies, for play and movement activities will prevail playful formative strategies etc. Complementary activities will be designed to develop the targeted skills - activities of choice, of personal development, of multiple intelligences development etc.; strategic options will focus on constructivism and socio-constructivism dimensions, building knowledge through personal effort, critical analysis of the contents, interactivity with the content to make some cognitive reorganizations.

- Educational Resources: open-resources like digital textbooks, educational software, and connect their classes at online systems (interactive whiteboard), audio and video sequences, audio-video CD-s, interactive animated collections. Should be noted that, in education syllabus for primary education disciplines, there are provided examples of learning situations based on sequences/national programs (from the national television).
- After compatibility criteria of educational resources, the following combinations can be taken into account: perfectly compatible teaching resources; partially compatible (determined designed sequences as teaching strategy type in small steps of learning); incompatible resources (which cannot be combined). This classification has a theoretical reason for that compatibility in school practice occurs in certain segments that complement each other. For example, pronounced creativity resources are not theoretically compatible but in concrete work they support each other (creativity needs also automated elements, on the other side, in skills training it is necessary the student to involve subjectively and creatively).

Compatibility criteria of educational resources with the other components of the teaching process respect the determinative approach goals-contents-strategic approaches. In this way, the use of educational resources has to be made to serve the targeted operational objectives, type of content, didactic method, as: a tool to support learning, a basic instrument for the abstract contents, illustrative support, simulative support for questions, discussions etc.

- Time coordinate: rational use of teaching time, short moments for each sequence in which open resources are integrated to avoid fatigue, negative effects on student development (at physiological or psychological level). The learning time using these resources must be related to student's age, to their formative value in relation with the aimed goals, to their potential to support teaching /learning /evaluation.
- Space coordinate: open flexible space favoring interactivity between students or students - teacher, and direct interaction with educational resources (optimal visibility, clarity video/ audio etc.);
- Assessment demarche: use of formative assessment strategies, focused on identifying gaps, student awareness of learning obstacles and his positive stimulation in overcoming them, self-evaluation capacity development.
- Human resources skills (teachers, students): the use of informational technology skills, selection and systematization of information, organization and management of learning effort; the use of these sources is not possible without students/ teachers prior training on access to various sources of information or restricting possible sources of information dangerous to students mental health;
- Psycho-relational atmosphere: the use of open resources /formative resources in the learning process is possible in conditions of open relationship teacher - classroom, student - student, governed by

communication, tolerance, objectivity; it is also required to develop an educational environment centred on cooperation, collaboration, critics and innovation.

## 5. Discussions

SWOT analysis of the integration of open resources and formative resources in the educational design shows that integrating in teaching multimedia strategies can be a beneficial solution, given the variety of formal and informal sources that can be used (educational software, magazines and eBooks, internet access, TV shows and radio etc.).

Also, the combination of open resources has positive effects in terms of developing interrelation behavior, communication and mutual relations in group favoring the interactive communication skills development, scientific expertise, ability to understand and interpret.

The weak points of such a design refers to the difficulties to access, inaccessibility of these resources on certain categories of content and implicit high costs in this regard, ineffective temporal dosing in relation to the other categories of resources, whose formative educative value should not be diminished. Each category of educational resources proves its educational potential in an appropriate educational context and in respecting teaching normativity.

## 6. Conclusions

Possible educational designs that can be developed could include and capitalize open resources and formative resources versions, provided they are adapted to efficiently training (school skills development, reporting to scientific and essential content transmitted to pupils, respecting students individual and age particularities etc.). Different types of developed resources are: a set of presentation slides with a few bullets of text per slide; a collection of videos from an actual course, in which the teacher provides the most significant content and answers content-related questions.

Activities formal undertaken do not put barriers in including open resources as educational means whose potential can be optimally exploited in school skills development. More so the educational profile of the compulsory school cycle graduate includes ICT skills training. In this challenge, the system of educational resources and means must become open and flexible to optimize open resources in the formal education.

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