8th LUMEN International Scientific Conference Rethinking Social Action. Core Values in Practice | RSACVP 2017 | 6-9 April 2017 | Suceava – Romania

Rethinking Social Action. Core Values in Practice

Formative Valences of Presentation Graphics Software between Myth and Reality

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https://doi.org/10.18662/lumproc.rsacvp2017.56

How to cite: Petrescu, A. M. A., Gorghiu, G., Stăncescu, I., & Gorgiu, L. M. (2017). Formative Valences of Presentation Graphics Software between Myth and Reality. In C. Ignatescu, A. Sandu, & T. Ciulei (eds.), *Rethinking Social Action. Core Values in Practice* (pp.611-622). Suceava, Romania: LUMEN Proceedings https://doi.org/10.18662/lumproc.rsacvp2017.56

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Formative Valences of Presentation Graphics Software between Myth and Reality

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Abstract

In the context of the on-going reform of the Romanian education, the use of modern educational means (audio-video - mostly in digital format, virtual experiments and simulations, educational software) represents an obvious sign of connecting the school to the imperatives of the contemporary society. The teacher of the 21st century cannot call the attention of the students just using traditional means of learning and teaching strategies, mainly when applying rigid methods, even coercive ones. The modern teachers should possess a range of professional skills which must enable to achieve an educational quality process: communication skills, ways to identify the students' needs, the aspirations and the potentialities of each student, socio-emotional skills, integrated approach to the curriculum, planning, organizing and analyzing abilities, monitoring and evaluation abilities, and not in the end, digital skills. Coming near the digital skills, it has to be noticed that in recent years, the use of presentation graphics software (using Power Point or Prezi by example) in academic lectures and seminars, becomes more common, understood as in accordance to the student's centered educational paradigm and the actual trends of higher education modernization. The paper aims to illustrate an analysis concerning the advantages and limits of using presentation graphics software, as qualitative criteria in the teaching-learning process. In this sense, a questionnaire was developed and applied to a representative sample of students, in order to identify their perceptions about the effects of academic lectures and seminars where teachers use presentations - designed with the help of presentation graphics software - as teaching and learning resources.

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https://doi.org/10.18662/lumproc.rsacvp2017.56
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Selection and peer-review under responsibility of the Organizing Committee of the conference

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Keywords: learning objects, student's centred learning, professional competences, presentation graphics software.

1. Introduction

In the contemporary knowledge-centered society the learning / educational process, approached from a curricular holistic perspective, meets profound changes in terms of its basic components: finalities, contents, methodology and specific assessment strategies. In this sense, ICT (Information and Communication Technology) represents an important part of those changes. In fact, ICT means all and any instruments and means required "to change (procure, process, store, convert and transmit) information, in particular through the use of computers (*electronic calculators*)" [1].

In Romania, Costel Neicu (2011) identifies the following concrete results of implementing ICT in the educational system [2]:

- elaboration of an ICT usage policy in education;
- emergence of ICT as a separate discipline in respect to computer science;
- changes in the school-leaving examination assessment through the introduction of the digital competence tests;
- stimulation of using ICT, mostly in disadvantaged areas, as a premise to equal chances related to access to education;
- significant increase of the projects aiming to develop Computer Assisted Learning;
- introduction of specific requirements to information society, in the law regarding the national education.

The use of ICT in teaching activities enables a simulated achievement of phenomena, processes, actions, otherwise difficult to conduct in a classroom. In addition, the ICT introduction allows the condensation of time and expansion of training space which becomes multidimensional.

In line with the paradigm of the student-centred learning, the use of ICT in learning takes many forms of manifestation in all three structural levels: teaching, learning and assessing.

Therefore, the computer may be used in didactical activities to: capturing the students' attention, preparing sequences for acquisition of new information, formulating questions regarding previous topics and introducing new contents in order to provide new models and solutions to solve exercises and drills, presenting algorithms useful in solving type-

problems, projecting graphs, diagrams, images, educational videoclips etc., carrying out practical applications, demonstrating models, simulating didactic games, phenomena, experiences and interpreting the results, forming psycho-motor skills (car driving, typing etc.), assessing learning results, proceeding self-assessment, organizing and directing independent learning, on the basis of some learning programs (educational software) etc. [2]

Moreover, in the process of management and didactical planning activities, Microsoft Word and Excel programs are frequently used to draw up official documents, build databases, prepare statistical reports, elaborate some standardized forms etc.

In terms of particularly using, the presentation graphics software (such Power Point or Prezi), it is obvious the major help on creating project presentations, different didactic sequences, presentations on school activities etc. The basic elements of those applications are the *slide* or the *(lantern) slide*. Those slides can be projected directly on the monitor or the screen or saved as files. In fact, didactic presentations represent the universal and the most spread format in the educational community. Such presentations may contain both texts and diagrams, images, animations, audio files, video files etc. Practically, the presentations constitute attractive and useful learning materials, requiring minimal technical requirements, but also imposing some rules in the preparation of a presentation [3]:

• *Conception* - a *template* (pattern) is defined (from the very first slide) and is used throughout the presentation;

• *Number and structure of slides* - is limited (1-2 per minute), the ideas are mentioned in succession, key words and short sentences are used, a slide must not have too many words on it;

• *Characters* - a minimum 18 points size font is recommended, standard characters (Arial, Times, Verdana etc.) are used, different sizes for the main ideas, capitals are used only when necessary;

• *Colours* - are chosen so that they differentiate the background and the font, consolidating the logic of the structure;

• *Font* - simple, attractive light font is recommended, the same for (almost) the entire presentation;

• *Graphs and tables* - are easy to be understood, having to be accompanied by legends and explanations;

• *Orthography and grammar* - slides must be checked to make sure that there are no spelling mistakes, repeated words, grammar mistakes etc.;

• *Conclusions* - efficient conclusions are used (the audience usually remembers the last words of the presentation), a single slide for conclusions is typically used.

2. Problem Statement

The development of science and technology - and implicitly of the e-learning products - made the learning process advance more and more towards the development of ICT competences.

At international level, a series of relatively recent educational studies and policies, conducted worldwide, with regards to the key competences that students must have at the end of the mandatory period of schooling, claiming that it is required to include *the digital world* in education. To this end, one should mention the *Recommendation of the European Commission on Competences - the key to lifelong learning* (2006), which has explicit references to digital competences, implying confident and critical use of ICT for working, leisure and communication.

This document is completed by the strategy on *Common Framework for European Cooperation in Education and Formation (ET 2020),* in which the six priorities for 2016-2020 are structured: relevant and high quality skills and competences concerning the capacity to integrate professional, innovation, active citizenship and welfare (e.g. creativity, spirit of initiative and critical thinking); education which favours inclusion, equality, non-discrimination and promotion of civic competences (e.g. mutual understanding and democratic values); open and innovative education and professional development systems, including full integration of the digital era; strong support of trainers (e.g. improved recruitment, selection and formation processes, as well as continuous professional development); transparency and recognition of skills and qualifications with a view to facilitate learning and mobility of workforce (e.g. through the European Reference for Framework); durable investment (including exploration of the potential for the investment in Europe), performance and efficiency of education and professional development systems [4].

Including the digital world into education is even more necessary if it is taken into consideration that the access of the students to computers and internet grows exponentially.

Among the studies carried out in Romania with regards to introduction of didactic materials in digital format and digital textbooks in particular, important aspects were underlined by Constantin Cucoş (2013), who identified a series of positive aspects but also some limits as to introduction of digital textbooks in Romanian schools. His conclusion was clear: "we are aware that new technologies will reform both learning supports and basal accessing mechanisms of psychological nature", and that, as a consequence, "we will certainly see, from this point of view, *an*

anthropological turning point. The change will be huge, significant, yet it has to be accompanied - even challenged - by an appropriate preparation!" [5].

3. Research Questions/Aims of the research

It is the authors' intention, in this paper, to identify the students' opinions on the impact of using presentation graphics software and its impact on the quality of education/training. For this purpose, it was elaborated and applied a questionnaire on a representative sample of students of Valahia University Targoviste.

Through their responses to the questionnaire-based survey and interview-based survey, the students' perceptions were analysed in connection with the effects of the course and seminar activities which imply the use of presentation graphics software, in general, and educational presentations (mostly designed with Power Point), in particular, as teaching and learning resources.

Additionally, it was aimed to achieve a correlation between the information presented in the literature with the students' opinions, as direct beneficiaries, with regards to advantages and limits of the presentation graphics software.

4. Research Methods

The research method was based, mainly, on a questionnaire survey. The questionnaire was structured on 8 items of which 7 had multiple predetermined choices and one had an open answer.

The questionnaire was applied on a significant sample of students (more than 500), randomly selected, all of them being enrolled in different academic years, from different faculties and with different curricula, from Valahia University Targoviste.

The questionnaire was applied taking into account the students' consents, emphasizing on the confidentiality of the data gathered from them, and without violating the related ethics of the research activity. Prior to applying the questionnaire to the participants, there were presented to students all the aspects and the rights to participate or withdraw from the research process and the rights related to confidentiality and data processing.

The results were processed using statistical and mathematical methods and were correlated with qualitative analyses, following the discussions with students and which were meant to clarify issues.

5. Findings

When requested to offer their opinions on whether education establishments are equipped with multimedia/ICT means required to provide a modern quality education, in the context of a computerized contemporary society, the responses provided by the students, also structured from the perspective of their previous experience as high-school students, are oriented mainly in the middle (49%) and upper (38%) scale of assessment (figure 1). Nevertheless, there is a percentage of 13% who believe that the education establishments in Romania do not currently have the most technical and most computerized means, necessary for a qualitative education (e.g. Digital Textbooks and educational software).

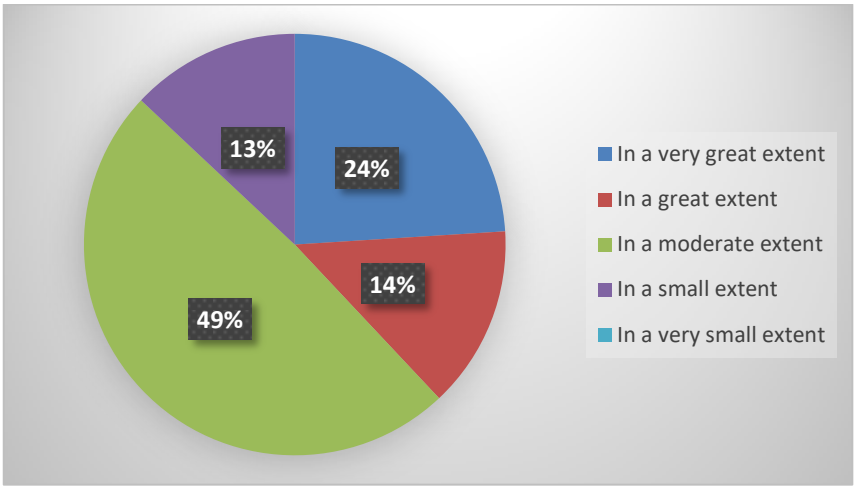


Fig. 1. Students' perception related to the extent to which the education establishments are equipped with multimedia/ICT means required for a modern qualitative education

With regards to training the teaching staff for the use of modern didactic multimedia/ICT means, the responses were more optimistic: 61% to a very large and large extent, 33 % to a moderate extent and only 6% to a lesser extent (figure 2). We consider that those answers may be justified by the great number of continuing education programmes, based on development of digital competences. According to the statistics carried out by the Continuing Education Department within the Ministry of National Education, approximate 60 continuing education programmes for this component were accredited between 2009 and 2013 [6].

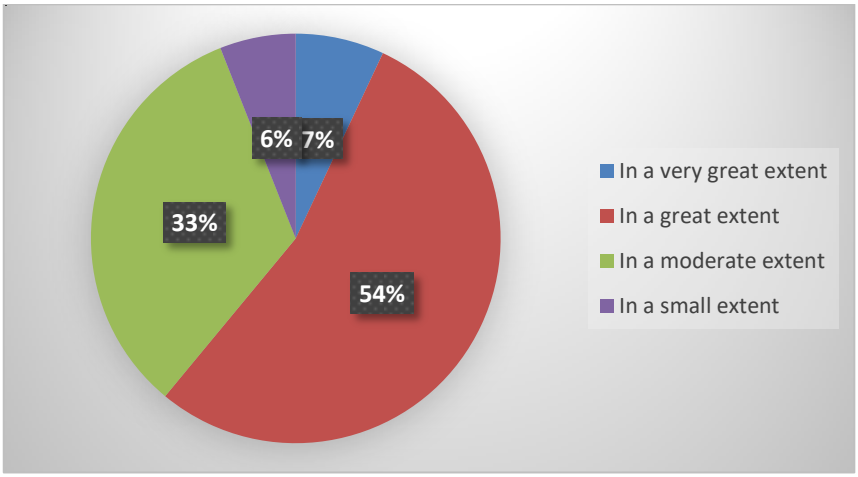


Fig. 2. Students' considerations related to the extent to which the teaching staff is prepared to use modern didactic multimedia/ICT means

To the question: "Do you think that the use of the presentation graphics software (PPT, Prezi etc.) is compulsory in the instructive-educative process?, the students responded that this is necessary to a very large extent (30%), to a large extent (44%), to a moderate extent (20%), to a lesser extent (4%) and to a very small extent (2%) (figure 3).

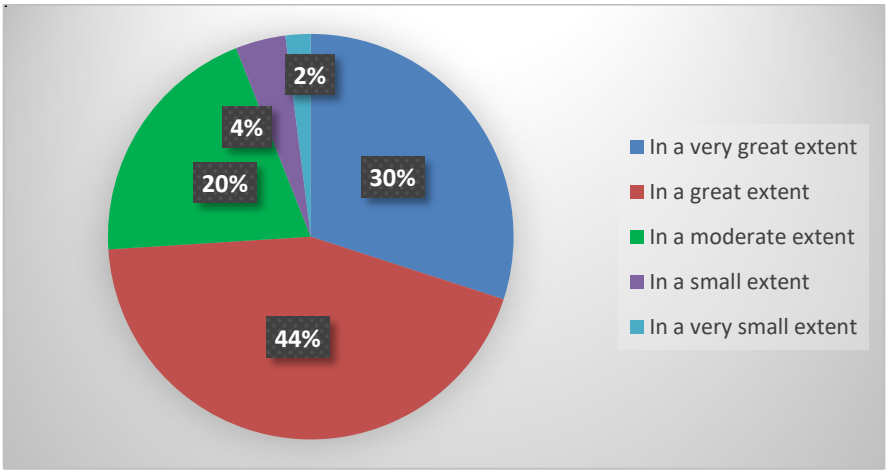


Fig. 3. Students' opinions related to the necessity of using presentation graphics software (PPT, Prezi etc.) in the instructive-educative process

As for the extent to which the information provided through presentation graphics software (PPT, Prezi etc.) seems to be more accessible compared to other methods of knowledge transmission, the students think that this applies to a very large extent (34%), a large extent (38%), a moderate extent (21%), a lesser extent (6%) and a very small extent (1%) (figure 4).

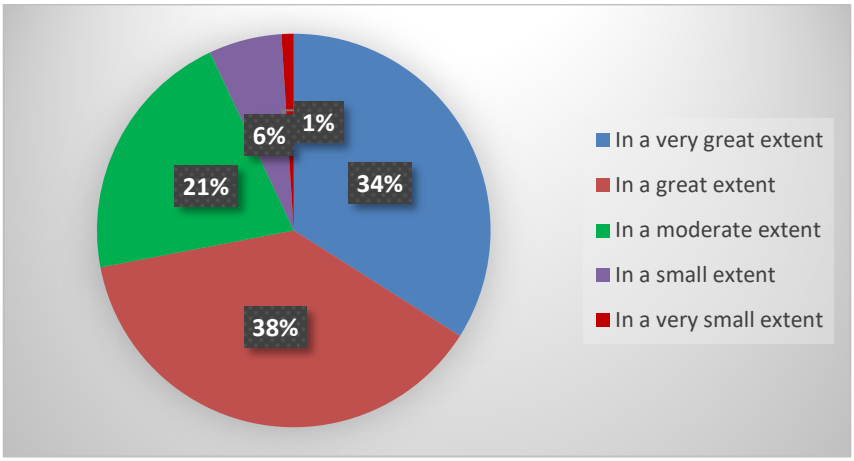


Fig. 4. Students' opinions related to the degree of accessibility of the information provided through presentation graphics software (PPT, Prezi etc.), compared to other methods of knowledge transmission

We consider that the high percentage of students who consider that it is necessary to use presentation graphics software (PPT, Prezi etc.) in the instructive-educative process (74% to a very large and large extent), correlated to the percentage almost as high of those who consider that the information is more accessible if transmitted through presentation graphics software (PPT, Prezi etc.), compared to other methods to transmit knowledge (72% to a very large and large extent), is justified by the young people's desire to keep up with the technological evolution, on the one hand, and by raising awareness on the formative/forming effects generated by the use of these means in the training process, on the other hand.

The advantages and the limits of using presentation graphics software (PPT, Prezi etc.) in education, as outlined following the application of the questionnaire and the discussions with students, are summarized in the table below, in relation to the importance attached by students (rank 1 - the largest importance; rank 5 - the smallest importance).

Table no. 1. Advantages and disadvantages of using presentation graphics software (PPT, Prezi etc.) in education:

Rank	Advantage	Disadvantage
1	They contribute to essentiality of the knowledge	The whole matter is too segmented and atomized
2	They permanently capture the pupils'/students' attention	They inhibit/limit the pupils'/students' interest in reading books
3	They facilitate the understanding of notions	Creative and divergent thinking are sometimes affected/limited
4	They reduce the time and effort required in learning	They affect health and interpersonal relations of face to face nature
5	They bring to pupils'/students' attention, facts impossible to reproduce otherwise in classrooms	In time, they generate a form of dependence on the virtual learning environment
6	They enhance the pupils'/students' motivation in the learning process	-
7	They facilitate interiorization of the information through concomitant stimulation of several senses (hearing and sight)	-

In terms of conditions to be fulfilled by the presentation graphics software (PPT, Prezi etc.) in order to produce formative effects at a high level, the questioned students identified the following:

- to make a synopsis of the most important and relevant information;
- to be schematized, without redundant information;
- to ensure a balance between the text and image;
- to have a strong visual impact;
- to have an interactive character;
- to include emotional messages in relation to the audience characteristics;
- to be completed with additional explanations and examples;

The last item of the questionnaire wanted to identify the general positive or negative opinion of the students on the using of the presentation graphics software (PPT, Prezi etc.) in the educational process, along with the arguments used when offering the response (figure 5).

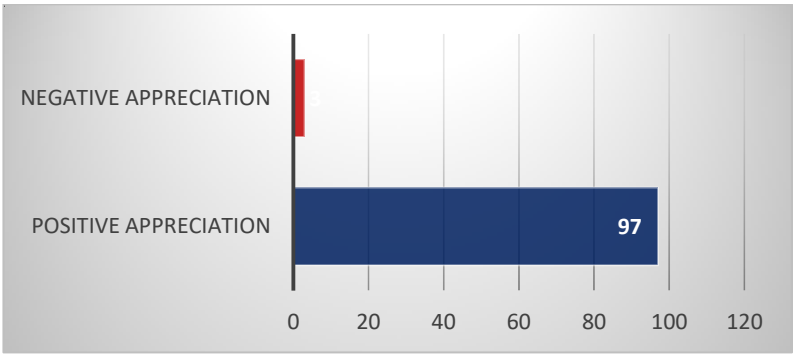


Fig. 5. General opinion of the students with regards to the using of presentation graphics software (PPT, Prezi etc.) in the educational process

The arguments on which the respondents' general positive opinion relies are as follows:

- the information is clearer, centred on basic schematic knowledge;
- they capture the pupils'/students' attention through the used graphics/animation;
- they have an interactive character and they are attractive;
- the time assigned to learning and teaching is reduced;
- they stimulate the reflection and the analysis.

In the category of arguments against the using of presentation graphics software (PPT, Prezi etc.) in the educational process, there can be mentioned:

- they limit the sphere of the knowledge;
- they determine lack of interest for reading and for individual study (in library).

6. Discussions

Although the research has been conducted involving a representative sample of students, the results could not be generalized for the entire education/training system. However, the data collected following this questionnaire-based survey, correlated with the ones gathered as a result of the interviews, highlights on a series of elements which support the formative valences of the presentation graphics software (PPT, Prezi etc.) in the educational process, in parallel with the identification of limits or even disadvantages of using them in the current educational practices. Consequently, we consider that the results are useful for several categories of

beneficiaries: teaching staff, students and parents, for a better understanding of what the phenomenon of computerizing contemporary education means.

7. Conclusions

A corroboration of the obtained results, with those provided by a series of articles in the area, leads us to conclude that the respondents have a realistic vision on using presentation graphics software in education, in general, and in the academic teaching, in particular. The respondents are aware of the fact that the contemporary education goes through a reforming process, which involves a modernization of the didactic strategies (in terms of methodology and organization forms). Another type of teacher/ professor-pupil/ student relation is implicitly configured - a relation with focuses on the active involvement of the trainee in the process of his or her own development/evolution.

8. Acknowledgement:

The authors of this paper declare, on their own responsibility, that the subjects who participated in the research have been informed related to the voluntary nature of their participation, the understanding of the received information and the fact that the withdrawal from the research process can be done at any time without any negative consequences on participants. The whole research respected the actual ethical standards and the participants expressed their consent to participate in the undertaken research.

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