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The Impact of Classroom Management Strategies on the Students' Academic Success in the Computer-Assisted Lesson

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Abstract— **The present study aims to highlight that there is a direct connection between the classroom management strategies involved in the computer-assisted lesson and students' success in retaining information and building learning skills and competences. One of the roles that a teacher must assume in order to improve the instructional process is that of a classroom manager. As long as teaching is no longer understood as information transfer, teachers must learn efficient approaches of the contemporary multileveled instructional process. The aspects discussed in this paper regard the role of an active teacher, the student-centred instruction, building long term valid skills and competences, increasing students' awareness and participation, managing discipline as a source of responsibilization, developing a positive teacher-student relationship, acquiring and using scientifically developed teaching strategies in the technology-aided classroom.**

Keywords— classroom management; cognitive theory; computer-assisted lesson; multimedia learning.

I. INTRODUCTION

Today's modern and dynamic society is integrally based on high technologies which develop at a very fast pace, requiring a contemporary profile of adaptability and flexibility based on reliable skills and competences. This phenomenon should lead to a deep reformation of the educational approach in schools, by highlighting the importance of classroom management strategies for achieving the objectives of each learning activity. The concept of active learning should be correlated to the one of an active teacher because today the transfer of knowledge from a teacher as a central unit to students as receivers has become an inefficient way of practicing teaching. The problem about knowledge is that it changes, expand and it may even lose its relevance in the future. That is why the main goal of an instructional activity should not be knowledge, but building knowledge discovery skills. Therefore a teacher becomes active when he permanently searches for efficient strategies in making the students creatively and critically think, in guiding them to work in teams, in directing them to discover and define concepts, and in building motivation by raising students' self-esteem through ensuring their learning success.

II. PROBLEMATIC ASPECTS REGARDING THE RELATION BETWEEN EDUCATION AND DIGITAL SOCIETY

An important aspect related to a society growing on new technology is represented by the implementation of multimedia teaching in schools. Computer-based multimedia teaching has two major benefits: it provides information from different sources, increasing the degree of learning success, and it builds skills and competences in using digital technology as a learning tool. Nowadays children have large access to computers, tablets, and smartphones, perceived mainly as entertainment devices. Their experience in using these gadgets is so visually direct, strong and rewarding that the teaching based on speaking and writing loses its impact and becomes uninteresting and therefore it does not address motivation. Thus, using computers, projectors or interactive whiteboards becomes necessary when addressing the present generation of students whose thinking and learning patterns have been strongly determined by the presence of internet in their lives. When talking about increasing learning motivation or about learning success, school cannot ignore the necessity of implementing computers connected to internet in each classroom.

The main issue regarding the technology-assisted lessons is not the financial effort involved by furnishing schools with the necessary equipment. The major aspects are related to an efficient management of the computer assisted instructional activities. There are two relatively new dimensions of the present requirements for a modern teaching: student-centred instruction and the use of computing technology in the classroom. Both dimensions ask for a dramatic change in understanding teacher's role in the classroom. The academic achievements of today's generation of students depend on the reality and consistency of such a change. This change of mentality should be associated with the acquisitions of classroom management strategies specific to the problems the computer-assisted classroom may raise.

An effective teaching-learning process cannot take place in the context of a poor classroom management. This statement is supported by recent studies (S.Paul Wright, Sandra Horn, William Sanders, 1997) which revealed that the

most important factor directly influencing learning is the teacher, which means that any procedure to optimize school performance should aim to educate teacher effectiveness in the classroom.

The fact that the teacher influences student's performance is obvious, yet the dynamics of the way in which the teacher can produce such an effect on the individual and collective learning is not as clear. It must be underlined that an effective teacher performs several functions related to his three major roles: a correct choice of teaching strategies, the adaptation to the specific classroom curriculum to facilitate learning, and the effective use of classroom management techniques. While the first two roles are not very different from the traditional practice, the last one is more connected to the dramatic changes in expectation both on the part of students and on the part of society.

When approaching student-centred teaching, school must not overlook students' expectations. Instruction cannot become motivational if it does not address students' universe of thinking and living. The reality of the current generation of students is large the presence of digital technologies in their daily activities. The age since children start having their own mobile phone, a tablet or a computer connected to Internet or wireless network is constantly decreasing. Therefore they are used to get information visually, through images. It should be taken into account that these images are made to have a strong impact through resolution, effects, dynamic and realism. Also the images are connected to some fashionable requirements which give them extra value. There are surely psychological effects of this phenomenon which influence the way their attention, memory, thinking function. These effects have changed the students' horizon of expectations and therefore the implementation of multimedia learning assisted by digital technology has become mandatory.

III. Rules And Procedures For The New Technology-Aided Instructional Context

This new instructional context requires well-defined classroom management strategies having a scientific foundation. Teachers cannot be imaginative or inspired when managing a lesson by using computer technology. This instructional environment must be firmly regulated by procedures. One of the most important aspects of classroom management involves **establishing and implementing rules and procedures**. General rules set expectations and standards such as "Respect the others". The procedures refer to specific standards of behavior, such as how to participate in the class discussions. The research on rules and procedures highlights their importance to the effective learning in the classroom. Their effectiveness is however conditioned on student's participation in determining, understanding and applying these rules and procedures. Imposed rules are not as efficient as those explained and negotiated, and even written up in a contract between student and teacher. The implementation of negotiated regulations has a positive influence not only on students' behavior but also on their academic performance. Depending on students' age, the rules should be no more that 5-10 and they should be displayed in a visible place. In the specific context of the computer-assisted classroom, rules should refer to the use of technology in a correct and fair way. The digital technology should be defined as a research and learning tool. No other uses must be accepted in school. When they are in front of a computer connected to internet, children and teenagers have the tendency to maintain their habits of using computer as entertaining and communication medium. In order to determine them to associate the computer in school with an educational tool, no deviation from this use should be accepted. This way a new behavior related to the environment will be educated in students with benefits for their acceptance and opening to the computer-assisted instruction.

A. Disciplinary Intervention

Any breach of rules and procedures should have immediate consequences in order to educate correct classroom behaviour. Yet, there is a trend regarding disciplinary measures as being ineffective and even damaging for the acquisition and development of appropriate behaviour. Partly, this view is correct when referring to inappropriate use of disciplinary strategies based solely on punishment as it is frustrating. However, research supports the need for intervention to maintain discipline through a balanced approach of a variety of disciplinary techniques. A study based on meta-analysis, led by David Quiroz and Scott Stage, in 1997, including 99 trials, 200 experimental comparisons and over 5000 students, concluded that disciplinary action results in a decrease of up to 80% of the disrupting and inappropriate behaviour in the American public schools. Studies have identified the following categories of disciplinary strategies: the reward, the punishment, and the combination reward - punishment. The reward involves recompense, praise, appreciation of good behaviour or absence of negative behaviour. Punishment implies negative consequences for inappropriate behaviour. The last category involves rewarding appropriate behaviour and punishment of inadequacy. The research shows that the maximum efficiency combines reward and punishment which create an environment that accentuates the distinction between appropriate and inappropriate behaviours by constant feedback. Identifying a balance between reward and punishment is advisable to increase discipline in schools. It is recommendable to discuss, negotiate and display in a visible place the concrete way of reward and punishment. The two disciplinary consequences must be ethical and moderate with the only intention of giving a feedback without humiliating or substituting reward for the goal of the educational process. The use of technology in school has specific rules preventing misuse of computer and internet which must be explained to students and displayed on a visible board. The disciplinary intervention should also refer to the privilege of having access to technology as students are sensitive to these limitations or rewards.

B. The Student-Teacher Relationship

Another important aspect of classroom management concerns the teacher-student relationship. Specialized articles show that if a teacher has a good relationship with her students, they are more open to accept the rules, procedures and disciplinary interventions. Theo Wubbles and colleagues conducted several fundamental studies to identify the dynamics of student-teacher relationship, revealing that there

are two dimensions defining the student-teacher interaction. The identified dimensions are: Influence (Domination-Cooperation) and Proximity (Opposition-Cooperation).

Domination is characterized by clarity of purpose and strong guidance. Cooperation involves interest in the others' needs and opinions and the desire to work as a team member. The research has determined that the correct combination for a positive teacher-student relationship is between the moderate to strong Domination (but not extreme) and moderate to strong Cooperation. In short, a teacher must have the ability to establish and maintain control standards and to be firm, but open in attitude, empathizing with students, listening to their needs and understanding their world.

IV. Clasroom Management Strategies

A. *Classroom Management Issues Concerning Students' Active Contact With The Computer*

Integrating technology in the classroom can facilitate learning and provide effective solutions for many educational issues. By using computer-based technology as a resource, students are encouraged to explore their own interests and actively contribute to the learning process, becoming able to solve authentic problems.

Currently, schools are trying to create attractive educational opportunities for all students to develop indispensable long term skills and knowledge. Investing in introducing information technology in schools supports the idea of student-centred learning as well as the effort of updating the instructional methods to the current and future requirements of society. Integrating technology in the classroom can be a solution, but raises at the same time, a number of problems.

Firstly, there are the problems related to the new environment of a classroom equipped with computer technology. The classroom space management changes significantly under these circumstances. The learning environment is no more determined by frontal teaching in which the teacher is actively engaged in the class and the student is placed at his desk, having a passive listener position. The student's attention is also directed to the computer. This involves a significant modification in what students perceive to be his source of information. It is important to keep in mind that a computer is more stimulating and rewarding due to the following factors: it provides dynamic visual and audio information and it can be directly controlled by the student. The presence of a new inexhaustible source of information in the classroom transforms teacher in a facilitator and a manager who organizes the classroom activities and delegates tasks to students, controlling their achievement. In 2001 Cambourne underlined that the new teacher's role is to identify tasks to facilitate learning (2001).

The management of a computer aided lesson is determined by the number of computers in the classroom. Using a single computer can be effective only if the images can be projected on a screen large enough and positioned so as to be visible to all students in the class. In this way eloquent, diverse and attractive images can be used to illustrate the lesson content using PowerPoint presentations, simulations, videos, and documentaries. Yet, in this situation the computer has the same central role of a source of information while the student is still rather passive. His interest in lesson and understanding of its content does increase, but this only improves the level of knowledge transfer without building skills and competences. This situation is changed when the classroom is equipped with a minimum of three computers, as studies suggest, and students are asked to work in teams. Such an organization leads to a more complex learning experience. The student receives tasks and he is demanded to find solutions by working in team and by using digital technology as an instructional tool. The benefits of this learning position are immense if well-managed. There are some problems to be solved before starting the lesson: the team structure, the rotation of students at the computer, the role of each student, the rules of using the computer and the internet.

In order to make up a team, students should be selected according to their competences and given roles consequently: the computer expert, the facilitator, the coach, and the responsible with the documents. The students should be aware of the responsibilities involved by their role. This way they become more conscious of what participation and managing of learning means, which builds skills for the future when learning becomes gradually a self-directed process. Then, the student's rotation at the computer desk should be regulated. Yet, students must accept this rule as fair and they should be given the possibility to negotiate its application with the team-mates, which increases communication and listening skills. Teachers have also to work on students' understanding of their responsibility towards his mates. If somebody fails in fulfilling his task the whole team will be affected. Such a lesson builds social awareness, which is important in the formation of students as part of a group, especially that individualism and social isolation due to the intense use of computers as entertaining means have become an increasing phenomenon.

Making up teams and task assignment request an attentive project management on the part of the teacher who should periodically check the development of the project by giving the team deadlines to respect. This way, besides learning, students acquire efficient project development skills. If the teacher efficiently manages a computer-based lesson, he also provides his students models of how to organize and conduct a successful activity. The students should be guided to identify the necessary stages of their work, how to efficiently use resources, how to solve problems and make decisions, how to manage time and how to stay focus on goals and objectives. This will be a valuable know-how in the present and future society in which efficient management is the key of professional success. The important thing is that students must realize that their role is not to simply receive information, but to be active part of a process in which information is searched, checked, integrated in structures and capitalized by using digital technology as a tool.

Secondly, the computer-assisted classroom in which students have direct access to internet brings up the issue of internet security. The potential risks regard accessing of inappropriate material, improper use of the school's computer

resources (file deletion, deterioration of school server, email misuse, unauthorized on other networks, changing settings and configuration files on the school computers), communication with strangers (students must learn to withhold personal information on the Internet, not to meet people they communicate with on the Internet). Therefore it is mandatory that students should be supervised when they are online. Yet, more important is to help students understand and avoid these risks by discussing them in the classroom. This way they will be more willing to accept that there are school-level Internet usage policies which are not negotiable. The involvement of parents in establishing these rules should be made visible by a school-parent-student contract. While software security, as well as monitoring and supervision of the use of the computer connected to the Internet are necessary, they have the same consequences of placing the student in a passive position. Students should be guided to understand the risks of internet misusing in order to be able to use the internet correctly in non-controlled contexts.

B. Classroom Management Issues Concerning Students' Passive Contact With The Computer

In most circumstances, the lesson is based on a single computer used to illustrate the content of a lesson designed to use multimedia resources. Multimedia involves the transmission of a message or information through a multisensory interactive presentation that combines text with images, sounds, animations and videos. Multimedia has the potential to expand the amount of information available through explanations, links to various resources, simulations, illustration, photographs and other interactive activities. As a consequence of the implementation in schools of diverse multimedia devices in the educational process, the new concept of multimedia learning has arisen, defined by the cognitive theory of Richard Mayer. Mayer conducted a comparative research on the methods of using multimedia in teaching and concluded that students who received information from multimedia source (visual message and auditory message) learned better than students who benefited from a single traditional source (auditory message).

Mayer has established the principles of cognitive theory of multimediabased learning that teachers should take into account when planning a computer-assisted lesson: the multimedia principle (use words and images rather than words alone); the contiguity principle (place corresponding words and images near each other and simultaneously); the modality principle (use narration and animation rather than text and animation); redundancy principle (avoid redundant material; do not add text to narration and animation); individual differences principle (individuals with low prior content knowledge and individuals with high spatial skills benefit most from animation and narration-presented materials). Other researchers have pursued similar experimental approaches. Kalyuga,Chandler, and Sweller (1999) also concluded that the working memory becomes overloaded if the visual system must process printed text and images (split attention effect). They found better comprehension when images were presented with auditory explanations. Similar research carried on by Lewandowski and Kobus (1993), or Leahy, Chandler, and Sweller (2003) reported identical conclusions. This represents the attestation of the fact that the instructional process should be scientifically based especially when using teaching methods involving technological aids to apply the rather new concept of multimedia learning. The success of multimedia computer-assisted instruction depends on how teacher manages to balance the amount of information and interaction that the students' working memory can process simultaneously in order not to under-load or overload it. The teacher should take into account that all information must be processed before meaningful learning may continue. Paradoxically, adding interesting material can hurt learning. During the process of information transfer the teacher should avoid using unnecessary texts, graphics or sounds as they actually distract students. These principles are to be applied when students are in the passive position of receiving information from a frontal multimedia source represented by the teacher using technology in order deliver his presentation. They help students keep focus and retain information at an optimal degree.

V. CONCLUSIONS

The aim of this paper is to underline that computer-aided lesson are efficient and valuable, if teachers use scientifically based classroom management strategies. If the teacher manages to apply a set of interconnected strategies addressing both the disciplinary and cognitive aspects of the learning process developed in the specific technology assisted environment, the instructional process can be successful. This condition is not a matter of creativity or inspiration and it cannot be met empirically. Schools should invest not only in equipping classrooms with modern computer technologies, but also in the teachers' professional development to ensure valuable and authentic instruction. Students may considerably benefit from the computer-assisted lesson when winning teaching strategies are used with the purpose of transferring information and building skills. Nevertheless, if technologically based lessons are not correctly managed, the instruction fails with the outcome that students will miss building up skills and competences in using technology as an educational tool with negative impact on their professional future.

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