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Multimedia Production as an Upgrade of ICT in Elementary Schools

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Abstract: Numerous classic multimedia activities already exist in elementary schools, alongside regular classes which are more or less technically supported and offer many possibilities for a sensible introduction of modern ICT (information-communication technology) into schools. By using modern technologies, it is possible to upgrade multimedia activities, enrich and at the same time raise work quality and efficiency in schools, increase knowledge, skills and competences in an unforced way, and increase the competitiveness of teachers and students with modern information communication equipment and technologies. By introducing modern technologies to school work, a modern organisation of school and class activities is enabled, technical culture improves, parents and experts from the environment are more involved as mentors to students and assistants to teachers. Realisation of students' ideas and projects is enabled on different projects where the students can express various forms of talent, as numerous possibilities for developing entrepreneur thinking will open. Schools acquire multimedia material which can enhance the learning process, archives, activities, school image, and website; they connect to local media and can cooperate in international school web projects, improve their recognition and competitiveness, and increase the chances of acquiring additional resources for their work.

Key words: Elementary education, media in education, multimedia production, ICT.

1. Introduction

The purpose of this article is to show how multimedia production can be sensibly and rationally, organisationally and contextually included in the work of a school, how it can upgrade classical activities which have already been successfully used in elementary schools and how it can also enrich the work of existing multimedia activity. This increases the school's appeal, the motivation of students and mentors, and the quality of the educational process. In this way, the work and life of a school can be modernized—by the principle "do not allow new things to destroy the old ones, but rather to upgrade them".

This article attempts to focus on the needs and possibilities modern technology offers to elementary schools in the field of multimedia production, along with the demands and problems which (may) occur. The author wants to encourage principals, who are crucial for the planning and implementation of the vision of the school as well as for the implementation of projects, to set a long-term vision of the school together with parent councils and local communities where multimedia production will be suitably placed. Schools that will implement the multimedia production system with the use and promotion of products will be at least one generation ahead of schools that are just struggling with e-informing and digitalization, and a historic era ahead of schools that lack even that. In 2013, more than 50% of schools in the EU belonged to the latter [1]. More modern approach will surely increase students' motivation for work and studying, which will enable schools to achieve better learning results.

Presented are possible organizational forms and

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connections or inclusions of multimedia production in the elementary school education process, with numerous positive changes which can occur in various segments of the life and work of a school. Singhal and Rogers [2] think that education should be more active and that quality educational multimedia products should be provided, unlike the current practice where existing products meet educational needs. More studies investigate how different multimedia materials affect learning performance and the emotions of learners with visual and verbal cognitive styles. Experimental results show that video-based multimedia material generates the best learning performance and most positive emotion for verbalizers. Moreover, dynamic multimedia materials containing video and animation are more appropriate for visualizers than static multimedia materials containing text and image [3].

2. Basic Information about Multimedia Production in Elementary Schools

Multimedia production comprises of several material products and services which are based on two or more media elements. An overview of the fields, products and services shows that multimedia products are mostly present and used every day, within the school's curriculum and work (use of internet, presentations—slides, AV products, animations, demonstrations and simulations of attempts, information panels, animated displays of learning contents, electronic boards, education platform with web classrooms, digital literature, web portals and networks, smart house, etc.), as in many additional activities where mentors and students can work in fields that are of special interest to them, express their talents, show their skills and products, etc..

In Ref. [4], authors have analyzed the situation of and potential for multimedia production in 66 elementary schools in Slovenia, with 26,400 students.

Research shows that modern technologies are used more in extracurricular activities than in classes. Extracurricular activities which can serve as a basis for multimedia production are photography, cinema, creative writing, art, literature, clay modelling, design, movies, multimedia, music, journalism, programming, computers, drawing, technical and 3D visualization.

Students in elementary schools also have the possibility to choose optional subjects, among which some can serve as a basis for multimedia production, namely music and the media, information literacy, art, literary club, multimedia, computer networks, computers—word processing, rhetoric, school journalism, media education—radio and TV [4].

Many activities and products in these subjects are classical multimedia activities (the school newspaper, exhibitions, cultural events, sports events, etc.), and they are often supported with basic information communication and multimedia technology (newspaper and poster design, execution of celebrations and events—sound, lighting, preparing scenes), monitoring and presentation of events (recording, archiving), video conferences. Web newspaper, the school radio and TV, cooperation with local media etc. are also included in these activities [4].

Of course, the youth also spends a lot of time using modern technology outside of school or school related subjects. It is mostly through social media or the very popular vlogging or video blogging [5] that a certain message is sent online (often on YouTube) and responses are desired. It is a so-called participatory activity (a form of participatory culture) which is available to almost anyone [6].

3. The Importance of Multimedia Production

Multimedia production, (multi)media literacy and information literacy are closely related and mutually dependent on advanced technology [7, 8]. At the same time different interactions and processes of accepting, denying and use of multimedia technology emerge between users and technology, there are also many

exclusions and lack of access to modern types of education, etc.. Only active monitoring and critical use of new technologies ensures equal and rational inclusion in the global, competitive, and at the same time cooperative world [9].

Multimedia production also uses modern methods of planning and execution, project and team work, it uses and prepares instructions, demands and at the same time enables technical education and qualification, develops the linguistic and communication skills of students. This issue is discussed in Ref. [10]. The article describes the experience with 14-year old students who were preparing mini-documentaries in their local environment. They learned all the phases, from the idea to the assessment of the final product and analyzed individual phases from different aspects. The findings are as follows:

"As seen here, the audio-visual content produced, performed and negotiated by the teenagers can only ever be a partial, though important, element in understanding their relations with the spaces and places of their everyday. Further, while such methods may facilitate a certain amount of self-expression, they also reproduce the dominant discourses of individual and neoliberal agency that often mask, rather than elucidate the power relations at play. Finally, such content is also part of an ongoing negotiation, rather than an ultimate final conclusion, and to mistake it for the latter is not only to misrepresent such data but also to reproduce the problematic correlation of activity with a unique moment of generative agency." [10].

As multimedia production is based on a good idea and content, mentors have many chances to encourage the youth to be creative and develop linguistic and other skills in various fields and subjects. Examples are upgrading the classic school newspaper with an interactive web newspaper, upgrading school celebrations with visual and sound effects, recording or transmitting via web, preparation of multimedia interactive seminar papers and materials, school presentation on a mobile device application, etc..

It is very important that students and mentors work on practical and specific examples and projects from school, family and local environment, as this is how most ideas and incentives develop, as a consequence of new desires, demands, needs and possibilities.

Educational institutions can be linked into networks and systems on several levels and in several areas, which offers numerous and diverse activities for teachers and students. For sure, the international cooperation of schools on projects for the youth and mentors has to be mentioned here.

4. Positive Effects of Multimedia Production in the Teaching Process and School Organization

Preparation of different multimedia products has numerous pedagogic, didactic and practical advantages and values, such as:

- Work in this field can start very early and is suitable for all age groups, who are as a rule also connected through multimedia production;
- It requires and enables the use of new technologies, team work and project approach;
- Moving from browsing, turning pages, writing and playing to search and development of ideas, preparation of project initiatives, preparation and use of technologies and tools for production, etc.;
- Most of the ideas can be realized (event, exhibition, film, AV product, website, photo book, animation, e-literature, etc.), it is possible to proceed all phases of production, from the very idea to a publicly publishable product;
- Multimedia production develops new field for creative processes, it encourages development and language use (native and foreign), public performance; it requires conceiving and planning, together with knowledge, skills and competences for the preparation of innovative, topical and interesting products and services;

• Implementation of multimedia projects also requires organisational and practical work, as well as preparation of objects, scene, costumes, sketches and drawings, materials. Such products are useful for school work; they can be presented to a wider community and can represent an important information and promotion material for the school.

The introduction of multimedia production can bring increase the role of public television with shows that can be used in the education process and a more planned creation of such shows will be possible. Wajcman and Jones [11] have researched the connection between technology and media communication and have found important changes in recent years: convergent ubiquity and mobility are givens in contemporary communications. Similarly prominent is the sense that the boundaries between digital media and everyday life are dissolving.

At the same time, with the development of generally accessible ICT (information-communication technology) and equipment, the attitude towards science and technology is also changing. There is a democratization of techno-science, and the field of product and services usability is moving away from technological determinism [12].

Great attention is being paid to schools, teachers and the youth who will not be able to follow the use of modern technologies and work methods because of various reasons, also material ones, and will thus be excluded on a local and even more on a global work and education market. Klein [13] presents an example of a fun TV programme which can have an important social role because of its distinctiveness and can be used to affect different groups, providing them with various contents in a more interesting an accessible manner. The article is particularly focused on examples of shows for immigrants, people with special needs and shows which discuss criminal activities against children.

An interesting fact is that there are big differences among schools in the same country or even in the same city in terms of the use of modern technologies and consequently in other fields, despite the fact that the basic programme is the same; the influence of the local community, companies, and the interest and investment of parents, however, is very important.

It is important for multimedia production that around 70% of elementary schools in Slovenia have at least one of the activities where public appearances, along with the interest and need for technical support, media promotion and monitoring, are common (choirs, drama clubs, musical ensembles, etc.).

Three or more activities (as a sort of minimum which classifies a school as having the basics for multimedia production) were determined for 58% schools in Slovenia. Around 20% of schools have photo and video activities (as one of the important basis of this activity); around 10% are very good in this field (with five or more activities), and none of the schools provide all activities from this field [4].

5. Specific Tasks for Schools during the Introduction of Multimedia Production

Introducing multimedia production to schools is contingent on certain requirements and tasks.

Schools must have:

• modern doctrine in relation to their vision, strategy and types of management;

• a principal who accepts and upgrades the vision of the school and believes that this is an excellent programme for the school, useful for students and teachers, and a great competitive opportunity in numerous fields;

• a team of teachers and experts which is willing to switch to modern work methods with the help of education and additional qualification;

• support in the local political and economic community and from parents who must decide on super standard equipment, financing, as well as professional, contextual and organisational assistance to the school.

Together with parents and the local authority,

schools must prepare a doctrine and a strategy, based on their vision, on how to use the introduction of multimedia production in schools to create a modern, international and competitive school within three to five years, which will then be able to adapt to progress and influence it as well, while still preserving traditional and local values.

For multimedia activity and production to be successful, the school must provide:

- a thorough education and qualification of their teachers so that they become contemporary, e-, digital and multimedia competent teacher, who are capable of guiding the youth through modern knowledge and being mentors for creating specific products and services which can then be used for school work and will enrich the school's general knowledge and literature groundwork;
- a fully equipped multimedia centre with (minor) studios and premises with equipment for preparation, execution, recording and processing materials. A classroom or a hall can also be occasionally transformed into a studio;
- an event room at school or at local cultural institutions;
- a quality interactive website with links to various portals where designers can publish their work;
- intranet with an e-platform and educational materials;
- availability of several activities throughout the year which are organized, accompanied by the media that are also presenting the products (important events—beginning and end of the school year, celebrations, exhibitions and other cultural events, sporting events, etc.);
- constant professional tech support for execution, setting up and using equipment—a (multi)media production engineer; and mentors for contextual, visual and organisational preparation. They can be teachers from the school or primarily workers from local multimedia and cultural institutions, museums, associations, organisations, etc.

6. Programmes and Projects for the Introduction of Modern Technologies to Schools

(Multi)media literacy and the related use and production of multimedia products is a very important part of local and European policies, and is a part of numerous directives and recommendations; it will also be supported in the 2014 to 2020 financing programmes. The most important of these are the Commission Recommendation on media literacy in the digital environment [14], Horizon 2020 [15] or media and information literacy of UNESCO [8].

The problems of multimedia production are mentioned in the AVMS—audivovisual media services directive which is a leading regulatory body, followed by programmes, iniciatives and projects on the EU level, such as media programme—media literacy, digital agenda for Europe—A Europe 2020 initiative, safer internet programmes, etc..

In 2013, the European Commission presented the action plan Open Education Europa [16] for increasing the number of innovations and digital skills in schools since digital skills will soon be required in every workplace. There will be opportunities for innovation in school within this programme, especially for spreading the use of free-accessible learning sources and for improving the ICT structure. School managements will have to become acquainted with these programmes and help provided with their introduction to schools. Activities related to the action plan Open Education will be financed with the support of the new EU Erasmus+ program [17], and the EU structural funds.

7. Conclusion

The article displays the possibilities and the importance of introducing multimedia production to elementary schools, particularly from the aspect of increasing appeal, modernity and consequently competitiveness of the school and its students. The introduction of modern technologies and different

work methods requires changes on all levels of the school's operation, and mostly the possibility of following and sensibly, rationally introducing the novelties and requirements within the environment.

The challenges and opportunities, offered by the introduction of modern multimedia production in the educational system, are also shown. Multimedia production is present in the everyday work and life of students in several forms, but it is not being used to its full potential as an excellent means of increasing the appeal and efficiency of classes, as well as acquiring knowledge, skills and specific competences of teachers and students. Researches show that almost all participants want this type of work in schools and that some of the schools are very successful in some of the segments, mostly where they can enlist the help of qualified and motivated mentors and the local environment. The lack of mentors who are qualified for modern technologies is a big problem, as they were not trained in these technologies during their studies.

The youth are motivated to work with modern technologies and want to show their work and compare it to others. Many activities enable students to work creatively and satisfy their interests in different fields, and the mentors to provide quality guidance to youth.

Authors [4] have also determined that most schools have certain elements of multimedia production, but less than 10% are satisfactorily equipped, and none of the schools is optimally prepared for multimedia production. It is important for the development of the field that the present programme of elementary schools already has the necessary setting for building a modern school of which multimedia production is an important integral part, as the enrolment in optional subjects can be increased, extracurricular activities can be added, and schools can join different projects, contests and competitions.

The appropriate vision and a modern concept of school operation are crucial for the development of multimedia production in a school; the education and qualification of teachers and external mentors is a prerequisite, along with the regular cooperation of a technical expert who is crucial for the operation of the elementary school multimedia centre. Engineers of (multi)media production have been qualified in the past years, and there are additional programmes and certificates for teachers and for all those who want to obtain additional skills for successful work in multimedia production in schools. An inclusion of external mentors as part-time employees of the school is of essence, since schoolteachers limit the school to specific subjects which are already a part of the regular programme.

The equipment and media for product presentation are generally universally accessible, and this enables, even requires, schools to provide different activities and tasks which will guarantee modern, educated and qualified citizens. Aspirations, visions, desires and determination are crucial, followed by studying, qualifications, and hard work.

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