INFO-1030 UDK: 37:659.3:007
Primljeno / Received: 2008-02-10 Author Review/Pregledni rad

MODERN MEDIA IN EDUCATION – EXAMPLE OF DIDACTIC MOVIE PRODUCTION

MODERNI MEDIJI U OBRAZOVANJU – PRIMJER IZRADE DIDAKTIČKIH FILMOVA

Waldemar Lib
Institute of Technology, University of Rzeszow, Rzeszow, Poland
Institut za tehnologiju, Sveučilište u Rzeszowu, Rzeszow, Poljska

A b s t r a c t

Properly realised didactic movie can make shorter student's time of perception at about 10 – 40%. Nowadays importance of didactic movie grows constantly, presentation of experiment executable in specialist scientific laboratories, discoveries and history of invention is possible only in movies. Movie in the form of short sequence is use more and more generally in multimedia didactic programs.

S a ž e t a k

Uspješan didaktički film može utjecati na percepciju učenika oko 10-40 %. Danas, utjecaj didaktičkih filmova neprestano raste, prikazuju se istraživanja u znanstvenim laboratorijima, otkrića I povijest izuma koju je moguće prikazati samo u filmu. Film u obliku kratkih sekvenci se sve više koristi u multimedijskim didaktičkim programima.

Introduction

The curriculum in its present form points out the necessity of media and media materials use, in order to gain multilateral learning the world and the surrounding reality. Indeed, it is not only them that decide on didactic-educational effectiveness of a lesson – however, when chosen properly and skilfully implemented, they do have an influence on the achieved results.

Movie is one of the didactic means used in the education process. It seems that with the course of time its meaning as a supporting measure of teaching has not only diminished but it is constantly rising. Nowadays more and more experiments, scientific discoveries, technological courses and operations are being filmed and then made available to the broad audience - students.

Among the large selection of TV stations more and more of them offer different kinds of science, popular science and research films. There are also theme stations presenting only films from the abovementioned categories that can be successfully used by teachers when working with their students. Development of video technologies and growing public availability to the equipment allowing for individual recording of sound and images in the form of a movie (VHS, VHS-C, Video8, SVHS, SVHS-C, Hi-8, DV and Mini DV video cameras, digital cameras with possibility to record video sequences), for editing them (video recorders with dubbing function, video mixers, computers with suitable equipment and software etc.) and public access to equipment allowing for replaying recorded and previously edited movies: video recorders, DVD players, suitably equipped computers allowing for immediate jump to the needed fragments (scenes) of a movie and replaying them for an indefinite number of times. All these factors encourage teachers to produce a didactic movie on their own. Short movie studies in the form of video sequences are also commonly used in didactic multimedia computer programmes – both in commercial, as well as in the ones created by teachers for their own needs.

1. Description of a didactic movie

Movies take a special place among many audio-visual means and materials used in teaching and educating, because they allow for limitless transferring and receiving of information. They are components of the teaching and learning processes that support working methods which simplify achieving lesson's aims. However, it does not mean that they have to decrease students' intellectual efforts, shorten or simplify way of reaching the goal – on the contrary, they should enrich the

didactic process, enhance the number of factors influencing student's awareness and imagination – in this way enhancing one's work effectiveness. A movie provides learners with pieces of information through different communication chanels, it gives a possibility to influence many emotional and receiving centres.

Accurate movie usage in pedagogical work depends on knowing the type of the movie, its function and structure and the methods used in school work.

A didactic movie is one of the scientific movie genre, thus it is often called a „scientific-didactic movie". The term "didactics" applies to the teaching and learning process while term "science" includes research process, its results and teaching about these results – so everything, that is in the scope of didactics. Didactic movie is always a component of some defined didactic process and does not constitute an individual whole as a work. It has a defined theme range and in practical implementation is related to the teacher's or lecturer's teaching methods. It is a work designed for the purposes of conveying information and skills in organized ways, i.e. in schools at every level, during courses etc. Its content is customized to the given teaching programme. It can be a programme used in primary school, secondary school, high school or college. The pace of knowledge transfer and the way of movie exposure are adjusted to the perceptive abilities of the movie's recipient. Movie structure is conducive in an optimal way to absorb its content and to teach recipients (learners) cognitive and emotional-motivational processes.

It can be ascertained that didactic movie is determined by the following factors:

Thematic range (teaching programme),

Teaching goal,

Recipients' level (teaching level – recipients' age),

Way of using the movie (role that it has to fulfil in the didactic process).

It is hard to overestimate the role of a didactic movie in teaching or learning process implementation and it is rightly considered the best audiovisual aid, because it is the closest reflection of reality and it engages the learner's perception in the fullest scope. With aid of a movie it is very easy to transfer knowledge that could not have been presented by means of a different method, e.g. because of lack of time or space, as well as knowledge about hard-to-approach processes or phenomena. An important advantage of a didactic movie is also the fact that sometimes from the same filmed materials one can produce films for different teaching levels, by means of selecting through editing and differentiating comments.

As a didactic aid movie engages two most important channels, through which information accesses the human brain: sight and hearing. On the basis of research it was established that it engages 94% of human perception abilities. It can be used multiple times, at the most convenient moment during the didactic process. The influence it has on its recipients thanks to its qualities and proper methodical activities make it a multi-functional aid. On the basis of analysis of different types of didactic movies the following pedagogical functions of a movie have been determined:

- Cognitive-educational function,
- Emotional-motivating function,
- Educational function,
- Methodical function.

2. Example of a didactic movie screenplay produced in a laboratory of *Multimedia didactic techniques* by students of the second year of Technical-IT Education at the University of Rzeszów.

Screenplay of a didactic movie is a written record of what is to be recorded in video and audio form. In other words it is a record of everything that can be seen and heard in the movie.

Screenplay includes the following items:

- Movie title,
- Authors,
- Recipients – who is the movie designated for,
- Short content description – what is it about, what is its subject,
- Planned takes – what will be seen in particular scenes and narrator's commentary.

Example of a didactic movie screenplay produced in a laboratory of *Multimedia didactic techniques* by students of the second year of Technical-IT Education at the University of Rzeszów.

Screenplay of didactic movie is a written record of what is to be recorded in video and audio form. In other words it is a record of everything that can be seen and heard in the movie.

Screenplay includes following items:

- Movie title,
- Authors,
- Recipients – who is movie designated for,
- Short content description – what is it about, what is its subject,

- Planned takes – what will be seen in particular scenes and narrator's commentary.

Movie title: *Vehicle maintenance.*
Recipients: participants of driving license courses, drivers and all people interested in everyday maintenance of a car.
Movie content description: maintenance activities before starting to drive, periodic diagnostic and maintenance activities, elements of vehicle lighting.
Planned shots:

Shot I

Camera: broad shot of a car,

Narrator: *Using a car is such a mundane activity that we often forget about basic matters related to everyday usage of our vehicle. This movie aims at telling you a few words about these basic car maintenance activities, exemplified on the Polish Fiat 125p.*

Shot II

Camera: transition from broad shot of a car to the engine shot.

Narrator: *we can see now engine of a car. This unit comes from FSO Polonez car, its cubic capacity amounts to 1500 cm^3 and its power is 56,2 kW. In spite of technical advance in modern cars their main maintenance points remain generally unchanged. Of course, periods of exchange of maintenance fluids, spark plugs or engine overhaul have been extensively extended. However, due to the fact that many people use old cars, example made of this car seems to be perfect.*

Shot III

Camera: close-up on the oil dipstick – measurement of the engine oil level.

Narrator: *we start with measuring the amount of oil, ensuring lubrication of connecting engine parts. It is of utmost importance because of endurance, reliability and its proper work. Oil level is measured with dipstick placed on the left side of the car engine. First of all one has to remove it and wipe it clean and then place it properly in the engine and remove once again. Oil mark should be near the "MAX" line. If the oil mark is well below this line it is necessary to refill oil through the hole in the engine's head cap, accessible after removing the cork. Space between "MIN" and "MAX" lines corresponds to one litre of oil poured into the engine.*

We exchange oil as a standard every 10,000 km. Of course engines in modern cars have extended period of exchange. One always has to stick to the periods provided by the engine manufacturer and dates of its exchange. When changing oil one has to change side oil filter, too.

Shot IV

Camera: close-up on the equalizing tank of the engine cooling fluid.

Narrator: *amount of fluid in the cooling system can be estimated on the basis of its level in the equalizing tank. It should reach 6-7cm above the minimum line on this tank. In case of failure to find the "MIN" line one has to inspect whether cooling fluid level is little below pipe protruding inside the tank.*

Shot V

Camera: close-up on the brake fluid tank – checking the amount of fluid.

Narrator: *there is no need to convince anyone how important is the proper work of brakes. It can be assured by regular control of the brake fluid amount in the tank sitting on the brake pump or in its close proximity. Fluid has to be between the "MIN" and "MAX" lines on the tank.*

Shot VI

Camera: close-up on the windscreen washer tank – checking amount of fluid.

Narrator*: using fluid for windscreen washer is dependent on the temperature of surroundings. Concentrates have to be mixed with water in proportions defined by the manufacturer or we can buy pre-mixed fluids. It is worth to control the fluid level on a regular basis. Clear front windscreen improves the visibility of the road and other vehicles, thus making the driver safer.*

Shot VII

Camera: close-up on the air filter - inspection.

Narrator: *condition of the air sucked through the air filter by engine is vital for the usage economy and engine work. Very dirty filter has to be replaced. It is of utmost importance, when the engine is powered by LPG gas. It is usually done every 10,000 km but when used on heavy dusted roads it has to be done adequately more often.*

Shot VIII

Camera: close-up on the spark plugs - information about length of their usage.

Narrator: *spark plugs are an important element in an engine with spark ignition. Proper engine work, car performance and fuel consumption depend on spark installation efficiency. Spark plugs have to be replaced circa every 20,000 km. It is good to use spark plugs recommended by the vehicle manufacturer.*

Shot IX

Camera: close-ups on vehicle lighting components: inspection of running lights, dimmed headlights, headlights, fog lights, rear lights, hazard lights, indicators and stop lights.

Narrator: *in the end one has to inspect the vehicle lights. It is of utmost importance in the case of night drive and in bad weather conditions, as well as when signalling manoeuvres such as turning, braking or reversing.*

Shot X

Camera: Shot of the whole car

Narrator: *All activities that were enumerated can ensure safety travel and efficient work of car components and its economic usage. It is good to spend some time once a month and inspect our car. Do not spare time when it comes to the safety of us and others.*

Shot XII

Camera: car driver away, picture darkens – end of movie.

Narrator: *have a safe journey.*

Conclusion

Movie can be one of the most effective didactic aids at all levels and types of education, because:

- Thanks to its natural attractiveness, it makes the knowledge perception a lot easier
- It is the fastest transmission of the newest research results, which could not have been made accessible to the public in a different way,
- It does not restrain education to one place and time,
- It is accessible also for small and averagely equipped schools,
- Viewing it absorbs the directed and unintentional attention,
- Attractive way of conveying knowledge has large motivational meaning in education.

To what extent and whether at all a teacher will be able to produce on its own a didactic movie or a short study, used later as a video sequence in multimedia didactic programme (compare Walat 2007) depends on many factors. Starting from intellectual domain, it depends on knowledge of filmed objects and technical descriptions defining them, ability to construct short and concise utterances but containing all important elements that in didactic movies play a role of verbal information, submitted in form of a commentary by voice-over, through psychological knowledge of recipient's perceptive abilities, pedagogical functions that a given movie can fulfil in didactic process etc. On the technical side possibility of producing a good didactic movie depends on the fact, whether the teacher will be able to operate (knowledge of functions and basic parameters characterizing the audio-video equipment) and to use (ability to compose scenes – framing, closing-up, track outs, proper lighting of models and their details etc.) equipment for recording and editing a movie. All the abovementioned factors and many more, not enumerated here, have an influence on whether a given video sequence used later in multimedia didactic programmes will be content-wise, technical-wise and as a consequence didactic-wise correct. All these components can be and even are determinants of the quality of methodological and content preparation, as well as the knowledge and skill to use technical didactic means of technical-IT education teachers in the course of studies.

Literature

1. Bar M.: *Kamery, film dydaktyczny*. Materiały niepublikowane, opracowane pod kierunkiem W. Lib, 2005.
2. Januszkiewicz F., Skrzydlewski W.: *Edukacyjne zastosowania telewizji*. WSiP, Warszawa 1991.
3. Łasiński G.: *Sztuka prezentacji*. EMPi², Poznań 2000.
4. Pehle T., Schild W.: *Wideo-filmowanie. Techniki filmowania, udźwiękowienie, montaż*. Muza S.A., Warszawa 1993.
5. Pelechowicz K., Wójcik D., Kliś K.: *Karmnik dla ptaków*. Film dydaktyczny opracowany i wykonany w ramach laboratorium Multimedialnych technik dydaktycznych pod kierunkiem Lib W, Rzeszów 2007.
6. Plenković, J., Plenković, M., Etyka w biznesie – analiza historyczna i stan obecny, Technika-Informatyka-Edukacja, Teoretyczne i praktyczne problemy edukacji technicznej, Redakca Waldemar Furmanek, Aleksandar Piecuch, Wojciech Walat, Uniwersitet Rzeszowski, Rszesow, 2005., 135-143.
7. Plenković M., *Social and communication aspects of media digitalization (2006-2012)* [in] *Technology and society 2006*. Ed. Juraj Plenković, Croatian Communication Association Zagreb 2006 (edited by English).
8. Plenković, M., Hadžić, S., Plenković, J., Istota czasu wolnego, Wartosci w Pedagogice, Czas jako wartosc we wspolczesnej pedagogice, pod redakcja Waldemara Furmanka, Uniwersytet Rzeszowski- Instytut Badan Edukacyjnych w Warszawie, Rszesow, 2008., p. 58-69.
9. Skrzypczak J.: *Film dydaktyczny w szkole wyższej*. PWN, Warszawa 1985.
10. Walat W.: *Edukacyjne zastosowania hipermediów*, Wyd. UR Rzezów, 2007. ttp://www.jablonski.art.pl/element.htm 13.03.2005.
11. Zając A.: *Techniczne środki dydaktyczne*. Rzeszów 1988.