

POPULAR PHYSICS CONCEPTS OWN INTO RECEIVED VISUAL COURSE MATERIALS WORK EXIT

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ABSTRACT

A visual learning material was prepared by collecting the necessary inventory from the website, library, popular physics concepts, current lectures, articles and documentaries. The purpose of the research is to develop a virtual and visual course material. A preliminary study was conducted to measure the educational impact of the material developed in the study and positive results were obtained. Document analysis was conducted in the study. All data collected were evaluated according to scientific methods and materials development criteria. The virtual tools used, the paths followed, the methods and each step of the process are explained in the method section so that the study can help similar studies. The achievements of the study, its contribution to education and the conclusions drawn are presented in the results and recommendations section.

Keywords: Educational material, Popular physics concepts, concept

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The use of audiovisual and virtual concepts is extremely important in educating abstract and hard-to-reach concepts. Concepts are units of thought. They are the building blocks of information. Concepts in and out of nature; It is an expression of encoding that represents an event, event, entity, and anything else in terms of semantic

integrity. In addition to being virtual and abstract, concepts can also be inaccessible. Popular physics concepts that we use all the time in our daily lives are concepts that are very difficult for human hands to manipulate or achieve. Concepts such as the Big Bang, particle physics, the universe, the Hubble Space Telescope, asteroids, stars, quasars, blazars, black holes, and our Earth or Solar System are just some of the thousands of concepts we cannot reach or formally place. These concepts are known in society as popular physics concepts. The material used in teaching these concepts and educating a person in this field is important. Materials designed to present concepts visually and audibly make concept teaching easier.

The audiovisual preparation of the concept is reminiscent of video, which comes from the same root as the Latin verb "to see" and has meanings such as "to see" or "to be visible". Combining sound, motion, and images, video has become a popular field of interest, captured and shared on television, the Internet, or mobile devices for a wide variety of purposes. Education is one of the environments where visual video applications are used effectively in all spheres of life, from advertising, film, music, advertising and entertainment. The importance of visual materials in education and training is the sense of sight in learning. It has been found that children learn to speak and understand concepts faster by imitating them from TV shows from a young age. Based on this result, it is necessary to prepare visual and audio materials, which are an important factor in the education of the concept of personality, using the possibilities of technology that is developing and developing in the educational system today. The ability to break down images that emphasize, explain, or illustrate concepts and reassemble them in a way that suits learning objectives can transform video into images that teach human perception. Materials prepared in this way can be accessed anytime and anywhere, regardless of time and place, thanks to the Internet and mobile applications. In particular, actions such as start, stop, save and even replay reinforce the integral nature of these materials. In addition to its ability to enrich learning, it enhances the quality of knowledge through balance and consistency in sharing. What makes visual and audio material so important is undoubtedly the rapidly evolving

technology. In particular, the development of information and communication technologies such as computers, mobile phones, and the Internet increases the importance of visual and audio materials today.

Teaching materials are tools used to make abstract concepts concrete and to model hard-to-reach concepts. Some criteria are taken into account when choosing these materials. The first step in the selection of material is to determine the required performance of the student in the subject being taught, the target audience in this context and their characteristics and types of learning. First of all, the size of the audience for which the material will be used and the types of learning should be determined, and then the method should be chosen. When choosing a method, in addition to these characteristics, opportunities such as money, time, and student characteristics should also be taken into account. After choosing a suitable method, the teacher's skills and abilities should also be included in this process, and the final stage, the selection of materials, should be started.

The material prepared in teaching should have certain characteristics. These features can be defined as follows.

1. It should be simple, simple and clear,
2. Curriculum should be selected in a supportive manner and in accordance with the objectives and achievements of the course;
3. It should be equipped with important and brief information, not all the information that constitutes the subject of the course,
4. The visual features used should be used to emphasize the important points of the material and should be avoided.
5. The written texts and the audiovisual elements used should match the student's pedagogical characteristics and correspond to the student's real life,
6. To give the student the opportunity to practice and practice,
7. It should reflect real life as much as possible,
8. Learning materials should be available and accessible to every student.
9. It should be simple for students to use,

10. Materials for reuse must be durable and must not break during single use.

11. Should be easily developed and updated if necessary,

12. To use all possibilities in its preparation and to get help from nearby,

13. Manuals for the preparation and use of materials should be created. In addition

to these specified features, there are also principles that should be followed in the preparation of materials.

The principles of material development to be followed in achieving the research objective are defined below.

1. Principle of meaningfulness: Following this principle, care was taken to ensure that the definitions and entries used were positive and well-structured sentences to demonstrate the meaningful integrity of the study.

2. The principle of starting from the known: In the preparation of the material, the selected concepts are arranged in such a way that they go from simple to complex, from known to unknown, and from concrete to abstract. For this purpose, selected concepts are presented in alphabetical order, classified by each letter (including W, Q, X) and connected to the Internet. A DVD was also produced.

3. The principle of many examples: Many examples should be given to show the breadth of the concept. For this purpose, the number of selected concepts from sources in the research inventory was kept more than one. Also included are concept films that explain the concept in different ways. Some concepts are prepared as both .pdf and .swf.

4. The principle of relativity: Features are perceived relative to each other. Everyone should be able to distinguish between images and shapes. To do this, the font size, background, sound level and screen coverage of the concepts are equalized so that every student who uses the material understands the same thing.

5. The principle of selectivity: It is necessary to place important elements in the educational material in a way that attracts the most attention. For this, colors that reveal the main element were used.

6. Complementary principle: Instead of giving the whole series of an event or thing, it may be enough to give a part of it. For this purpose, each concept that was cut

from the main film was chosen so that the student could give feedback on the main film.

7. The principle of meaningfulness of the background: There should be a background that adds meaning to the picture or text.

8. Principle of Proximity: Forms should be clear and not left open or incomplete.

9. The principle of associativeness: Things and events that are similar and close to each other are perceived as related and are better remembered.

10. Consistency in perception: objects that the student already knows can be represented with very simple lines.

11. The principle of depth: If the creatures in nature are close to us, they appear with their true sizes and colors. This gives the impression that these same creatures become smaller as they move away, and their colors fade.

12. Novelty Principle: Attention is directed to situations that are new and especially familiar and contrast with recent experiences. Special attention was paid to this issue in the prepared material.

No such material was observed in internet research or environmental studies. Especially in the process of teaching and learning concepts with the help of films, it is seen that the concept set is new and unique.

13. The principle of simplicity: To attract and retain attention, the elements of the visual medium should be simple, not complicated.

14. Goal-behavior principle: the tool used must be able to create the target behavior that is expected to be achieved.

15. Suitability for the learner: The tool used should be suitable for the learner's characteristics (age, intelligence and pattern of past experience).

Summary

When teaching abstract and hard-to-reach concepts, it is recommended to prepare virtual course materials using virtual computer programs. Abstract and hard-to-reach concepts that people from all walks of life encounter in their daily lives but struggle to make sense of or schematize are encouraged to use Internet-integrated learning

material (DVD) because it facilitates learning. Popular Physics Concepts. Place (Place) of the article in the Science Section Elementary Education / Science Section Education Uniqueness in Science Visual material is very important in mastering abstract and hard-to-reach concepts. With this emphasis, visual, auditory and descriptive virtual course materials have been prepared to ensure that concept teaching is carried out effectively. This material, which was prepared by means of document review and analysis, was prepared in accordance with the principles of material development. With this material, the teaching of abstract and hard-to-reach concepts is ensured. If the material is not used, it is inevitable that the mental schemas that students construct about popular physics concepts will be incomplete or inaccurate. This material can be used to teach popular physics concepts of interest to students at all levels, from early childhood to university level.

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