

Technology Integration: Problem-Based Learning Plan

Modern education uses traditional as well as and innovative forms and approaches. Each of these forms has both positive and negative sides. The essence of problem-based learning lies in the fact that special conditions are created during training sessions. Due to this, relying on the acquired knowledge, a student independently discovers and comprehends the professional educational problem, acting mentally and practically to find and justify the best solutions for it (Raffaele & Gobbi, 2021). The approach is aimed at reorganizing students' educational and cognitive activity, significantly increasing their independence in searching information and arranging an individual system of knowledge in each subject (Baydjanov, 2021). Problem-based learning focuses on solving problems in a particular disciplinary area, such as mathematics or biology. Meanwhile, project learning is often implemented in interdisciplinary areas, with students choosing the topic of the project by their inclinations, interests, and abilities (Anazifa & Djukri, 2017). The main advantage of problem-based learning is the development of students' creative potential.

Technology Integration

Technology integration involves the use of technology resources in the daily work in the classroom and school management. The use of information technology dominates the modern world, and the education sector is no exception, which allows for a rapid change in the educational process (Ratheeswari, 2018). Technology enables teachers to motivate students to acquire knowledge in a new way and improves the quality of education (Levina et al., 2017). Technology use involves various devices and methods of information processing, primarily computers with the necessary software and telecommunication facilities with the information on

them, which are currently placed in classrooms. Students can use them to communicate with each other, as well as with the teacher, or to find new information related to the lessons' goals.

The Technology Integration Matrix (TIM) provides a framework for identifying and setting goals for using technology in the learning process to improve its quality. The matrix consists of five interdependent characteristics of the learning environment: active, collaborative, constructive, authentic, and purposeful (Reich et al., 2020). There are five levels of technological integration: entry, implementation, adaptation, implementation, and transformation (Reich et al., 2020). Learners use technology and actively receive information, which allows them to collaborate with their peers, so not all work is done individually. Students connect learning activities to the world outside the learning environment rather than working on tasks unrelated to the context. In addition, there is a clearly defined goal (or goals), planning activities, tracking progress and evaluating results, not just completing tasks without thinking.

Participants of the educational process are beginning to use technological tools at all levels to provide students with the relevant content of the curriculum. The teacher guides students in the standard and procedural use of the technology. Even though learners use technology independently, the teacher helps them grasp the basics. At the same time, the teacher sets the lesson's goal, and students independently choose the appropriate technologies. The teacher encourages students to make a proper choice and helps them when needed. Such an approach helps them in facilitating progress in learning activities.

The ASSURE Model for Instructional Design

The ASSURE Model is a planning and instruction manual that integrates technology and media into the learning process. It includes six major steps in the learning planning process. First of all, there is a description as a whole. Goals are described next: statements that denote what the

learner will do as a result of learning. The model implies the choice of methods used during the lesson in the first place. ASSURE contains a description of how to engage and interest each student in achieving the lesson's goal. As a result, this will lead to effective summing up and evaluating the knowledge gained.

The Analysis of Learners

The lesson is designed for pupils of the 7th grade of the secondary school. The class consists of 15 girls and 9 boys, seven of whom have individual educational plans. Students have different learning abilities and styles; most students are not always motivated and can quickly lose focus. The class has a basic knowledge of the work of William Shakespeare: they know famous pieces and themes often found in his plays and sonnets.

The Analysis of Technology in the Local Setting

Projector: The teacher will use a projector to show a documentary on the life of Shakespeare.

Speakers: With speakers, students can hear the movie clearly.

Computer: A computer will be used to view a movie on the projector.

The classrooms are equipped with projectors, and some also have speakers; however, the computer must be personal.

Standards and Objectives

Curriculum standards include an analysis of the influence of writers and a literary analysis of their works and criticism. Students should also be able to determine the meaning of words and phrases used as literary devices.

The following standards will be integrated with the planned lesson:

- a) the analysis of the influence of the writer and his creative path

- b) familiarization with the work for further literary analysis

The International Society for Technology in Education (ISTE) standards for students:

- a) independent use technology to obtain new information about different sectors of society and culture to improve their learning and broaden their horizons;

Lesson objectives:

- 1) The students are divided into groups of three or four to give a brief overview of the new information received and highlight the writer's significant contributions to world literature.
- 2) They will use computers to access the Internet for additional research and assistance.

Planning the Strategies, Technology, Media, and Materials

Focused learning, infusion level

Descriptors: teacher, students, media, Internet

Materials: course notes, video, Internet, technologies (computer, smartphone)

The teacher establishes a learning situation in which students use technological tools (computers, the Internet, smartphones, interactive whiteboard, video materials) to set goals (they choose which area of creativity to focus on and disclose in their answers). Students plan their participation and thus monitor and evaluate the results of learning activities. The teacher encourages students to choose and use technology to complete the assigned tasks independently.

Initially, the teacher asks the students to name the facts they know about the writer or his works. The teacher writes students' responses on the board using a mind map. The teacher then provides examples of analyzing a literary work on a small excerpt from Shakespeare's play using a PowerPoint presentation. After watching the video, students will be divided into groups where

they will complete tasks. The video will be used for a basic introduction to the topic and further work with the information received. Then, the students will discuss the issues raised in the studied work and briefly retell the author's biography. The teacher will indicate which answers aroused more interest among classmates.

Utilizing Technology, Media and Materials

Before the lesson, the teacher will set up the computer and the projector. Then, these selected media and technologies will be turned on and tested, after which, the video will be prepared for playback. A documentary will be included at the beginning of the lesson, after the introductory part.

Material Preview

The teacher will check the video to ensure there are no problems and the students can hear the recording. The teacher also makes sure that the speakers work, as well as check the projector and computer for compatibility.

Preparing the Materials

Before the start of the lesson, the teacher will check the equipment and prepare the necessary technologies and materials, so there are no delays during the study.

Preparing the Environment

Tables and chairs will be arranged in such a way that students can clearly see and perceive information from the video. It is necessary to make sure that each student hears and understands everything well.

Making Students Ready

The teacher informs the students about the activities planned before class. Students will also be informed about the assessment exercises they will be given at the end of the session. By

doing this, the students will feel comfortable when the lesson starts.

Requiring Learner Participation

Students will be divided into groups to complete the task. After discussing the main points of literary influence among themselves, they will have to present an answer in front of the class. Each group will need to choose one student as a representative who will present a general answer.

Evaluating and Revising

The lesson will end with a short debrief from the teacher, and a question-and-answer method will be used for assessment and revision. Questions will include:

- 1) What are the major works of Shakespeare that have influenced the world?
- 2) What period does Shakespeare's work belong to?
- 3) Name the features that distinguish the work of Shakespeare from the work of other writers of the era.

After receiving the answers, the teacher will be able to evaluate students' involvement in the group work process. To strengthen the results obtained in the next lesson, it is recommended to check how well the material studied in this lesson was consolidated. These measures will help evaluate the effectiveness of this type of work combined with technology and plan the next lessons based on the results.

References

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