

level of powerful reflection. Nowadays it is a high time to introduce methods of diagnosis into the system of higher pedagogical education, correction and training of environmental consciousness – both individual and group. It is very important to teach future teachers to organize their own and then children's environmental behaviour through their inclusion in various situations with different subject-matter content.

Consequently, educational potential of ecological aesthetics should have the opportunity for implementation in the system of higher pedagogical education. The ecological and aesthetic approach to the integration of educational disciplines at pedagogical university is extremely fruitful. Environmental education of future teachers should have a personal dimension. Only integrative personal values may become an essential indicator of teacher's professional readiness for educational work with children and accomplish the function of higher criterion for orientation of the future teacher in the educational space.

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DISCOVERY LEARNING AS A NEW TYPE OF EDUCATIONAL PROCESS

Today, the most promising and appropriate to socio-economic and psychological conditions is Discovery Learning. It is interpreted as a teaching principle, as a new type of educational process, as a teaching method, and as a new didactic system.

How to motivate students to self-study today? We often encounter uninitiated behavior, unwillingness to complete tasks, or situations where a rule needs to be explained several times. Teachers spend a lot of time searching for new, vivid examples of explaining rules, choosing teaching methods that require more activity from students than acting skills from the teacher.

The English method of “Guided Discovery”, developed by Dr. Charles Wells, is a teaching strategy.

Discovery Learning is a learning method that encourages students to ask questions and formulate their own tentative answers, and to deduce general principles from practical examples or experiences. Other definition states that Discovery Learning is a learning situation in which the principal content of what is to be learned is not given but must be independently discovered by the student.

The learning debate continues a timeless debate as to how much a teacher should help a student and how much the student should help himself¹. He stated lays out two targets for discovery learning theory:

- 1) Discovery Learning Theory should act as a refined extension of the broad-based theory constructivism by focusing on the individual.
- 2) Discovery Learning Theory should serve as a way of defining and provide a guide for educational research.

There are four components to the Discovery Learning Theory:

- Curiosity and uncertainty,
- structure of knowledge,
- sequencing,
- motivation.

It is also determined that there are three principles associated with Discovery Learning Theory: instruction must be concerned with the experiences and contexts that make the student willing and able to learn (readiness); instruction must be structured so that it can be easily grasped by the student (spiral organization); instruction should be designed to facilitate extrapolation and or fill in the gaps (going beyond the information given)².

Bruner also identified six indicators or benchmarks that revealed cognitive growth or development:

- a) responding to situations in varied ways, rather than always in the same way,
- b) internalizing events into a ‘storage system’ that corresponds to the environment,
- c) increased capacity for language,
- d) systematic interaction with a tutor (parent, teacher, or another role model),
- e) language as an instrument for ordering the environment,

1 Bruner, J. T. Schools for thought: a science of learning in the classroom / J. T. Bruner. Cambridge : MIT Press, 1993.

2 Bruner, J. Acts of meaning / J. Bruner. Cambridge : Harvard University Press, 1990.

f) increasing capacity to deal with multiple demands³.

Modern American theories of “learning through problem solving” (W. Alexander, P. Halverson, etc.), in contrast to the theory of J. Bruner, have their own characteristics:

- they do not overemphasize the importance of the student’s “self-expression” and do not downplay the role of the teacher;
- the principle of collective problem solving is asserted, in contrast to the extreme individualization observed previously;
- the problem-solving method in teaching is given a supporting role.

In the 70-80s of the 20th century, the concept of problem-based learning by the English psychologist E. de Bono, who focused on six levels of thinking, became widespread. In the development of the theory of problem-based learning, teachers from Poland, Bulgaria, Germany and other countries have achieved certain results. Thus, the Polish educator W. Okon studied the conditions for the emergence of problem situations using the material of various academic subjects and proved the advantage of learning through problem solving for the development of students’ mental abilities⁴. Problem-based learning was understood by Polish educators as only one of the teaching methods. Bulgarian educators (I. Petkov, M. Markov) considered mainly applied issues, paying primary attention to the organization of problem-based learning in primary school.

Discovery learning can be used as a suitable techniques of teaching English especially in the implementation of three phase listening method. The advantage of the three-phase listening method is that the students will acquire the experience needed to understand the listening material step by step through the -pre, while-, and post listening process. There are several advantages in discovery learning models like:

- (1) this learning model has several phases, those are stimulation, problem statement, data collection, data processing, verification, and generalization;
- (2) this learning model could be implemented in accordance with the listening aspect characteristics which have 3 phases those are pre-listening, while-listening, and post-listening⁵;

3 Bruner, J. Narrative and paradigmatic modes of thought / J. Bruner // *Learning and teaching the ways of knowing: 84 yearbooks of the National Society for the Study of Education*. Chicago : University of Chicago Press, 1985. P. 97–115.

4 Терещук Г. В., Янкович О. І. Освітня, наукова й управлінська діяльність Вінченца Оконя : історія та сучасний контекст // *Педагогічний альманах: збірник наукових праць*. Херсон : КВНЗ «Херсонська академія неперервної освіти», 2021. Вип. 50. С. 226-234.

5 Hedge, T. (2003). The Practice of English Language Teaching. *ELT Journal*, 57, 401-405.

- (3) this learning model is suitable with the learning approach in the curriculum of 2013 which was called scientific approach which include observing, questioning, rationalizing, associating, and communicating⁶.

Guided discovery learning is a way of presenting language, particularly grammar using two approaches: a *deductive approach* or an *inductive approach*. **The deductive approach** is teacher-centered and begins with instruction. The teacher explains the rule, provides examples, and then allows students to practice applying it. For example, the teacher might explain that the past simple tense is formed by adding -ed to regular verbs, followed by examples and practice exercises.

Advantages:

- Efficient and straightforward, especially for complex rules.
- Provides clarity and structure for learners.
- Works well for large classes or limited time frames.

Challenges:

- Can be passive if learners are not actively involved.
- May not promote deep understanding or retention compared to discovery methods.

Guided Discovery is learner-centered approach, also known as an inductive approach used to introduce and clarify language. It consists in providing students with an example of the target language item in a meaningful context, and then learners actively uncover language rules, meanings, or patterns through carefully designed tasks and questions, with the teacher providing guidance and support as needed. This method promotes critical thinking, engagement, and deeper understanding by encouraging students to analyze examples and draw their own conclusions. This approach turns the teacher into a facilitator whose role is to help, guide and facilitate learning. The explainers in this case are your students. This approach is useful for learners of English as a second language. Students are actively involved in analyzing and understanding the language, making it more memorable. It develops problem-solving skills and encourages students to become independent learners, a crucial skill for language acquisition. Although it has its downsides:

- Some learners may prefer more structured, teacher-led instruction, particularly if they are used to traditional teaching styles or are less confident in their ability to explore and deduce rules independently.

6 Kemdikbud, 2013. Permendikbud RI No 66 Tahun 2013. Jakarta : Kemdikbud

- Not for beginners. This method relies on a combination of learners' existing knowledge and new concepts they uncover during the activity. Guided discovery is generally more effective for students at the intermediate level and beyond, where they have sufficient prior knowledge to build upon.
- Teachers must anticipate potential learner difficulties, ensure that the materials are clear and engaging, and be ready to provide appropriate support during the discovery process. This level of planning and expertise can make the method more demanding compared to traditional teaching approaches.
- Guided discovery is effective for teaching grammar, but less so for vocabulary or functional language. Vocabulary often requires more explicit teaching, as students may struggle to deduce meanings or forms on their own.
- Not all grammar rules work well with this method. Many grammatical structures are irregular or have exceptions that can complicate the discovery process. Certain rules may work well with guided discovery, while others may require more direct explanation to ensure clarity and avoid confusion.

Here are some examples that do work well: Comparatives and superlatives; Question tags; Articles; Conditionals; Determiners; Word order; Reported speech.

There are four essential elements of a guided discovery lesson plan. Let's take a look at them.

Collaboration

Having students work with others always will help to create the communication that we need for this approach to work.

Task Setting

Set the task for the students. Put key phrases on the board for students to use, but don't tell them what they mean or how they are used. Tell the first part of a story and leave the next part of it open to interpretation. One way to ensure collaboration is to use small groups or pairs to make each student participate as much as possible.

Monitoring

While they are engaged in the task, you take on the role of "monitor". If you have set up the activity well, students will work toward the goal while relying on each other for practice and to get feedback.

Consolidation

The end of the task is the time to check for common errors and correct them. Use questions to help the students discover further information about the target language and share it with the group.

Good lesson design is the foundation of guided discovery. Tasks should be clear and focused to enable students to discover language rules themselves through analysis.

Here are **the key stages** for creating an effective Guided Discovery lesson:

<i>Identify the Target Language</i>	Be clear about what grammatical structure, vocabulary or function you want to teach. Use meaning (what it conveys) and form (the structure of the language) to do this.
<i>Create a Context</i>	Provide a meaningful and engaging content: a short story or text, a dialogue or conversation, a relatable situation (e.g., planning a party, giving advice))
<i>Design a Guided Discovery Task</i>	Prepare tasks that encourage learners to notice the target language in the context and deduce its rules.

If you have 80-minute lesson and you teach high-level students use:

- *Highlighting*: Ask students to find and underline examples of the target structure.
- *Categorizing*: Have students group examples based on similarities or differences.
- *Gap-fill tasks*: Provide partially completed sentences where students complete or observe the missing form.

Scaffolding technology is used to methodologically support students in the process of learning material, in particular new concepts, i.e. creating conditions for increasing students' success in completing complex tasks. Scaffolding is a teaching method where the educator helps support students to complete tasks just beyond the level that they could achieve by themselves. Researcher J. Bruner believes that scaffolding is a learning process that allows students to acquire certain knowledge and skills, relying on the help of a teacher⁷. Modern scholars R. Zhao and M. Orey see scaffolding as a special type of instruction in solving problems or tasks in the process of teacher-student interaction⁸. Of the numerous mentoring methods (shadowing, buddying, secondment, coaching, mentoring), the authors highlight scaffolding as a special process of instructing.

⁷ Wood, D., Bruner, J., Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*. Vol.17. 2023. P.89–100.

⁸ Zhao R. &OreyM. The scaffolding process: Concepts, features and empirical studies. Unpublishedmanuscript.

Typical scaffolding techniques include:

- *Simplifying the language include activating existing knowledge:* the teacher can simplify the language by shortening selections, speaking in the present tense, and avoiding the use of idioms.
- *Asking for completion, not generation:* The teacher can have students choose answers from a list or complete a partially finished outline or paragraph.
- *Using visuals:* the graphic organizers, tables, charts, outlines, and graphs.

It has been studied that the main indicator of scaffolding is “fading help” from the teacher (mentor), i.e. reduction in the degree of intensity of assistance until the moment when the student becomes completely independent and autonomous, and by the end of the training it is significantly reduced or absent at all.

As Discovery Learning is a learning method that encourages students to ask questions and formulate their own tentative answers, you should design specific questions/tasks to guide learners through the aspects of the language: meaning, use, form. For helps reinforce the language rule, prepare a controlled practice task. For example, if teaching the past simple tense, students could complete gap-fill exercises like “She _____ (walk) to the store yesterday”. This ensure they grasp the form. Prepare a freer practice task (creative task). This task allows them to apply the language in a more natural, less structured way, promoting fluency and confidence. Feedback helps consolidate learning and ensures students stay on track. For example, if students make a mistake with a past tense form during the freer practice, gently correct them by highlighting the correct usage and offering a brief explanation.

A guided discovery approach can also be effectively incorporated into writing lessons, particularly when preparing students for specific writing tasks like film reviews.

For instance, you can begin by showing a model review and using guided discovery tasks to analyze its structure and language: to describe the story or express the reviewer’s reactions, encouraging them to recognize the different functions within the text or to notice the use of the Present Simple for describing the plot and the Present Perfect or Past Simple for expressing opinions or reactions.

By guiding students to uncover these patterns themselves, you not only enhance their understanding of the writing conventions but also give them the tools to apply these features in their own writing, fostering autonomy and confidence.

Thus, the analysis shows that Discovery Learning contributes to the effective learning of a foreign language by students in higher education institutions. The use of various means of methodological support for students in the process of studying the material helps higher education students, especially those studying a foreign language, effectively master the goals and content of the lesson. Quickly improve your knowledge of a foreign language, understand, and master new material.

An important method of technology Discovery Learning is the help that the teacher provides, which neutralizes the significant level of stress that students usually experience when learning a foreign language, and forms students into confident, independent individuals who are able to independently complete complex tasks.

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ДОСЛІДНИЦЬКА КОМПЕТЕНТНІСТЬ ЯК ОСНОВА ПРОФЕСІЙНОЇ ПІДГОТОВКИ МАЙБУТНІХ ФАРМАЦЕВТІВ

Розвиток сучасної фармації та вимоги ринку праці формують нові підходи до підготовки кваліфікованих фахівців, здатних не лише виконувати традиційні завдання, але й активно впроваджувати інновації у свою професійну діяльність. Це викликає необхідність формування у майбутніх фармацевтів розвиненої дослідницької компетентності, яка є важливою складовою їхньої фахової підготовки. Дослідницька компетентність охоплює не лише базові навички наукової діяльності, такі як проведення експериментів, аналіз даних та інтерпретація результатів, але й здатність систематично інтегрувати отримані знання для вирішення складних завдань. Вона забезпечує вміння ефективно працювати з великими обсягами інформації, критично оцінювати її якість і наукову цінність, а також розробляти та впроваджувати новітні