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II INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE

**«Modern Approaches to Problem Solving
in Science and Technology»**

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13. Strilchuk V. Knyhy anhliiskoiu za rivniamy: shcho pochytyaty z korystiu vid A1 do C2. Grade Education Centre. URL: <https://grade.ua/uk/blog/knigi-na-angliyskom-dlya-raznykh-urovney-spisok-ot-a1-do-c2> (data zvernennia: 4.11.2023).

THE EFFECT OF PROBLEM SOLVING METHOD ON STUDENTS ENGAGEMENT AT ENGLISH CLASSES

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Engaging students in the English classroom can be a challenge, especially when it comes to more complex topics. One approach that has gained popularity is problem-solving. Students are neither passionate nor motivated to learn in class. This problem can be both challenge and opportunity for the teacher to deliver the material in an alternative way by engaging the students to learn in class [2, p. 71]. Savin-Baden defines student engagement as student association with the learning context, peers, and tutors that enable transition of knowledge in learning; the notion of engagement also includes students' degree of desire, interest and attention during the learning process [1, p. 1–23].

Problem-solving is an active learning method where students work together to find solutions to real-world problems. It encourages critical thinking, collaboration, and creativity. In the English classroom, this could involve discussing global issues, finding ways to improve their community, or even creating a business plan.

There are several benefits to using problem-solving methods in the English classroom:

1. Increased Motivation: Problem-solving tasks are often more engaging than traditional language exercises. When students see the relevance and purpose behind the activity, they're more likely to be motivated to participate.

2. Real-World Application: Problem-solving tasks give students the opportunity to use English in authentic situations. This helps them develop practical skills that they can apply outside the classroom.

3. **Critical Thinking Skills:** Problem-solving requires students to analyze information, evaluate different options, and make decisions. These skills are essential for academic and professional success.

4. **Collaboration and Communication:** Working in groups encourages students to communicate and collaborate with their peers. They learn how to express their ideas, listen to others, and negotiate meaning.

While problem-solving has many advantages, there are also some challenges to consider:

1. **Time-Consuming.** Problem-solving activities can take longer than traditional exercises. Teachers need to carefully plan lessons and allocate sufficient time for each stage of the task.

2. **Language Complexity.** Problem-solving activities often involve higher-level language and concepts. This can be challenging for students with lower proficiency levels, as they may struggle to express their ideas effectively.

3. **Unequal Participation.** In group work, some students may dominate the discussion while others remain passive. Teachers need to monitor group dynamics and ensure that all students have an opportunity to contribute.

4. **Assessment Difficulties.** Evaluating problem-solving tasks can be more complex than assessing traditional exercises. There may not be a single “right” answer, and the focus is often on the process rather than the final outcome.

To explore the impact of problem-solving methods on student engagement, a study was conducted with a group of first year students taking a General English course. The students were divided into six groups and given a task to solve a real-world problem: Is it good or bad to be busy? The study found that problem-solving activities had a positive effect on student engagement. During the task, students actively discussed ideas, shared personal experiences, and asked questions. They also demonstrated higher levels of motivation and enthusiasm compared to other classroom activities. The students reported that they enjoyed working collaboratively and appreciated the relevance of the task. They felt that it helped them develop their critical thinking and communication skills. This task made them think more deeply about the problem.

Despite the overall positive response, the study also revealed some challenges. Students with lower communication skills sometimes struggled to express their ideas or understand their peers. In some groups, one or two students dominated the conversation, while others remained silent. These issues required the teacher's intervention to ensure equal participation and maintain focus.

Based on the findings, we have come to the conclusions for using problem-solving methods:

1. **Provide Scaffolding:** For lower-level students, provide vocabulary lists, sentence frames, or model answers to support their language production. We can also give them extra time to prepare their ideas before the group discussion.

2. **Set Clear Goals:** Clearly explain the task and its objectives to the students. This will help them understand what is expected of them and stay focused during the activity.

3. Monitor Group Dynamics: Pay attention to how each group is working and intervene if necessary. Encourage quieter students to contribute and ensure that all group members have a chance to speak.

4. Reflect on the Process: After the task, spend some time reflecting on the process with the students. Ask them to share their experiences, what they learned, and any challenges they faced. This can help improve future problem-solving activities.

Thus, problem-solving methods can be an effective way to engage students in the English classroom. They promote critical thinking, collaboration, and real-world application of language skills. However, teachers need to be aware of potential challenges such as time constraints, language complexity, and unequal participation. By carefully planning lessons and providing support, teachers can maximize the benefits of problem-solving activities and create a more engaging learning environment for their students.

References:

Utami Putri A., Rusyati L., Rochintaniawati D. The Impact of Problem-Solving Model on Students' Concept Mastery and Motivation in Learning Heat Based on Gender. *Journal of Science Learning*. 2018.1(2). Pp. 71–76. URL: <https://files.eric.ed.gov/fulltext/EJ1226319.pdf> (дата звернення: 12.11.2023).

Savin-Baden M. (2016). The impact of transdisciplinary threshold concepts on student engagement in problem-based learning: A conceptual synthesis. *Interdisciplinary Journal of Problem-Based Learning*. 2016. 10(2). Pp. 1–23.

OPPORTUNITIES OF STEM EDUCATION FOR FORMING THE COMPETENCES OF STUDENTS IN CHEMISTRY

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