

**MODERN WAYS OF LEARNING AS A MEANS OF ENHANCING THE
COGNITIVE ACTIVITY OF STUDENTS**

***FORMAS MODERNAS DE APRENDIZAGEM COMO MEIO DE MELHORAR A
ATIVIDADE COGNITIVA DOS ESTUDANTES***

***LAS FORMAS MODERNAS DE APRENDIZAJE COMO MEDIO DE POTENCIAR LA
ACTIVIDAD COGNITIVA DE LOS ALUMNOS***



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ABSTRACT: This article analyzes the effectiveness of interactive teaching methods and identifies the most popular practices among students. The study explores various interactive approaches, such as small group work, case studies, business games, training exercises, and self-assessment. The research was conducted using theoretical and empirical procedures, and an investigation was applied to a sample of 150 students from different disciplines. The results indicate that small group work and case studies are the methods most employed by teachers, while students prefer business games. Debate processes, case studies, and group work are also widely favored. The article emphasizes the relevance of incorporating interactive approaches to promote active learning, critical thinking, and collaboration. These findings offer valuable insights for teachers and postgraduate students interested in implementing interactive teaching methods in higher education.

KEYWORDS: Cognitive activity. Interactive teaching methods. Discussion.

RESUMO: Este artigo realiza uma análise da eficácia dos métodos de ensino interativos e identifica as práticas mais populares entre os alunos. O estudo explora diversas abordagens interativas, tais como trabalho em pequenos grupos, estudos de caso, jogos de negócios, exercícios de treinamento e autoavaliação. A pesquisa foi conduzida utilizando procedimentos teóricos como empíricos, e uma investigação foi aplicada a uma amostra de 150 alunos provenientes de diferentes disciplinas. Os resultados indicam que o trabalho em pequenos grupos e os estudos de caso são os métodos mais empregados pelos docentes, enquanto os jogos de empresas são preferidos pelos alunos. Os processos de debates, estudos de caso e trabalho em grupo também são amplamente favorecidos. O artigo enfatiza a relevância de incorporar abordagens interativas visando promover a aprendizagem ativa, o pensamento crítico e a colaboração. Essas descobertas oferecem informações valiosas tanto para os professores como para os estudantes de pós-graduação interessados em implementar métodos de ensino interativos no contexto do ensino superior.

PALAVRAS-CHAVE: Atividade cognitiva. Métodos interativos de ensino. Discussão.

RESUMEN: Este artículo examina la efectividad de los métodos de enseñanza interactivos e identifica los métodos más populares entre los estudiantes. El estudio explora varios enfoques interactivos, incluido el trabajo en grupos pequeños, estudios de casos, juegos de negocios, ejercicios de capacitación y autoevaluación. La investigación se realizó utilizando métodos teóricos y empíricos, y se administró una encuesta a 150 estudiantes de diferentes disciplinas. Los resultados indican que el trabajo en pequeños grupos y el estudio de casos son los métodos más empleados por los docentes, mientras que los juegos de negocios reciben la mayor preferencia por parte de los estudiantes. El artículo enfatiza la importancia de incorporar métodos interactivos para promover el aprendizaje activo, el pensamiento crítico y la colaboración. Estos hallazgos brindan información valiosa para profesores y estudiantes de posgrado interesados en implementar métodos de enseñanza interactivos en la educación superior.

PALABRAS CLAVE: Actividad cognitiva. Métodos de enseñanza interactivos. Debate.

Introduction

The construction of an active cognitive posture on the part of the student is a primordial requirement for effective implementation of the competency-based approach. In this context, interactive teaching methods play an essential role by providing a source of activities for students.

The term "interactive" implies the ability to interact, allowing for the active participation of students in actions and exchanges of experiences to achieve a desired result (CHERNOVA *et al.*, 2022). Interactive teaching methods play a relevant role in promoting a deeper understanding of educational material, facilitating rapid and lasting assimilation of content, developing skills for independent knowledge-seeking, and establishing cooperative relationships among all those involved in the educational process (KOTLYAROVA *et al.*, 2023).

It is correct to state that issues related to interactivity have been studied by several renowned authors, such as N.A. Bagrova, V.V. Davydova, I.A. Zimney, G.A. Kitaigorodskaya, M.V. Klarina, A.N. Leontiev, V.A. Slastenina, V.F. Shatalova, N.E. Shchurkova, D.B. Elkonina, among others. Although these authors present different interpretations of the concept of "interactive teaching methods", there is a consensus that these methods aim to strengthen the thought process, stimulate creativity, promote initiative, and provide a personal sense of learning (KLARIN, 2000; SHCHURKOVA, 2007; WINTER, 2008).

Among the interactive teaching methods, Yu.S. Arutyunov highlights the distinction between non-imitative methods and simulation methods. Non-imitative methods include problem-based learning, seminars, discussions, lectures, and conferences. On the other hand, simulation methods are divided into two types: Non-Game, which involves the analysis of specific situations and actions according to instructions, and Game, which includes business games, game design, and role-playing, as pointed out by Arutyunov (RICHTER, 2016).

As emphasized by O.A. Golubkova and A.Yu. Prilepo, there are different categories of interactive procedures in teaching. They highlight the differences between game methods, including didactic and creative games, and discussion tactics, encompassing dialogue, group debate, and analysis of real-life situations (RICHTER, 2016).

T.S. Panin and L.N. Vavilov also distinguish between training methods, specifically communicative and sensitivity training. The communicative practice aims to develop students' dialogue skills. On the other hand, sensitivity training seeks to build empathy and the ability to understand and respond to others' emotions (RICHTER, 2016; KOSIBOROD *et al.*, 2022).

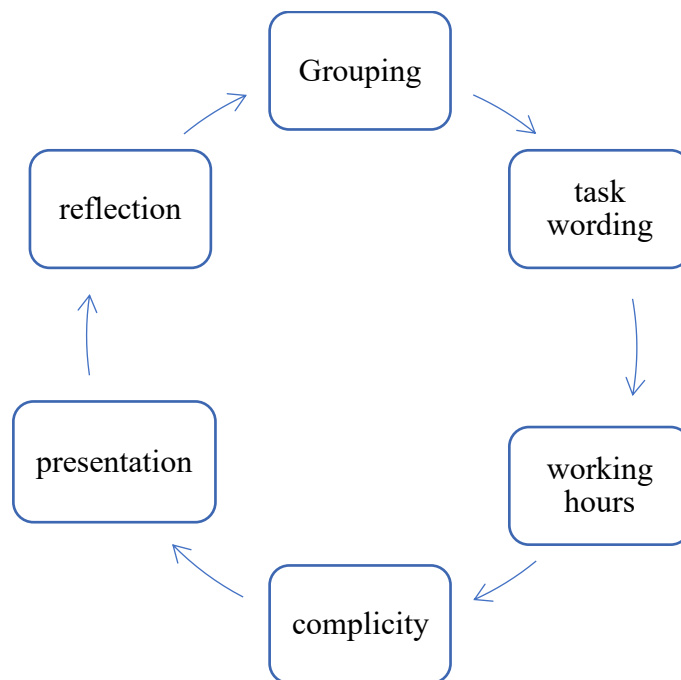
Methods

We will consider the following interactive learning methods: small group work, discussion, case study, business game (*role-playing*), training (practice exercises), and self-assessment.

In the process of "small group work", students have the opportunity to learn how to formulate and competently defend their point of view regarding the presented problem. This method allows for utilizing resources from all participants through joint activities, including those who previously played a more passive role. The effectiveness of this practice is related to the difficulty of individually dealing with problem-solving, where only the collective exchange of opinions will assist in activating students' creativity and achieving productive results.

The stages of conducting a class using the "small group work" method can be represented as follows (BAGNYUK, 2015).

Figure 1 – Stages of teaching a class using the "small group work" method



Source: Elaborated by the authors

The ‘group discussion’ approach consists of an open oral exchange of knowledge, opinions, and ideas on controversial issues or problems. This practice is conducted in relatively small groups of students, usually consisting of 6 to 12 people. The main objective of this method is not only to express and justify one’s opinion but also to evaluate the positive and negative aspects of decisions made, as well as to present different types of arguments to impact the minds

and feelings of opponents significantly. Group discussion is also recognized for its educational value, as it contributes to the development of tolerance, teaching participants to demonstrate respect for diverse opinions, control their emotions, and argue impartially. In addition, it plays a role in forming personal characteristics such as resilience, honesty, and tact.

The teaching method called "case study" involves the analysis of a specific situation to teach students to deal with information, understand the significance of the details described in the situation, investigate the problem, identify alternative solutions, and make substantiated decisions. Through the collective efforts of a group of learners, it is necessary to evaluate the proposed options and develop a practical solution. This practice aims to develop the independent thinking of participants, as well as their analytical, evaluative, and collaborative skills in group work.

A business game is a group exercise to develop a sequence of decisions in an artificially created environment that simulates an actual professional situation. This practice is commonly used in educational activities as a training tool, providing the development of creative thinking, improvement of practical skills, and promoting the formation of competencies necessary to stimulate attention and increase interest in classes. Furthermore, the business game aims to activate and enhance students' perception of educational material.

The experience gained through these games is fundamental in building more appropriate behavior in real-life situations. The information received through specific examples is easily perceived and assimilated, contributing to developing skills in making constructive decisions. Among the interactive methods, **training** technology stands out, which consists of a systematic process of improving the skills and behaviors of participants through various exercises, tasks, or games.

In the training process, communication skills are developed. During these activities, members have the opportunity to improve their abilities to express themselves clearly and effectively, as well as to listen and understand others. In addition, training contributes to the formation and adjustment of fundamental attitudes for a successful life of the individual.

One of the practices of interactive learning is the use of the **method of assessment and self-assessment** of group members. This procedure seeks to evaluate the contribution of each participant in teamwork individually. Experts often consider the analysis of the work of project members as an ideal tool for reflecting on the task performed and planning additional academic progress, including developing identified personality traits for research purposes (PLAKSINA, 2020).

In addition to assessing the actions of group peers, self-assessment plays a crucial role in psychological disciplines. In this regard, students are asked to describe how the course has contributed to their established personal goals at the beginning of their studies. They are encouraged to reflect on the acquired skills, developed knowledge, and positive changes in their thinking and behavior.

A survey was conducted based on the Industrial University of Tyumen to identify the most popular interactive teaching methods among students. The survey involved 150 students from the courses "Automated Information Processing and Management Systems", "Innovation", and "Information Systems and Technologies in Geology and Oil and Gas Industry".

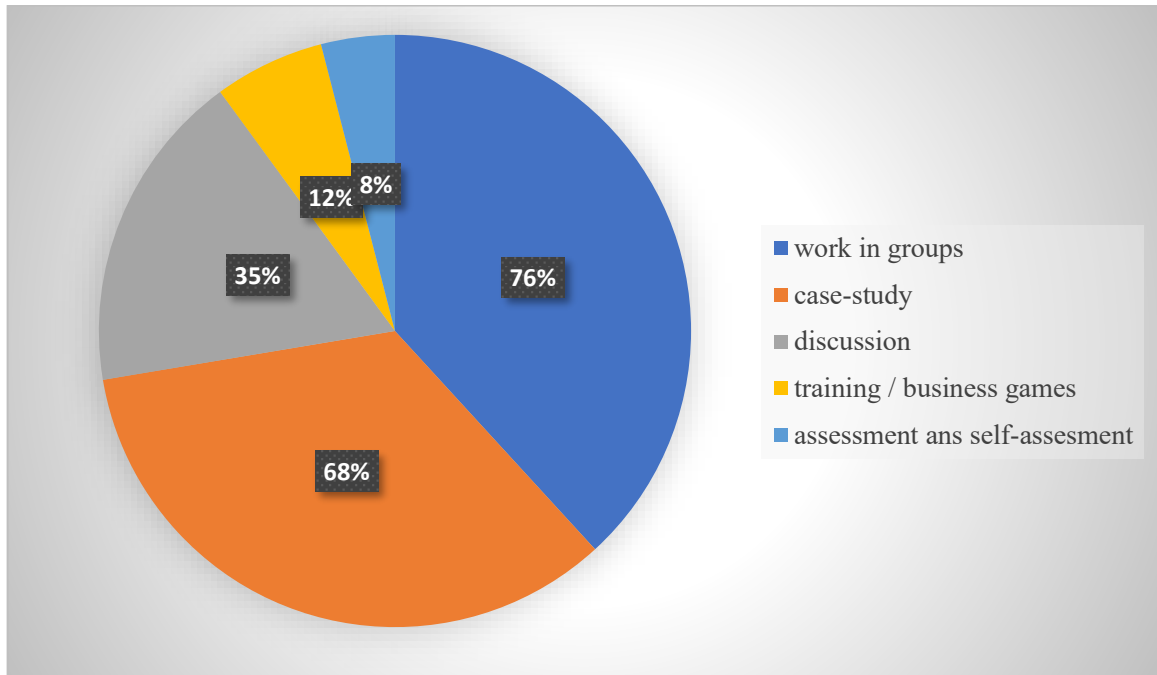
Results and Discussion

In the first question, "In your opinion, high-quality knowledge is, first and foremost...?", distinct answers were obtained from the students. Of the participants, 25% considered that high-quality knowledge is associated with a significant amount of theoretical knowledge. On the other hand, 32% of students believe that this quality is related to practical skills. Finally, 38% believe learning is achieved through a balanced combination of theory and practice.

In the second question (Figure 2), learners were asked to rank the most frequently used teaching methods by teachers. The rating scale ranged from 1 to 5, where 1 represents a method regularly used in the classroom, while 5 indicates a method rarely or never employed.

Regarding the frequency of interactive teaching practices teachers use, the results revealed that small group work was consistently employed, selected by 76% of the students. The case study method ranked second, with 68%, followed by discussion with 35%. Training exercises and business games were chosen by 12% of the participants, while self-assessment was rarely or not used at all.

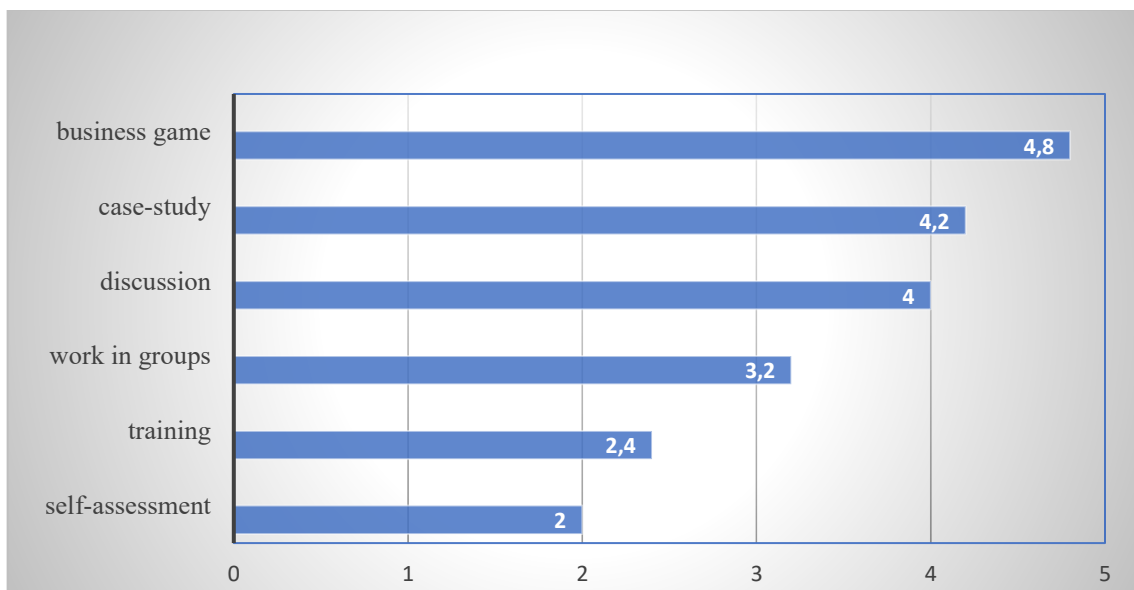
Figure 2 – Usage of interactive teaching methods by teachers



Source: Elaborated by the authors

In the third question (Figure 3), university students were instructed to mark their preferred teaching methods, assigning a score of five points for the ways they like and a score of one for those they do not like. In addition, they were asked to provide an explanation justifying their position, describing the positive and negative aspects of teaching methods, respectively.

Figure 3 – Choice of interactive teaching methods by students



Source: Elaborated by the authors

The teaching method of "business game" received a rating of 4.8 points. Students explained that the game makes learning more dynamic and enjoyable and creates a "work" environment. Next, learners highlighted the practice of case study, which, according to them, helps to engage in a professional context, teaches analysis, and finds relevant and unconventional solutions. In third place is "discussion". Third-year pupils emphasized that discussion allows them to express and argue their point of view, teaches listening and understanding of others, and emotional control. "Group work" ranked fourth. Because not all team members actively engage in group work and demonstrate responsibility, the students prioritize this teaching method. "Two or three group members do all the work while the rest do not participate or help minimally", the students reported. The students gave a score of 2.4 and 2 to the training and self-assessment methods, respectively. They believe that these means are exciting and challenging at the same time: "self-assessment" allows them to understand what they have learned, whether the knowledge has been helpful, and if they were able to handle a difficult situation, but it is not always possible to evaluate their actions objectively.

These results highlight learners' preferences regarding interactive teaching mechanisms and provide insights into perceived benefits and challenges. The findings emphasize the importance of incorporating interactive procedures to promote active learning and student engagement in higher education contexts.

Considering the use of interactive methods in the example of the topic "Leadership" in the "Team Building" course, the main objective of the class is to provide students with an introduction to the concepts of "Leader", "Manager", and "Leadership". Additionally, the course aims to discuss leadership theories and styles and develop the qualities necessary to become an effective leader.

The "Leadership" topic in the "Team Building" course addresses a series of controversial issues that require answers to questions such as "Who is a leader?" "What qualities should a leader possess?" "Is it easy to become a leader?" "What is the difference between a leader and a manager?" among others (SPIVAK, 2016). Due to the nature of these questions, the most suitable interactive method for this class is discussion. Classroom debate involves the free and oral exchange of ideas among all students. The teacher guides the process, asks questions, and decides who should speak (KHASHCHENKO, 2012).

Let us detail the stages of the discussion:

For the conversation to be meaningful and productive, it is recommended to announce the class topic to students in advance and offer a list of references to be used in preparation for

the discussion. In this way, university students can familiarize themselves with the topic and read and reflect on the material provided, which will help them be better prepared to participate in the debate. By accessing relevant references, learners can base their opinions and contributions during the discussion, thus enriching the dialogue and promoting more profound and reflective learning.

In the first stage, the preparatory phase, the argument's purpose, topic, and tasks are presented concisely, and the problem is formulated, for example, "Are leaders born or made?". In this stage, the rules of the discussion are established and developed jointly, emphasizing the importance of the problem and pointing out possible inconsistencies in the question. Students are divided into small groups of five to seven people, with adequate time allocated for the activity. Each group should have a designated leader to oversee the process and an expert who can review and report on the content discussed.

During the classroom discussion, it is essential to establish a conducive atmosphere in which students feel comfortable and can hear and see each other. This involves creating a welcoming and respectful environment where everyone has an equal opportunity to express their opinions and contributions.

In the second stage, called problem discussion, there is an exchange of viewpoints among the participants. One team argues that people inherit specific characteristics that make them successful leaders, while the other group argues that leadership is a skill that can be learned and anyone can become a leader as long as they intentionally develop the necessary qualities. During this stage, teams can challenge each other's ideas and facts, present counterarguments, and ask clarifying questions such as "Can you explain that?" or "What is your evidence?"

In this phase, the teacher is crucial in asking thought-provoking questions, encouraging pupils to think independently. Through the conversation, students have the opportunity to understand the subject matter better and develop their knowledge while also listening to the thoughts and ideas of their classmates. The teacher ensures that everyone has a chance to speak, encouraging more reserved participants to express themselves by inviting them to share their opinions and perspectives.

By motivating university students to ask questions during the discussion, the teacher plays a crucial role in helping to resolve the problems under debate. In addition, this approach also facilitates the understanding of the academic concept of leadership and allows students to assimilate theoretical material more effectively.

Learners can develop critical thinking by examining and analyzing the information received from their opponents during the discussion. This process involves evaluating different perspectives, identifying strengths and weaknesses in the arguments presented, and making decisions based on the available information.

After an active discussion, the participants move to the final stage, which involves synthesizing the interaction results. In this phase, group members decide, but it is natural that not everyone agrees, as each person is entitled to their own opinion. The debate's outcome may not be unanimous, as the goal is not to arrive at a single correct viewpoint but to exchange views, ideas, and judgments, leading to a better understanding and forming a new perspective on the issue. The conversation allowed students to develop critical thinking, enhance their ability to understand and articulate their views and generate new ideas and solutions. In this stage, the teacher briefly recaps the key points discussed, addresses the conclusions reached by the groups, and leads a collective reflection with the students. Some essential questions can be examined, such as: Did the discussion achieve its intended goal? Did the groups manage to convince opponents of their viewpoint? Did all participants have the opportunity to contribute to the debate? What difficulties were encountered during the work? Were all the rules of effective interaction observed? Finally, it is crucial to formulate new problematic questions to be discussed later, to continue promoting the development of student's critical thinking, analysis, and argumentation skills.

The pedagogical potential of discussion offers significant advantages in the field of didactics and education. In the first field, argumentation allows for activating students' cognitive activity, stimulating critical thinking and reflection, and applying debate skills that will be useful in future professional activities. In addition, discussion promotes the organization of collective movements and facilitates understanding different perspectives on a topic. In the second field, the exercise addressed offers benefits such as improving skills for working in a team, forming moral and ethical positions, and developing independence and responsibility for one's viewpoints and decisions.

The general guidelines for a good conversation should include careful planning, where the teacher clearly understands the subject matter, content, and objectives of the topic being discussed. The discussion instructions should be clear and communicated to all students, and the classroom atmosphere should be conducive to open and respectful discussion. It is strictly prohibited to mock or belittle classmates during the activity. On the contrary, it is essential to foster students' interest through positive comments and to prevent only one group member from

dominating the conversation. The teacher should ensure that all ideas are heard, even if they disagree, and conclude discussions as agreed upon to maintain time for other stages of the class.

The main advantages of the discussion method include:

- Empowering interpersonal skills such as active listening, demonstrating empathy, and establishing effective communication.
- Student-centered focus - the student becomes the primary participant in the educational process, while the teacher's role is that of a facilitator.
- Significant increase in student engagement in problem-solving discussions.
- Development of teamwork skills.
- Teaching tolerance - students learn to value and respect the diversity of ideas.
- Development of leadership skills and public speaking.

Argumentation plays a crucial role in organizing an intensive thought process when identifying different viewpoints among students to solve the problem under discussion and establishing relevant facts for the issue at hand. Participants are encouraged to examine available information critically, consider various perspectives, and present well-founded arguments to support their ideas. Furthermore, debate contributes to the development of group relationships among the members.

These findings highlight the importance of employing conversation as an interactive teaching method to enhance student engagement, foster critical thinking, and promote interpersonal skills, especially in subjects encompassing multifaceted perspectives such as leadership.

To achieve successful teaching and enhance the quality of education, it is imperative to introduce a variety of interactive approaches in teaching that have broad educational and developmental potential, allowing for maximum engagement of participants in the learning process. The role of the teacher is not limited to providing ready-made answers but rather to encourage students to seek solutions independently and organize and prepare task processes in advance.

Conclusion

The study investigated the use of interactive teaching approaches, with a specific focus on the topic of "Leadership" in the "Team Building" discipline. Several significant findings emerged by analyzing students' perceptions of the quality of acquired knowledge and their preferences for teaching methods, as well as exploring the practical application of interactive approaches through discussions.

The research results revealed that students highly value quality knowledge, a balanced combination of theoretical and practical skills. This finding emphasizes integrating theory and practice in the educational context. Additionally, analyzing students' preferences for teaching methods revealed that interactive approaches, such as case studies and discussions, were widely favored due to their stimulation for active engagement, critical thinking, and developing teamwork and communication skills.

Implementing a debate-based approach in the "Leadership" topic proved to be highly effective in achieving educational objectives. The discussion method allowed students to explore a wide range of perspectives related to leadership, develop critical thinking skills, and deepen their understanding of the subject at hand. Through engaging in reflective exchanges, participants expanded their knowledge and cultivated significant interpersonal skills, such as active listening, empathy, and effective communication.

In addition to the considerations above, the study highlighted significant pedagogical advantages of the discussion method. This practice facilitated the implementation of a student-centered approach and empowered students to play an active and participatory role in the educational process while the teacher assumed the role of a facilitator. Adopting this method promoted greater student engagement, encouraged teamwork, fostered tolerance for different opinions, and developed valuable leadership and public speaking skills.

In conclusion, the research provides valuable insights into the effectiveness of interactive teaching approaches, particularly the debate-based methodology, in fostering student engagement, critical thinking, and interpersonal skills within leadership education. The results underscore the importance of integrating theory and practice and the significant role of such conversations in achieving educational objectives. Incorporating interactive methodologies can significantly enhance the learning experience and prepare students for their future careers while encouraging future educators to consider including these mechanisms in their instructional practices to enhance the learning experience and empower students in their educational journey.

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