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RESEARCH ARTICLE

USING SOCIAL SCIENCE RESEARCH TO FORM PEDAGOGICAL PRACTICES: EVIDENCE-BASED TEACHING STRATEGIES

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Abstract

The modern trend in the field of education is to increase the active participation of learners during their learning process and to achieve this goal, it was necessary to seek the help of social sciences, especially since many of the fluctuations that occur in the individual's educational path are caused by external changes, such as those social and others. Discussing the evidence-based education tool through the social perspective is important in demonstrating more effective methods for its application, which results in the learners achieving more effective and beneficial learning outcomes in the long term. Evidence-based teaching is essentially using instructional strategies and procedures that have been proven successful through social science and pedagogical research. It is easier for teachers to make decisions when creating instructional strategies to achieve better outcomes for learners given social and educational events when they incorporate effective teaching techniques backed by unequivocal scientific evidence. To gain a deeper understanding of how learners access education and discover the most effective teaching strategies, content design incorporates social science research and evidence-based learning by presenting different educational strategies, such as active learning, cooperative learning, and problem-based learning, in addition to the flipped learning strategy, technology integration, differentiated teaching, formative assessment, and classroom management from the perspective of evidence-based learning. These technologies have the potential to enable educators to create dynamic learning spaces that meet the unique needs of their students and enhance their academic and personal career advancement. Ultimately, these evidence-based practices are crucial in preparing learners for success in the digital age.

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Introduction:-

Introduction to evidence-based teaching strategies:-

Evidence-based education, also known as evidence-based interventions, is a model in which policymakers and educators use empirical evidence to make informed decisions about educational interventions. In other words, decisions are based on scientific evidence, not opinion or experience.

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Evidence-based teaching refers to the use of teaching methods, strategies, and interventions that have been researched and proven effective through social science and pedagogical research. It involves basing educational practices on the best available scientific evidence rather than relying solely on personal experience or traditional methods of education in which the teacher is the focus of the educational process with his uniqueness of information. By integrating evidence-based teaching strategies into educational activities, the role of the learner will shift from a passive receiver to a positive active one, and the teacher becomes a facilitator and director of the educational process. The content is often distributed into two parts, a theoretical part that contains information or equations that need to be interpreted by the teacher, and the second part that complements it, which means fixing and analyzing it and extracting new methods to benefit from it and deal with it. Here often it is resorted to individual research and applied projects, therefore teachers are trained to make decisions most adequate to the individual learning needs of each of the students about their instructional strategies through which their learning outcomes will be enhanced. This approach is essential to creating effective and impactful learning environments. (Howard B, Diug B, Ilic D., 2022)

The use of social science research findings in interpreting, analyzing, and studying educational phenomena is of paramount importance. It can provide a clear vision of the changes in the learning mechanism that the learner goes through at various stages more accurately, depending on his reality and social needs, relying on the most effective educational strategies, but also creating comprehensive and attractive educational environments based on these data. By opening the way to view the results of research from various fields, and not only the social and educational ones, it will facilitate dealing with many educational phenomena. The more the teacher's skills related to the research in the educational field increase and reviewing the various types, the learning outcomes will rise and be enhanced, especially through teachers' design of teaching methods for their students that can meet their various individual needs.

Evidence-based teaching strategies are developed for effectiveness, based on the best research available in the field, enhancing the likelihood of learners achieving higher odds of success. This integration of research and practice allows for continuous improvement in teaching and learning. (Garry H, Deborah G., 2022)

Evidence-based teaching strategies offer many benefits to both teachers and learners. These strategies have been shown to have a significant impact on student outcomes and learning outcomes, facilitating teachers to provide an effective environment for learning various knowledge and skills while retaining them for a long period. It is mainly based on the active participation of learners, motivating them, and developing their critical thinking skills. They also ensure that educational practices are in line with the educational standards and promote the effective use of resources. Overall, evidence-based teaching strategies improve the quality of education and contribute to the success and well-being of students. (Garry H, Deborah G., 2022)

From the foregoing, evidence-based learning can improve learning outcomes. Therefore, this article aims to show what steps can be applied to improve outcomes and results of social research studying through this educational phenomenon. From it, we will review the most important academic terms related to the title of the article and the role of evidence-based education and social research in improving learning outcomes. We also talked about some teaching methods that support evidence-based learning to clarify the goal of the article.

Evidence-based teaching strategies in educational technology:

Several strategies in educational technology rely on evidence to form teaching.

Various forms of evaluation, as well as other informal activities, can be used to generate evidence, which refers to the documentation of activities undertaken to improve knowledge and understanding of specific topics related to how to use technology in education effectively. In this process, desk research, primary research (including mixed methods and design-based research), and other methods can be used. (Maya E, Vincent Q, Andre J., N, Philip O., 2017)

The use of evidence in educational technology refers to the reliance on improved decision-making and aligning policies and programs with effective practices that benefit student learning. In envisioning a future driven by "evidence-informed educational technology," we envision educational decision-making being influenced and directed by a foundation of current and relevant evidence that policymakers can incorporate.

To effectively address the world's education crisis, it is critical to foster a culture in which all parties involved in educational technology are committed to making evidence-based decisions. This will ensure that technology is applied in a way that effectively addresses the challenges posed by the crisis.

The role of social science research in informing pedagogical practices

Gary King and Maya Sen discussed this in an article they wrote during the year 2013 entitled "How Social Sciences Can Improve Teaching". To the reality of the applied teaching methods by teachers in classrooms and the mechanism of updating these strategies based on social sciences, they confirmed that despite the recent updates that appear annually on the methods of teaching, they tend to repeat the use of the same traditional means to teach an educational subject, and what is worse is that it was noticed that the teachers did not make an extra effort to update the content and they are satisfied with the curriculum as it is, which prevents the attainment of sustainable and effective learning outcomes. The results they reached through the application of several questionnaires, led to hurting the educational process and its results due to the change that occurred in our societies in the current era, which was marked by modern technology and social media that allowed individuals to communicate through the virtual world with individuals from unknown societies, as well as opening the way for them to continuously learn about the latest information related to the materials included in the curricula, and in particular those that are of particular interest to them. Recent developments in the context of social research have provided more explanations for how humans think and learn. The principle illustrated the importance of immediate feedback to improve learning. The learner may report learning content through repetition and mechanical memorization or even through interactive means in teaching, but he will certainly retain that information for some time directly if he receives an immediate and direct reaction during the educational activity about what he learned through the teacher's presentation of continuous evaluation activities after each content and providing detailed notes about the correctness of learning and errors in it, complementing the deficiencies in an immediate manner and without any delay. (Gary King, Maya Sen, 2013) The two researchers confirmed that direct feedback has a very effective impact on achieving more beneficial learning outcomes in all stages of education, even higher ones. Various types of research that were designed in many fields such as economic, psychological, medical, and educational clearly show immediate and frequent feedback. Social psychologists have proven that under normal circumstances, people give in to distraction for nearly half of their waking hours per day. When the teacher has information about the individual motivations of his students and their learning styles, he resorts to nourishing them and their emergence through the teaching strategy, to help him design the lessons. Social research also showed the significant impact of the social networks that individuals join on the type of food they prefer to eat (Mark A Pachucki, Paul F Jacques, Nicholas A Christakis, 2011), the extent of their happiness, and what makes them happy, as well as the possibility that the individual will appeal to remain alone or enter a state of depression. In the social environment (John T. Cacioppo, James H. Fowler, and Nicholas A. Christakis, 2009), social ties also stimulate reconsideration of several behaviors, dispensing with some or all of them and staying on those that support the survival of these ties (Burn, 2006) therefore many behavioral changes related to learning and the behavior of learners are often due to these ties, affiliating learner with a social group that has the same behaviors and interests and often have similar motives and aspirations about learning, including the diligent student. Whoever seeks to join a social group whose academic success is not a priority, his academic achievement will decline because his goal of learning is shifted towards the common goal of the group he wants to join (social groups are usually colleagues from the same class, school, or from outside the school, and there are also mixed groups, and regardless of that, what unites them is the existence of goals or a common goal that drives them to meet and interact with each other to achieve it).

From the foregoing, we find that social science research plays an important role in facilitating the design of teaching strategies that are more appropriate to the educational reality, as well as enabling educators to modernize and develop teaching methods. By referring to the results of social science research, teachers can gain valuable insights into effective instructional strategies and design their teaching plans accordingly. (Cristea, 1998) As we mentioned previously, the teacher's reliance on research and reality that has been proven correct by scientific research and study is the method of evidence-based teaching strategies.

One example of the use of social science research in education is the use of teaching strategies to support feminist ideas based on family trees. Such studies demonstrate how research findings can be directly applied to the development of innovative and effective teaching methods. Based on the included teaching strategies to link the content of the educational material to the reality of society and the topics that fall within the circle of interest of the learners.

Many researchers have proven that teaching strategies based on research have a significant impact on learners' achievement. They have highlighted the importance of achieving the desired results through various strategies and teaching methods based on evidence and research that support the methods used by teachers and their positive effects on student outcomes. By incorporating evidence-based strategies into the educational pathway, educators can ensure that they're effective and in line with the latest scientific knowledge. (Dean Cairns, Shaljan Areepattamanni, 2021), (Paula J. Stanovich, Keith E. Stanovich, 2003).

Fundamentals of applying evidence-based education

The study conducted by Jeff Masterzo in 2018, titled „Research on the Role of Evidence in Teaching and Learning”, sponsored by: the Australian Council for Educational Research (ACER), in Sydney, Australia. (Masters, 2018) We find that the most prominent stages of the application of evidence-based education are:

The first stage, determining the level of competence that has been achieved by the learner: Evidence-based teaching includes directing the learner in the direction that allows him to explore the skills acquired through the educational path and the reality of his role in his learning process. This is done through preliminary assessments of the learners and discussing the results with them. This plan is a starting point for customized and directed education. Because it is necessary to understand and determine the levels of student learning which is essential to applying more effective teaching strategies.

The second stage, selecting teaching methods that have proven effective in enhancing learners' results and are compatible with their individual needs in learning according to the results of the first stage, to direct teaching strategies and educational path inputs toward enhancing student learning. It is worth noting that the results of research and rigorous educational studies integrated with the professional teaching experience that the teacher possesses will facilitate the design of a teaching strategy based on the official educational goals and others that are compatible with the needs of individual learners. Raising their participation rate in classroom activities effectively increases the possibility of learners achieving new outcomes, being more beneficial to them in all circumstances.

The third stage is the evaluation of the educational outcomes and the effectiveness of the evidence-based teaching strategy, by providing direct feedback to the learners by discussing the results they obtained and accurately identifying the points in which improvement or regression appeared compared to the results of the initial evaluation so that they can be directed towards ways to stabilize the level. They were able to reach or to avoid the mistakes they made and so on, while the teacher was able to identify the pros and cons of the content of the strategy that he made.

An evidence-based education researcher calls for the integration of teachers' practical experiences and their ability to conduct research about educational phenomena and to accept and seek constructive criticism, in addition to their ability to apply the integration of reliable evidence collected locally with external research to guide customized and effective teaching.

Evidence-based teaching aims to ensure that each learner has access to learning opportunities that serve his individual needs, by promoting the development of his personality in an integrated manner with his community and facilitating his attainment of the various competencies that will be of high importance in the future.

Teaching strategies compatible with the evidence-based type

Research-based teaching practices have consistently proven to be beneficial in improving individual learning and academic success. Here are some teaching practices that adhere to evidence-based teaching principles:

Metacognition:

Assisting learners in developing metacognitive skills by allowing them to reflect on their learning process, set goals, and assess their comprehension. Metacognition helps learners become more self-directed learners;

Scaffolded Instruction:

Structured assistance and guidance are provided for learners while they navigate through difficult activities or topics. Scaffolded instruction assists them in building prior understanding and skills, progressively increasing their independence;

Feedback and Feedforward:

Providing constructive feedback to students on their work is an important aspect of helping them improve. It involves highlighting their strengths and giving suggestions for how they can do better. Additionally, offering guidance before students start a task can also be beneficial. This helps to set them up for success and gives them the tools they need to do their best;

Inquiry-Based Learning:

Through research and exploration, inquiry-based learning encourages students to investigate topics of interest, leading to a deeper understanding of the subject matter while promoting critical thinking and problem-solving skills;

Concept Mapping or Visual Representations:

Can be used to assist students in organizing and linking ideas. By illustrating connections between concepts, concept mapping facilitates meaningful learning;

Classroom Discussion:

Facilitate meaningful class discussions where students can share ideas, ask questions, and debate with their classmates. This strategy promotes active learning and deeper understanding;

Peer Tutoring:

Students are encouraged to work in pairs or small groups to help each other learn and reinforce concepts. Peer tutoring allows students to explain concepts in their own words, strengthening their understanding;

Formative assessment strategies:

Periodic assessments, examinations, and feedback are used to check students' progress and understanding throughout the learning process. Formative evaluation identifies areas in which students may require further assistance and enables prompt intervention;

Technology integration in teaching;

Active learning strategies:

Active learning is a teaching strategy that adopts the active involvement of learners in their learning process and in building their knowledge. Research and realistic experiences of both learners and teachers have shown that active learning approaches meaning interactive activities are more effective in acquiring knowledge by learners compared to traditional methods. Among the most important benefits of including active learning strategies in the educational process are:

- Enhances critical thinking skills;
- Promotes a deeper understanding of concepts;
- Promotes cooperation and communication between learners;
- Increases overall student engagement.

Active learning techniques are included in the classroom after conducting a preliminary assessment of the learners' scientific and personal abilities and skills, identifying the types of intelligence and their levels for each learner separately, and the type of learning that dominates his style, so that the teacher can analyze the results to obtain information that he can return to adopt teaching methods equivalent to the levels of intelligence and learning styles. Elements from real life and events that attract their attention and arouse their curiosity(Cristea, 1998), which is one of the most important when attracting learners that lead to their active presence and reduce periods of inattention during teaching activities.

To name a few, one of the most important teaching methods that activate the active participation of students is the use of case studies, where learners analyze real-life scenarios and apply their knowledge to solve problems. It is a good way to enhance critical thinking and problem-solving skills and apply theoretical concepts to practical situations. The description applies to self-evaluation and self-directed learning in addition to group discussions and role-playing or reversal of projects, Jigsaw. By adopting these means, teachers can create an interactive and attractive learning environment for learners, provided they are aware of the need to adopt strategies that are consistent with the formal and personal learning goals, allowing them to actively interact with the content.

We conclude from the foregoing that integrating active learning strategies into the educational process makes it easier for teachers to enhance student learning and critical thinking skills, allowing them to create a dynamic and interactive classroom environment.

Cooperative learning strategies:

Cooperative learning is a teaching strategy that includes organizing learners' interactions and preparing them for collaborative work, by promoting active participation and enhancing a sense of belonging to the educational social group (colleague learners). (Gage & N., 1964)

By enhancing the skills of cooperation, communication, and problem-solving, qualifying learners to meet the requirements of the workforce in the twenty-first century is more realistic, as teamwork and personal competencies are highly valued, which prepares the learner for different work environments in the future.

Problem Based Learning strategies:

ProblemBased Learning (PBL) is a teaching method that uses complex real-world problems to facilitate the learning of concepts and enhance learners' critical thinking skills. This approach provides many benefits, including increased student engagement, motivation, and the ability to apply knowledge to real-life situations. Research has shown that evidence-based teaching strategies, such as PBL, have a significant impact on improving learners' outcomes, in particular by giving them opportunities to explore and analyze real-world problems, applied as a project or linked to teaching methods such as case studies, simulations and linked to continuous assessment and direct feedback.(Johnes, 2023)

Flipped classroom model:

The flipped classroom model is an innovative teaching approach that has gained popularity in recent years. It refers to educational activities that include actions opposite to the traditional teaching method, where students look at the learning content according to the curriculum outside the classroom through pre-recorded lectures, readings, or online resources, and then they create an individual or group plan to present the main elements of the content related to the lesson in front of their colleagues and the teacher, where they have to follow the information that was presented and intervene in an organized manner when there is wrong or unclear information that needs interpretation while the teacher also follows up the content to guide completing the missing information, providing direct and immediate reinforcement. This allows more interactive classroom sessions where students can actively apply their knowledge and participate in collaborative activities under the teacher's supervision and limited intervention only as an extreme case and to organize the activity as a whole.

One of the main benefits of the flipped classroom model is that it creates a better learning experience for students. Research has shown that the flipped classroom approach significantly improves student performances and interactions. It is one of the teaching methods that learners love to repeat. Like the previous ones, the teaching methods that have been talked about require the same basic steps to be included in the teaching strategies of careful planning and application of evaluation for upbringing and education. Technology plays a crucial role in implementing the flipped classroom model, as it facilitates the delivery of pre-recorded lectures through various online educational applications. (Nouri, 2016)By incorporating flipped classroom strategies, teachers can customize learning experiences, cater to diverse learning styles, and enhance learners' independence. It also allows for more individualized feedback and assessment, as teachers have more opportunities to observe and interact with their students during classroom activities.

Differentiated instruction:

Differentiated learning is an approach to education that involves designing lessons to meet the individual interests, needs, and strengths of each learner. This pedagogical practice recognizes that learners have diverse learning styles and abilities, and seeks to provide multiple teaching entry points that allow all learners to participate and understand. This approach has many benefits, including improving student engagement, increasing academic achievement, and boosting self-confidence. Research has shown that this method is effective in supporting learning students with learning disabilities, as it provides them with a variety of ways to learn and succeed.(Annemieke E. Smale-Jacobse, Anna Meijer, Michelle Helms-Lorenz, Ridwan Maulana, 2019)

Adapting teaching methods to meet the needs of diverse learners is central to implementing differentiated learning. Inclusive teaching practices strive to serve the needs of all students, regardless of their background or

identity. When students with special educational needs are placed in the general classroom, facilitating physical, human, and instructional means are often provided with effective inclusion.

There are many strategies that teachers can use to implement differentiated learning in their classrooms. These strategies include creating independent projects based on each student's strengths and interests, providing short lessons and mini-discussion circles to address specific educational needs, and incorporating reflection and goal-setting activities with teaching strategies. Differentiated learning can also include the use of learning strategies that help students organize and use specific skills to obtain curricular content more effectively. In addition, educators can use technology tools, such as adaptive learning platforms or online resources, to provide interaction through personalized instruction and support;

Classroom management strategies:

Effective classroom management is of utmost importance in creating a conducive learning environment for students. Research has shown that well-implemented classroom management strategies have a significant impact on student outcomes.

By maximizing structure and establishing clear expectations, teachers can create a positive and productive learning environment that promotes student engagement. Classroom management is the process of creating and maintaining a positive and interactive learning environment in which students can learn successfully. Classroom management includes a set of skills and practices that teachers use to create a safe, respectful, and orderly environment where students feel comfortable and able to learn.

Many evidence-based classroom management strategies can help teachers create a positive and interactive learning environment. Some of these strategies include:

- Designing the tactical contract and respecting its clauses by the teacher and the learners since the beginning of the school year: A tactical contract is oral, including the rules that have been reached with the consent of the learners as essential to work within the classroom about social and academic relationships and ethics. Students must have a clear understanding of what is expected from them in the classroom and to respect the content of the contract, which applies to the teacher as well;
- Direct reinforcement of positive behaviors to be fixed and treatment of negative behaviors to avoid fixation and removal directly from the behaviors of the learner, as well as dealing, directly with any educational problem when it occurs to avoid the emergence of the phenomenon of the rolling snowball;
- Promote active engagement using teaching strategies: Fun and interactive to ensure the continuous involvement of learners in the teaching process;
- Provide correct feedback on all events of teaching activities: The feedback teachers give to students must be specific and constructive so that students can improve their performance.

In addition to these strategies, teachers can be equipped with new technology tools and techniques to facilitate and increase the effectiveness of classroom management. For example, interactive whiteboards as well as learning management systems can be used to provide feedback to learners.

These evidence-based teaching strategies can be adapted to different subjects and grade levels, and educators can combine them to create a dynamic and effective learning environment for students.

Conclusions:-

The utilization of evidence-based teaching strategies, which are derived from rigorous social science research, holds immense significance in the enhancement of pedagogical practices. By incorporating the insights gained from research, teachers can augment their teaching methodologies and cultivate more impactful learning environments. Active learning, cooperative learning, problem-based learning, the flipped classroom model, technology integration, differentiated instruction, formative assessment, and classroom management strategies are all exemplars of evidence-based approaches that have demonstrated efficacy in fostering student engagement and facilitating academic achievement. By integrating these strategies into their instructional practices, educators can ensure that they are providing optimal education to their students. Ultimately, the adoption of evidence-based teaching strategies contributes to the overarching objective of enhancing student learning outcomes and equipping students with the necessary skills for future success.

In summary, the utilization of evidence-based teaching strategies presents considerable advantages for educators and students alike. By utilizing instructional practices that are rooted in the most reliable scientific evidence, educators can make informed choices that facilitate improved student learning outcomes and foster productive learning environments. The role of social science research in forming pedagogical practices cannot be overstated, as it provides invaluable insights into the learning process and identifies the most efficient instructional strategies. The incorporation of research findings into teaching methods enables ongoing enhancement and guarantees that instructional practices are firmly grounded in evidence.

By involving students as active participants in their learning, active strategies aim to foster critical thinking abilities, promote a deeper comprehension of concepts, encourage collaboration, and increase overall student engagement. In contrast, cooperative learning strategies emphasize students working together in small groups, fostering a sense of community and belonging, and enhancing social skills.

The implementation of problem-based learning strategies involves the utilization of intricate real-life problems as a means to cultivate learning and enrich critical thinking abilities. In contrast, the flipped classroom model, which involves the reversal of traditional teaching methods, fosters active participation and engagement, thus resulting in an improved educational experience for students.

The integration of technology in teaching, provides educators with the opportunity to introduce innovation into their instructional practices, thereby enriching the learning experiences of students. Through the deliberate selection of technology tools that are grounded in research, teachers can cultivate dynamic and impactful learning environments.

Inclusive teaching practices, such as differentiated instruction, prioritize the unique requirements of each student, ensuring that various avenues for engagement and comprehension are available. By incorporating formative assessment strategies, educators can promptly evaluate progress and tailor instruction to suit individual learning needs, thereby fostering effective and targeted learning experiences.

To establish a conducive atmosphere for learning and facilitate student participation and achievement, it is crucial to implement efficient techniques for managing the classroom effectively.

By integrating evidence-based teaching strategies into their educational approaches, educators gain the ability to adjust and develop their methodologies. This ultimately results in improved student outcomes, more enriching learning experiences, and a greater overall sense of achievement and well-being for students.

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