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Learning Mathematics through Experience: Enhancing the Enthusiasm of Second-Grade Students in Vietnam

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Abstract--This research aims to explore the application of experiential mathematics education to enhance the enthusiasm of second-grade students in the context of Vietnamese education. The research methodology is based on conducting a specific theoretical study of the benefits of experiential mathematics education and the significance of mathematical enthusiasm. This paper provides an overview of the theory of experiential mathematics educatin, focusing on understanding the importance of mathematical enthusiasm in the teaching process and evaluating the current state of mathematics education for second-grade students in Vietnam. The research results emphasize that learning mathematics through experience can create an exciting and effective learning environment for second-grade students. This method helps them grasp mathematical knowledge with greater enthusiasm and provides opportunities for active participation in the learning process. However, it also poses some challenges in implementation, such as adapting to the Vietnamese education, this paper's research highlights the importance of applying experiential mathematics education to enhance the mathematical enthusiasm of second-grade students in Vietnam and provides theoretical foundations for its effective implementation in the Vietnamese education denomical environment.

Keywords---experiential mathematics education, mathematical enthusiasm, teaching mathematics to second-grade students, theoretical research, Vietnamese education.

Introduction

Education is one of the most critical factors in a nation's development. The teaching of mathematics in schools plays a crucial role in fostering logical thinking and problem-solving skills in students. Learning mathematics not only imparts knowledge but also develops the ability to think logically and face challenges. However, learning mathematics is not always enjoyable for students, especially at the second-grade level.

In Vietnam, second-grade students often encounter a traditional method of teaching mathematics in which mathematical knowledge is presented in an abstract and dry manner. This approach can lead to a loss of interest and anxiety among students when learning mathematics. In the current educational environment, the appeal of mathematics is often overshadowed by the pressure to understand and memorize facts, rather than experiencing and deeply understanding how mathematics can be applied in their daily lives.

Nevertheless, there is an approach that many teachers and educators have started to apply to make learning mathematics more enjoyable for second-grade students: learning mathematics through experience. This method focuses on learning through practical activities, such as practice, interaction, and visual engagement with mathematical concepts. It creates opportunities for students to experience and apply mathematics in their daily lives. Throughout this process, students not only acquire knowledge but also develop logical thinking, problem-solving skills, and a genuine interest in mathematics.

According to Gómez (2020), the method of learning mathematics through experience has been proven to be beneficial for students' development. Gómez's research has shown that learning mathematics through experience helps students practice observational, analytical, and problem-solving skills more effectively. It also creates a positive and exciting learning environment for students, helping them build confidence and a love for mathematics.

However, the implementation of the method of learning mathematics through experience in the educational context in Vietnam still faces several challenges. Some of these challenges may include the lack of awareness among teachers regarding this method, the appropriateness of this method for second-grade students, and the need to adjust mathematical knowledge to align with the experiential learning approach (Lo et al., 2017; Pan et al., 2022).

This article raises questions about the feasibility of applying the method of learning mathematics through experience in Vietnam and how to promote enthusiasm for learning mathematics among second-grade students in the context of Vietnamese education. It also encourages specific research and evaluation of the application of the experiential learning method to foster enthusiasm and the effectiveness of learning mathematics for second-grade students in Vietnam.

Concept of learning mathematics through experience

Definition and scope of learning mathematics through experience

Learning mathematics through experience is an instructional method that focuses on learning by engaging in practical activities, visual interaction with mathematical concepts, and stimulating students' curiosity and creativity. This method not only emphasizes learning mathematical knowledge but also provides opportunities for students to experience and apply this knowledge in real-life situations.

Learning mathematics through experience positions students as explorers of mathematical knowledge. Instead of merely absorbing knowledge from textbooks and chalkboards, they experience mathematics by participating in practical activities and interacting with the world around them. This involves applying mathematical concepts to real-life situations, conducting experiments, solving practical problems, and analyzing specific mathematical scenarios (Lazarides et al., 2018).

A crucial aspect of learning mathematics through experience is encouraging students to establish connections between mathematical knowledge and their everyday lives. Rather than viewing mathematics as an isolated subject, students come to understand that mathematics has broad applications in daily life and can help them gain a deeper understanding of the world around them. Students are encouraged to ask questions, pose challenges, and devise mathematical solutions to real-life problems, from calculating the value of a product in a store to designing models to address societal issues (Dixon et al., 2009; De Smedt et al., 2009).

The primary advantage of learning mathematics through experience is the ability to blend mathematical knowledge acquisition with problem-solving skill development. Students are encouraged to think logically, creatively, and practically. By formulating and testing hypotheses, they develop analytical thinking and the ability to apply knowledge to specific situations.

Lai (2018), researched the benefits of learning mathematics through experience and found that this method not only imparts mathematical knowledge but also nurtures essential life skills. Students become curious, creative, and confident when facing challenges. Learning mathematics through experience fosters students' enthusiasm and a deeper appreciation for mathematics by helping them recognize the subject's significance in daily life and its practical value.

Smith (2020), also explored how learning mathematics through experience can enhance mathematics education and improve academic performance. This method deepens students' understanding of mathematical concepts and effectively develops problem-solving skills.

The development history of the experiential learning method in mathematics

The Experiential Learning Method in mathematics is not a novel concept; rather, it has a significant developmental history. Understanding the developmental history of this method helps us gain deeper insights into its origins, prospects, and value in modern mathematics education. In this section, we will examine the developmental history of the Experiential Learning Method in mathematics from its early years to the present and see how it has had a profound impact on mathematics education (Thu, 1997; McGuinness et al., 2021).

The history of learning mathematics through experience can be traced back to the 19th century when John Dewey, a renowned philosopher and educator, particularly focused on the integration of education and practical experience. He argued that optimal learning occurs when students engage in solving real-world problems and

construct knowledge from their experiences. Dewey laid the foundation for experiential learning philosophy and developed fundamental ideas for learning mathematics through experience.

A significant milestone in the history of learning mathematics through experience was the emergence of the "Humanistic Movement" in mathematics education in the late 1960s and early 1970s. This movement encouraged reevaluating a human-centric approach to mathematics and exploring visual and experiential teaching methods. Educators and teachers made efforts to create creative, explorative, and engaging learning activities to encourage active student participation in mathematics learning (Le et al., 2021).

During this period, the Experiential Learning Method focused on applying mathematical knowledge to real-life situations and generating imaginative experiences for students to interact with mathematical concepts. The connection between human experience and mathematical knowledge has become more critical than ever (Quyen, 2021).

The theory of learning mathematics through experience has evolved significantly in recent decades. Today, it not only emphasizes teaching mathematics through practical activities but also integrates with the development of technology and creativity in education. Applications, mathematical games, and diverse teaching materials have opened up many opportunities for students to experience mathematics excitingly and vividly.

Smith (2020), addressed the development of learning mathematics through experience in his article, establishing essential links between the history of this method and its modern applications. Furthermore, the research by Brown & Johnson (2019), delved into the impact of experiential learning on mathematical academic performance. This research provides additional insights into the history and effectiveness of the Experiential Learning Method and its progress in mathematics education.

One of the most notable developments of the Experiential Learning Method is its integration with technology. Technology has created numerous new opportunities to make mathematics learning more engaging and interactive. Mobile applications, educational software, mathematical games, and digital resources have become integral components of this method.

Mobile applications like "DragonBox" and "Prodigy" have transformed mathematics learning into an exciting adventure, where students can solve mathematical puzzles and earn rewards. While they tackle these puzzles, they gain a deeper understanding of mathematical concepts. The combination of gaming and mathematics has helped students see mathematics as not just a series of numbers in a textbook but also as an enjoyable game.

Educational software such as Geogebra and Desmos has provided powerful tools for students to create, explore, and perform mathematics. They allow students to create graphs, perform calculations, and explore mathematical concepts visually. The fusion of technology and experiential mathematics enables students to realize that mathematics is applicable in the real world and holds practical value in their daily lives.

In conclusion, the history of the development of the Experiential Learning Method is a long and fascinating journey. From its early days with the ideas of John Dewey, it has expanded to encompass the integration of technology and the development of mathematical applications, games, and digital materials. Research has shown that this method can improve mathematical academic performance and help students develop various essential skills. Learning mathematics through experience is not merely about teaching mathematics but also about approaching mathematics in daily life and bringing it closer to students.

Benefits of experiential learning in mathematics

The Experiential Learning Method in mathematics has become an integral part of modern mathematics education and has garnered the attention of educators, researchers, and governments worldwide. Theory and research have demonstrated that learning mathematics through experience offers several significant benefits to students and the mathematics teaching process. Below, we will explore the key advantages of this method based on high-quality materials and research.

Enhanced Understanding of Mathematics: One of the most significant benefits of experiential learning in mathematics is its ability to deepen students' understanding of mathematical concepts. Instead of merely memorizing formulas and rules, students are encouraged to interact directly with mathematical concepts through practical activities and experiences. When they see mathematics applied in real-life situations, they have the opportunity to gain a clearer understanding of its significance and applications. Mason's (2017) research, for example, focused on using experiential learning to help students understand the Fibonacci sequence concept. Instead of teaching students only the formula, he proposed an engaging activity involving constructing the Fibonacci sequence using wildflowers. As a result, students not only learned how to create the sequence but also gained a deeper understanding of the mathematical principles behind it.

Development of Problem-Solving Skills: Experiential learning in mathematics also aids in the development of students' problem-solving skills. Rather than solving problems only on paper, students must apply mathematical knowledge to real-world situations and find solutions to complex issues. This helps students develop logical thinking skills, analytical abilities, and the capacity to seek creative solutions. Research by Jonsson & Svingby (2007), found that experiential learning in mathematical problems. Instead of receiving pre-existing problems, students are encouraged to create their own and explore solutions independently. This fosters independence and confidence in tackling mathematical challenges.

Stimulated Interest in Mathematics: An important aspect of experiential learning in mathematics is its ability to stimulate students' interest in the subject. Engaging in enjoyable activities and interacting with mathematics in real-world contexts often makes mathematics more appealing to students. Anderson & Sullivan's (2019), research found that experiential learning in mathematics created a positive and exciting learning environment for students. They developed numerous experiential math activities that combined mathematics and art, making students realize that mathematics can be enjoyable and creative. Creating math games, simulating real-life scenarios, and exploring mathematical problems in an exciting environment have sparked students' curiosity and interest.

Development of Vital Life Skills: In addition to direct benefits to mathematics learning, experiential learning in mathematics also helps develop a range of crucial life skills. Students learn to work in teams, exchange ideas, generate creative solutions, and even manage their time. These skills are not only valuable in mathematics but also in everyday life and future careers.

Promotion of Diversity in Learning: Experiential learning in mathematics also fosters diversity in learning. Instead of a fixed teaching style, students can engage in various activities and choose how they want to approach mathematics. This means that this method can cater to various types of students, including those with different learning styles.

Establishing a Strong Foundation for Subsequent Mathematics Learning: Finally, learning mathematics through experience helps build a solid foundation for future mathematics learning. When students gain a deeper understanding of mathematical concepts and develop problem-solving skills, they become more confident in facing more complex mathematical challenges at higher levels of education.

The author believes that learning mathematics through experience is not just a teaching method for mathematics; it is an innovative approach that encourages curiosity and kindles students' interest in mathematics. It helps students gain a deeper understanding, develop problem-solving skills, and create a positive learning environment. Moreover, it develops essential life skills and promotes diversity in learning. This is a valuable method for enhancing the quality of mathematics education and fostering students' development.

The significance of mathematical interest

The role of interest in the learning process

Interest plays a crucial role in student's learning process and significantly influences their academic performance. Promoting mathematical interest in teaching can help students actively engage, focus, and efficiently acquire knowledge. In this section, we will examine the vital role of interest in the learning process and how it can be generated and nurtured within an educational environment.

Interest Stimulates Engagement: Mathematical interest is a vital factor in stimulating students' participation in the learning process. When students find mathematics exciting and appealing, they willingly engage in learning activities actively. They don't just complete tasks; they explore and gain a deeper understanding of mathematical concepts. Research by Ainley & Ainley (2011), has shown that mathematical interest promotes active participation and positive interaction in the classroom.

Provides a Focal Point for Concentration: Mathematical interest also plays an essential role in providing a focal point for students' concentration. When students find mathematics interesting, they can easily concentrate on their lessons and tasks. Interest helps them forget disruptive elements such as boredom or stress. Research by Hidi & Renninger (2006), found that interest improves students' concentration and creates a focused learning environment in the classroom.

Promotes Inquiry and Creativity: Mathematical interest can stimulate students' inquiry and creativity. When they have a genuine interest in mathematics, they tend to ask questions and seek answers. They are inclined to conduct indepth research and independently develop their knowledge. This not only helps them gain a deeper understanding of mathematics but also fosters critical research and creativity skills crucial for personal development. Csikszentmihalyi (2015), has addressed the role of interest in promoting creativity and research.

Creates Motivation for Learning: Mathematical interest also plays a crucial role in motivating learning. Students often perform better when they find a subject interesting and engaging. Interest serves as an intrinsic motivator that encourages them to set goals and strive to achieve them. Research by Ryan & Deci (2017), has emphasized that interest is a significant factor in promoting learning motivation.

In conclusion, the author suggests that mathematical interest plays a vital role in students' learning process. It stimulates engagement, provides a focus for concentration, promotes inquiry and creativity, and creates motivation for learning. To generate mathematical interest in the classroom, teachers need to establish an exciting learning environment, employ creative teaching methods, and encourage students' research-oriented thinking.

Factors influencing mathematical interest

Students' mathematical interest is not solely dependent on the subject itself; it is also influenced by several other factors. These factors can have either positive or negative effects on students' mathematics learning and interest. We will examine some essential factors that can influence students' mathematical interest, based on research and reference materials.

Learning Environment: The learning environment plays a crucial role in shaping students' mathematical interests. A positive, stimulating, and encouraging environment can foster interest. In contrast, an unstimulating and pressure-filled learning environment can dampen mathematical interest. Research by Hidi & Renninger (2006), has shown that an interesting and supportive learning environment can generate mathematical interest in students.

Teaching Methods: Teaching methods also play a vital role in generating interest. Traditional teaching methods that rely solely on theory presentation and paper-based exercises often fail to stimulate students' interest. Conversely, creative teaching methods that use experiential learning and encourage creative thinking can foster interest. Research by Anderson & Sullivan (2019), found that creative teaching methods can stimulate mathematical interest.

Mathematical Confidence: Students' mathematical confidence is also crucial in generating interest. Students may lose interest if they feel unconfident or anxious about mathematics. Mathematical confidence can be built by helping students master mathematical knowledge and practice problem-solving. Research by Pajares & Miller (1994), has emphasized the importance of mathematical confidence in promoting mathematical interest.

Support from Teachers and Family: Support from teachers and family significantly influences students' mathematical interests. Teachers and family members can encourage students by creating a comfortable environment, providing support, and offering encouragement when students face difficulties. Research by Ainley & Ainley (2011), has found that support from teachers and family can foster mathematical interest.

Opportunities for Self-Management and Choice: Self-management and choice also play an essential role in promoting mathematical interest. Students tend to be more interested when they have the opportunity to manage their learning and choose how they want to approach mathematics. Research by Ryan & Deci (2017), has highlighted that self-management and choice can create intrinsic motivation in students.

The author observes that the factors influencing students' mathematical interest form a complex and diverse field. The learning environment, teaching methods, mathematical confidence, support from teachers and family, and opportunities for self-management and choice all play significant roles. To promote mathematical interest, teachers and families need to work together to create an exciting learning environment, encourage confidence, and support students throughout their learning journey.

Theories of promoting mathematical interest

The theories of promoting mathematical interest have attracted the attention of numerous researchers and educators in improving students' learning processes. Several aspects and theoretical models have been proposed to help create a teaching environment that fosters mathematical interest. Below, we will explore some significant theories in promoting mathematical interest.

Self-Regulation Theory of Learning: The self-regulation theory of learning focuses on providing opportunities for students to engage in managing their learning process. According to this theory, students are encouraged to set individual learning goals, determine how they want to learn and monitor their learning progress. This empowers students to feel autonomous and responsible for their learning, a crucial factor in promoting interest. Zimmerman (2002), on the self-regulation theory of learning, has emphasized the role of students managing themselves in fostering interest.

Interest Theory: Interest theory focuses on creating an exciting learning environment to generate mathematical interest. According to this theory, students are encouraged to engage in learning activities based on their interests.

Teachers have the responsibility to create engaging lessons relevant to students' daily lives to stimulate their interest. Renninger & Hidi (2015), have discussed interest theory and how it can be applied to promote mathematical interest.

Self-Determination Theory: The self-determination theory studies how to promote intrinsic motivation in learning. According to this theory, students feel interested in mathematics when they perceive control and autonomy in the learning process. The self-determination theory particularly focuses on meeting students' basic needs for autonomy, working for enjoyment, and feeling related to the subject. Ryan & Deci (2017), have investigated the self-determination theory and how it can be applied to foster mathematical interest.

In examining these theories, the author observes that the field of theories regarding the promotion of mathematical interest is diverse and intriguing. Theories such as self-regulation theory of learning, interest theory, and self-determination theory have played a significant role in developing teaching methods and creating a positive and stimulating learning environment to foster mathematical interest. To promote mathematical interest, teachers should apply the principles from these theories and create a positive and stimulating learning environment.

Mathematics curriculum for grade 2 in Vietnam

Structural characteristics of the grade 2 mathematics curriculum in Vietnam

As with the general mathematics curriculum, the Grade 2 mathematics curriculum in Vietnam has a linear structure combined with a "spiral progression" (concentric, expanding, and gradually deepening). The Grade 2 mathematics curriculum also revolves around and integrates three knowledge strands: Number and Calculation, Geometry and Measurement, and Statistics and Probability. From the specific content presented above, the structural characteristics of the Grade 2 mathematics curriculum include:

Providing students with a systematic grasp of fundamental mathematical concepts, principles, and rules during the basic education stage. This fundamental knowledge sets the stage for further learning and can be used in daily life. The acquired basic knowledge can facilitate students in problem-solving in real-life situations systematically and accurately.

Including various content related to practical applications in daily life. This is an essential development in the current era. The fundamental mathematical knowledge and skills acquired will allow students to begin independently solving practical problems in real life systematically and accurately.

Developing students' qualities and capabilities. It includes content designed to develop critical knowledge and key skills, creating opportunities for students to experience and apply mathematics to real-life situations. It establishes connections between mathematical ideas, mathematics and reality, and mathematics and other subjects, especially in the STEM education field.

The curriculum content has a logical, abstract, and abstract character, thanks to ensuring a balance between "learning" knowledge and "applying" knowledge to solve specific problems. This helps develop the relationship between "learning" and "doing" into "learning" and "applying." It further emphasizes the formation and development of students' qualities and capabilities, making mathematics more familiar and practical in daily life.

The curriculum content provides opportunities for students to use modern teaching aids and technological devices, especially electronic computers and handheld devices that support the process of exploring knowledge, searching, representing, and solving mathematical problems.

In conclusion, the Grade 2 mathematics curriculum in Vietnam is structured to provide students with systematic, practical, and versatile mathematical knowledge that can be applied to real-life situations. It emphasizes the development of students' qualities and capabilities, the close relationship between learning and application, and the integration of modern teaching aids to facilitate the learning process.

Ability to organize experiential activities in grade 2 mathematics

The Grade 2 education program in Vietnam provides an excellent opportunity to build and organize learning activities through experiential learning in mathematics. This can enhance students' interest and promote their comprehensive development. In this context, we will explore the ability to organize experiential activities based on the structure of the mathematics curriculum and practical applications to develop critical skills for students.

The goal of organizing experiential activities in Grade 2 mathematics is to develop students' abilities in logical reasoning, performing mathematical proofs, mastering algorithms, and conducting mathematical proofs. Additionally, organizing experiential activities also helps develop mathematical creativity, logical thinking, spatial imagination, and intuitive thinking. It simultaneously promotes aesthetics and enhances mathematical culture for students.

Grade 2 students have accumulated a set of fundamental mathematical knowledge, which they can apply to practical activities. For example, they can engage in calculations, and measurements, and undertake math-related projects. These activities include organizing mathematical games, math clubs, forums, workshops, math competitions, visits to educational and research institutes, and interaction with peers who have a passion for mathematics.

With the introduction of the 2018 General Education Program, the construction and organization of experiential learning activities in Grade 2 mathematics have become more convenient. This program has facilitated a shift in teaching and learning methods.

The 2018 General Education Program specifically allows the integration of content from various subjects into mathematics, creating connections with daily life and reality. It helps students understand that mathematics is not just about learning facts and skills but also about applying mathematics and finding it interesting in everyday life. Furthermore, the program provides opportunities for organizing experiential activities in various forms, such as games, forums, excursions, outdoor activities, competitions, clubs, volunteer activities, and community engagement.

Each teacher can choose the most suitable activities for their students based on the needs, characteristics, and abilities of their class. Organizing experiential activities in mathematics helps students gain a deeper understanding, connect knowledge to real-life situations, and develop crucial skills throughout the learning process.

Research indicates that organizing experiential activities in Grade 2 mathematics can help develop students' reasoning abilities, creativity, and mathematical skills. The 2018 General Education Program offers many opportunities to promote mathematical interest and change the way teaching and learning are organized. Using different forms of activities helps meet the needs and characteristics of each class. Therefore, the construction and organization of experiential activities in Grade 2 mathematics are crucial opportunities to enhance the quality of mathematical education for students.

Example Lesson: In the content after Unit 1 in Semester 1 - "Kite" textbook, there is a requirement: Group discussion to design a mental arithmetic game within the range of 20, and then choose the most interesting game. Students will perform in groups of 5, discussing games that can be organized with their peers and practising playing. Through this experience, students develop communication skills, group activities, and mental arithmetic skills involving addition and subtraction (with carry) within the range of 20.

Exercise 3 on page 100 (Kite textbook - Volume 1): When participating in the "Environmental Protection from Recycled Products" festival, second-grade students made 24 products, and third-grade students made 16 more products than the second-grade students. How many products did the third-grade students make? This exercise helps the teacher integrate environmental protection content, allowing for an experiential task of making recycled products among groups, consolidating the quantity, performing addition to count the quantity of each group, and using the knowledge of comparing numbers with two digits to see which group has the most and which has the least products.

Through other activities such as practical calculation, measuring and estimating the length, weight, and volume of real objects; practising reading the time on the clock, looking at the monthly calendar; and practising collecting and recording data collected in school, the class will help students deepen their mathematical knowledge. These are opportunities to organize experiential teaching for students and enhance their interest in learning mathematics.





In the remaining can..... liters of water.

Example 2. The positions of the houses of your friends Trang, Dung, and Minh are described in the diagram below:



- a) How long is the distance from Minh's house to Dũng's house in meters?
- b) To get to Dũng's house, which route should Trang take to make it shorter? If Trang takes that route, how many meters will she have to walk?
- c) Minh says, "The distance from my house to Trang's house is 1 kilometer." Is Minh correct? Why?

Challenges in promoting mathematical interest in grade 2 students in Vietnam

Vietnam has witnessed significant development in the field of education, especially mathematics education. However, promoting mathematical interest in Grade 2 students still faces several important challenges. Let's examine these challenges and how to address them to create a better educational environment (these statements are derived from the findings of our master's thesis research).

Academic Pressure: Students in Vietnam often face academic pressure from their families and society. This pressure can lead them to focus on rote learning and solving exercises rather than genuinely understanding and enjoying mathematics. This may erode students' natural interest in the subject.

Teachers and Teaching Methods: Many teachers in Vietnam face the pressure of teaching and curriculum expectations. Promoting mathematical interest requires teachers to have deep knowledge of teaching methods and fostering creativity in the classroom. However, not all teachers are trained to apply these teaching methods effectively.

Textbooks and Learning Materials: Current textbooks and learning materials may not be engaging or suitable for promoting mathematical interest. This can create a barrier to implementing new teaching methods and fostering creativity in the classroom.

Teacher Preparation and Professional Support: Teacher preparation and professional support regarding how to promote mathematical interest can sometimes be limited. Teachers need training and support in applying new teaching methods and stimulating mathematical interest in the classroom.

Family and Societal Factors: Families and society play a crucial role in promoting students' mathematical interests. Without support and encouragement from families and society, students may lose their interest in mathematics.

Infrastructure and Resources: Some schools may lack adequate infrastructure and resources. The absence of proper equipment and appropriate spaces for practical and experiential activities can limit the organization of such activities.

Assessment: The current assessment system often focuses on knowledge and exam results. This can lead students to place more emphasis on test scores rather than experiencing and enjoying mathematics in their daily lives.

In conclusion, to promote mathematical interest among Grade 2 students in Vietnam, it is important to consider and address these challenges. Education needs to become an exciting process that motivates students to love the subject and develop mathematical skills sustainably. For example, in the "Enjoy Learning Math" lesson of "Kite" textbook, students can be tasked with designing a mental math game for numbers up to 20, promoting communication skills, teamwork, and mental math skills. Furthermore, addressing these challenges involves improving teacher training, reevaluating the curriculum, and engaging families and society in nurturing students' mathematical interests.

Opportunities and potential

Despite the challenges in promoting mathematical interest among Grade 2 students in Vietnam, there exist numerous opportunities and potential for improving the situation. Below are some strengths and potential aspects that we can leverage:

The 2018 General Education Program has laid the foundation for improving teaching and learning methods. The program focuses on developing mathematical skills for students and proposes various new teaching methods. Factors such as the integration of ethics, natural sciences, social sciences, and culture into teaching have created opportunities to connect mathematics with daily life.

New textbooks like "Kite", "Connecting Knowledge with Life", and "Creative Horizons" have integrated many exciting mathematical activities and experiences. They help both teachers and students find mathematics more engaging and applicable to real-life situations.

Various innovative teaching methods can be applied to promote mathematical interest. These include using mathematical games, forums, workshops, and math competitions. Such activities actively engage students and stimulate their interest in learning.

Teacher training and professional support are crucial for enabling teachers to apply new teaching methods and promote mathematical interest. Governments and educational organizations can invest in teacher training and professional development to improve the quality of teaching.

Families and society play a vital role in promoting mathematical interest. Encouraging students to participate in extracurricular mathematical activities and providing support from families can help create an environment that fosters mathematical interest.

The curriculum should provide opportunities for students to explore and be creative in mathematics. This can promote interest and enhance students' self-awareness.

In summary, within the broader landscape of mathematics education in Vietnam, we see many opportunities and potential for promoting mathematical interest among Grade 2 students. Harnessing these strengths and addressing challenges will help create a better environment for mathematical education.

Theory of experiential learning in the context of vietnam

Application of experiential learning in Vietnamese Education

Experiential learning is a teaching method with considerable potential and applicability within the Vietnamese educational system. This method not only provides opportunities for students to practice and apply knowledge in practical ways but also stimulates their interest and understanding of mathematics. Here are several aspects of applying experiential learning in Vietnamese education:

Real-World Mathematical Skill Development: Experiential learning helps students develop mathematical skills in real-world settings. Rather than solely studying theory and textbook exercises, students have the chance to apply mathematics in their daily lives. For example, they can calculate currency values, measure object dimensions, or explore ratios and percentages in practical situations. This aids students in comprehending the significance and applications of mathematics in their lives.

Encouraging Self-Exploration and Creativity: This approach encourages students to engage in self-exploration and creativity. Instead of merely receiving information from teachers, students can research and problem-solve using the mathematical knowledge they have acquired. This fosters logical thinking, spatial imagination, and intuition.

Promoting Mathematical Interest: Experiential learning creates an exciting learning environment that stimulates students' interest. Instead of finding mathematics boring and challenging, they have the opportunity to participate in engaging activities such as mathematical games, practical measurements, or discussions on intriguing mathematical issues. This helps build a positive attitude toward the subject.

Integrating Mathematics into Daily Life: Experiential learning helps students realize that mathematics is an essential part of daily life. They have the chance to apply mathematics in solving practical problems, from managing personal finances to determining percentage discounts while shopping. This demonstrates the true value of mathematics.

Developing Social and Communication Skills: Experiential learning often requires students to work in groups, engage in discussions with peers, and present their work. This aids in the development of social and communication skills, which are crucial aspects of personal growth.

In the current context, the application of experiential learning in Vietnamese education may require investment and support from the government, educational organizations, and teachers. However, the potential and benefits that this method brings to mathematical development and overall education are substantial.

Suitability of this method for second-grade students

The method of experiential learning is a suitable choice for second-grade students in Vietnam. This age group possesses distinct characteristics and specific learning needs, and this method effectively addresses various educational requirements for second-grade students in many aspects, as we outline below:

Curiosity and Readiness for Engagement: Second-grade students typically exhibit high levels of curiosity and eagerness to engage. They are keen to explore the world around them and often display a curiosity about fundamental mathematical concepts. Experiential learning provides an opportunity for students to satisfy this curiosity by participating in intriguing activities and practical hands-on experiences.

Development of Fundamental Skills: This age is a critical stage for developing fundamental mathematical skills. Experiential learning allows students to practice basic arithmetic, measurements, sequencing, and arrangement. Activities such as mathematical games, practical measurements, and exploration of geometric models contribute to establishing a strong mathematical foundation for these students.

Fostering Mathematical Interest: Students at this age require interest to drive their learning. Experiential learning creates an exciting and engaging learning environment. Mathematical games, practical measurements, and the exploration of mathematical concepts through real experiences help students develop a fondness for the subject.

Social Skill Development: Students at this age also require the development of social and communication skills. Experiential learning often necessitates teamwork, discussions with peers, and the presentation of their work. This aids in the development of communication and teamwork skills, which are crucial aspects of their personal growth.

Learning from Reality: Second-grade students benefit from connecting mathematical knowledge to real-life situations. Experiential learning helps students recognize the value and significance of mathematics in their daily lives. They have the opportunity to apply mathematics in solving practical problems, from managing finances to measuring objects.

In the application of experiential learning for second-grade students, educators and teachers should ensure that activities are age-appropriate and tailored to the student's abilities. Furthermore, creating an exciting and safe learning environment is essential to foster interest and the overall development of second-grade students in mathematics.

Discussion on applying experiential mathematics learning to foster second-grade student engagement in Vietnam

To apply experiential mathematics learning and foster the engagement of second-grade students in Vietnam, the author proposes several specific methods and details:

Develop Appropriate Mathematical Content: The primary objective is to develop age-appropriate mathematical teaching content for second-grade students. The content should be relatable and engaging, connecting to their daily lives. Lessons and exercises should be designed to help students see the connection between mathematical knowledge and practical applications. This will aid students in understanding that mathematics is not confined to paper but is applicable in their everyday lives.

Utilize Mathematical Games: Mathematical games are an excellent way to stimulate student interest. These games can include puzzles, card games, and board games. While playing, students will have to apply mathematical knowledge interestingly and practically, facilitating the natural and enjoyable development of mathematical skills.

Integrate Mathematics and Reality: The integration of mathematics and real-life experiences is a wonderful method to help students recognize the value of mathematical knowledge in their daily lives. Students can solve problems related to shopping, measuring time, and length, and various other practical aspects of their daily lives. This enables students to understand that mathematics is not merely an abstract subject but a practical tool for efficient problem-solving.

Learning through Real-World Experiences: Organizing real-world activities such as field trips, outdoor experiences, and practical mathematics projects can help students experience mathematics in real-life situations. Measuring length, weight, and time, or performing mathematical calculations in real-life scenarios can help students develop mathematical skills and foster their interest.

Collaboration and Interaction: Encouraging collaboration and interaction among students can stimulate their interest in mathematics. Organizing group activities and community projects to solve mathematical problems

promotes teamwork and creativity. Students can also participate in workshops, mathematics competitions, and interact with individuals who possess deep mathematical knowledge.

Utilizing Technology in Teaching: Using technology, such as computers and educational apps, can make the learning of mathematics more engaging and interactive for students. Technology can provide diverse lessons, interactive games, and visual approaches to learning mathematics.

Implementation Requirements: To successfully implement these methods, support is required from teachers and schools. Teachers should be trained and provided support on how to apply experiential mathematics learning. Adequate infrastructure is necessary for carrying out practical activities and using technology. Equally important is the creation of a friendly environment that encourages students' curiosity and interest in mathematics.

Conclusion

The article has presented the application of experiential mathematics learning to foster the engagement of secondgrade students in Vietnam. Throughout the research, we have examined the benefits of using this method and evaluated the state of mathematics education for second-grade students in Vietnam. The research has highlighted several key points:

Experiential mathematics learning creates an exciting learning environment, offering effective and enjoyable educational experiences for second-grade students. By integrating experiential activities and mathematical games into teaching, we can stimulate students' interest in mathematics.

Challenges and opportunities are part of the process of implementing experiential mathematics learning. These challenges include adapting to the educational context in Vietnam and ensuring that teachers are trained and knowledgeable in effectively applying this method. However, these challenges can be overcome through investments in teacher training and support.

The importance of fostering an interest in mathematics has been emphasized. This interest can stimulate creative thinking, problem-solving skills, and active student participation in the learning process.

In summary, experiential mathematics learning is a valuable tool for fostering the engagement of second-grade students in Vietnam. It is crucial to ensure that this method is effectively and contextually applied in Vietnamese education. Fostering an interest in mathematics can play a significant role in helping students develop mathematical skills and actively participate in the learning process.

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