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DESIGNING SOME TEACHING ACTIVITIES TO TEACH MULTIPLICATION AND DIVISION IN GRADE 3RD WITH INTEGRATED LEARNING THROUGH PLAYING (LTP)

Le Thi Thu Huong¹ and Hoang Thi Hao²

¹Falcuty of Primary Education, Thai Nguyen University of Education
20 Luong Ngoc Quyen Stress, Thai Nguyen city, Thai Nguyen province, Vietnam

²Nguyen Ba Ngoc Primary School, Coc Leu Ward, Lao Cai city, Lao Cai Province, Vietnam

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ABSTRACT

Vietnam's general curriculum year 2018 is implementing the first years in the direction of developing students' qualities and competencies. To realize this orientation, learning through Playing is an effective route. The article is based on presenting some basic issues of Learning through Playing, assessing the current situation of designing and organizing Learning through Playing activities in teaching Mathematics for 25 teachers, 9 administrators and 150 primary students from 3 primary schools in Lao Cai city, Lao Cai province to design and organize some learning through playing activities in teaching multiplication and division in grade 3. At the same time, initially evaluate the effectiveness of results of the designed teaching situations and obtain feasible results.

KEYWORDS: Learning through Playing; primary students; Maths; teaching Maths, grade 3rd.

1. INTRODUCTION

In order to carry out the fundamental and comprehensive renovation of education and training, primary education needs to renovate teaching methods, diversify teaching forms according to the quality and capacity development of students. This requires changing the model from teacher-centered teaching to classroom in which students can play an active and autonomously role in their learning process. Applying Learning through Playing (LtP) is an effective way to create this change. Math is a subject that helps students improve their mathematical ability, is the basis for learning other science subjects, and is a subject that has many practical applications. Organize learning activities through playing for students in teaching Mathematics at primary schools helps to change the atmosphere of the classroom, change students' approach to knowledge, and helps students apply subject knowledge into practice. It also contributes to the development of students' ability. Grade 3 is considered a "hinge" class for students to transition from the beginning to the end of high school in Vietnam. The 3rd grade content circuit in the elementary math program has many suitable contents to organize teaching in this approach.

2. CONTENT

2.1. Some issues about Learning through Play

2.1.1. What is Learning through Play?

LTP is an educational approach in which students interact, experience, explore and solve problems in a fun learning environment. Teachers connect learning goals with play activities to promote student participation and autonomy, thereby contributing to the development of learners' qualities and abilities. Learning is not just memorized knowledge. When children have more opportunities to share ideas, practice and choose what and how to learn, they learn more deeply and acquire skills for life.

Play is more than just playing games. It is active activity. There are many types of activities and experiences that children are free to explore and explore, also known as Play. Such activities are often structured and teacher-directed. Teachers need to believe in the ability of students and necessarily create opportunities for students to develop their thinking ability and take initiative in their activities instead of giving detailed instructions, specific instructions and give solutions and explain every things.

2.1.2. Features of Learning through Play

Joyful: this is a typical feature of Play – Students are excited to participate in play, experience moments of suspense, surprise, excitement or joy when they overcome challenges.

Active: LtP always requires the student to be involved in the process. Positivity is shown when the children are passionate and highly focused on learning activities.

Meaningful: in the learning process, students have the opportunity to relate what they already know, have experienced what they are learning. Through experience and practice, students have the opportunity to express and expand their knowledge through many forms such as presentations, drawings, story-telling, puzzles, ...

Iterative (opportunity to be repeated): students can experiment with a variety of possibilities to answer the question they are investigating and hypothesize, continue to ask questions. next question. This way of learning helps them find many solutions to a problem, thereby forming multi-dimensional thinking.

Social interaction: this is a useful tool for both learning and playing. Through expressing their thoughts, through direct interaction, students can share and understand the ideas of friends and teachers. From there, they not only feel comfortable, but also feel connected and create close relationships with their classmates.

It is not necessary to include all five LtP features in every Math learning activity. However, from time to time, teachers should create opportunities for students to experience joyful emotions, to actively

participate in meaningful activities, to interact with classmates and teachers, and to experiment different alternatives to solving a mathematical problem.

2.1.3. Types of Learning through Play

Learning through free play is entirely student-initiated, organized, and controlled, with no teacher involvement. With free play, students explore, play on their own with few constraints and limitations. Learning through oriented play is actively implemented by students, teachers only support and guide. Teachers will guide and support students to perform activities and help them take control of their own learning. Teachers can help by setting up the play environment, engaging with students, asking questions, suggesting, giving examples, etc. With directed play, teachers can help students have a variety of experiences. learning experiences with specific learning goals.

Learning through Games is pre-designed with rules and regulations, but students still have fun while playing.

In our view, learning through direct instructions is not LtP. In this type, teachers design and control. They also set constraints for activities.

2.1.4. Principles of Learning through Play

Connect Learning through Play with learning goals. When applying learning through Play, play activities need to be tied to the lesson objectives/topics to become learning activities, giving students the opportunity to practice and experience skills and competencies. .

Encourage students' autonomy. To provide opportunities for students to experience fun, meaningful, social interaction, active engagement, and interactive, teachers need to encourage student autonomy. Students feel that they are in control of the learning process, will be more responsible in learning, find new ways to explore and solve practical problems.

Effective classroom management. When applying Learning through Play, teachers need to know how to manage the classroom so that they can create an effective classroom culture on the basis of respect, joyful, positivity and dynamism of all members. Thus, it will meet all the needs of the students and the objectives of the lesson.

If the classroom layout is done well, the classroom becomes a teacher - the one who organizes, directs, and encourages student participation. Then the classroom space with the purposeful arrangement of all items and devices will become a factor that stimulates students' curiosity, encourages students to participate in learning, and at the same time, the space itself will suggest to students how to play, how to learn.

2.2. Reality of designing Learning through Play activities in teaching in grade 3 of some primary schools in Lao Cai city, Lao Cai province, Vietnam

2.2.1. Respondents

Teachers and 3rd grade students at 3 primary schools in Lao Cai city: Nguyen Ba Ngoc Primary School, Bac Cuong Primary School, Bac Lenh Primary School. 100% of teachers have qualified qualifications or higher and have worked for 5 years or more. The respondents in survey are described in table 1 and table 2.

Table 1. Number of 3rd grade Maths teachers at 3 schools participating in the survey

No	Name school	Number amount of teachers
1	Nguyen Ba Ngoc Primary School	8
2	Bac Cuong Primary School	9
3	Bac Lenh Primary School	8
Total number		25

Table 2. Number of students in schools participating in the current situation survey

STT	Name school	Number amount of HS
1	Nguyen Ba Ngoc Primary School	48
2	Bac Cuong Primary School	54
3	Bac Lenh Primary School	48
Total number		150

2.2.2 Survey contents

Teachers

- Teachers' perception of LtP in teaching Grade 3 Mathematics.
- Situation of teaching and learning Maths at Grade 3 in the approach of LtP in some primary schools

in Lao Cai city.

- Advantages and disadvantages of teachers in designing LtP activity for Grade 3 students.
- Some suggestions and wishes of teachers to organize and design LtP in teaching Mathes at Grade 3 effectively and in accordance with reality.

Pupils

- Attitudes of students in taking part in LtP in Mathematics lesson.
- Level of participation in LtP activities in learning Maths.

2.2.3. Direction survey method

- Use observation and class visiting methods to collect information.
- Using conversation method, Anket investigation method with teachers and students at 03 primary schools in Lao Cai city.
- Statistical processing method: calculate percentage.

2.2.4. Survey results

Teacher survey results

Table 3. Teachers' perception towards the design of learning activities through play in teach learn 3rd grade math

No	<i>Teachers' perception</i>	<i>Number quantity</i>	<i>Percentage</i>
1	Very intersted	19	76%
2	Interested	4	16%
3	Normal	2	8%
4	Not Interested	0	0%

The survey results in table 3 show that most teachers (76%) who teach grade 3 of schools have a very interested attitude in designing LtP activities in teaching Mathematics. In recent years, in math competitions at school, city, and provincial levels, primary schools in Lao Cai city have made remarkable achievements than they were; The teacher is always aware of the importance and meaning of teaching Mathematics, always focusing and properly aware of the innovation of teaching methods to improve the quality and effectiveness of Maths teaching. This is also a great advantage for teachers to easily approach and enjoy the design of LtP activities in teaching Grade 3 Mathematics. Next, we

learn about the level of willingness to design and organize Learning activities through play in teaching 3rd grade Mathematics have the following results:

Table 4. Teachers' willing of designing LtP activities in teaching Mathematics at Grade 3

No	Teachers' willing of designing LtP activities in teaching Mathematics at Grade 3	Number quantity	Percentage
1	Very willing	5	20%
2	Ready to join	10	40%
3	Hesitating, wondering	10	40%

The table 4 shows that although teachers who participated in the survey were very interested in the design of LtP, only 20% of the total teachers felt confident and ready to participate in this activity. 40% of teachers surveyed said that they were still hesitant, confused and not confident in teaching 3rd grade Math. We continued to survey the frequency in the design LtP activities in teaching Math 3, obtained the following results:

Table 5. Frequency in the design of LtP in teaching Maths at Grade 3

No	Frequency in the design of LtP in teaching Maths at Grade 3	Number quantity	Percentage
1	Usually,	0	0%
2	Sometimes	10	40 %
3	Rarely	15	60 %
4	Never	0	0%

The table 5 shows that there are no teachers who regularly design LtP in teaching Grade 3 Mathematics. Only 40% of teachers sometimes design learning through play in teaching Grade 3 Mathematics. And up to 50% of the total teachers participating in the survey share that it is rare to design LtP in teaching Maths at Grade 3. A positive number is that no teacher has never been designing and organizing LtP activities.

To explain the situation of not regularly organizing LtP activities of grade 3 teachers in Lao Cai city, we designed a question to determine the difficulties that teachers face when designing LtP activities in teaching Maths. The results we obtained are as follows:

Table 6. Teachers' difficulties in designing learning activities through play in teaching 3rd grade Mathematics

No	Teachers' difficulties in designing learning activities through play in teaching 3rd grade Mathematics	Number quantity	Percentage
1	The class time is not enough to organize LtP activities	15	60%
2	Students with uneven levels	7	27%
3	Means and tools for teaching not enough	5	17%
4	Not understand of how to design learning through play	21	84%

From the table 6, it is shown that teaching means and tools are not the main reason in designing LtP activities. Next, the level of students in the class is not really equal in the 3 surveyed schools, which is also one of the difficulties that makes the organization of learning through play activities of teachers not regular. This is also the indirect cause that leads to the fact that LtP in class takes a long time to organize, compared to the duration of the existing class, which is overloaded. However, we realize that the biggest difficulty for teachers is the method and technique of designing learning activities through play. Thus, because teachers have not been equipped with theoretical knowledge and pedagogical skills in designing LtP, the organization of LtP has only occasionally or rarely happens

Student survey results

For students, we conducted a fact-finding survey of how often LtP activities were involved. The results we obtained are as follows:

Table 7. Frequency of participation in LtP activities in Math lessons

No	Frequency of participation in LtP activities in Math lessons	Number quantity	Percentage
1	Usually	20	13%
2	Sometimes	70	46%
3	Rarely	45	30%

4	Never	15	10%
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Table 8. Students' interest in LtP in learning Maths

<i>No</i>	Students' interest in LtP in learning Maths	<i>Number quantity</i>	<i>Percentage</i>
1	Very intersted	101	67%
2	Interested	39	26%
3	Normal	10	7%
4	Not Interested	0	0%

Table 8 shows that, only 7% of the students who participated in the survey has normal attitude to LtP activities, 26% of them are interested and 67% of the students are very interested. However, the students' expectations were not met when looking at the results in Table 7. Only 13% of the surveyed students said that they regularly participate in LtP activities, up to 40% of the students asked rarely or never experienced these activities

This shows that teachers need to change and create more opportunities for students to actively participate in meaningful learning activities, to interact with teachers and peers, to experience emotions, joyful through LtP activities.

Besides, through the random attendance of some teachers' lessons, we found that the classroom atmosphere is still not really exciting, students passively perform learning tasks through the classroom through very detailed and specific instructions of the teacher. The number of students who are interested in the lesson are usually those who learn quickly and have good results in term I and previous classes. Most students listen to the teacher, then do the exercises, but there are no questions or criticisms for the teacher to clarify the problem. When we introduced them to LtP and experimented with an activity, the children were very interested and excited, and the results were also quite good. This is a good signal and also a motivation for teachers to improve their ability to design and organize LtP activities in Grade 3 Math.

2.3. Design Learning through Play activities in teaching multiplication and division in grade 3

2.3.1. Design LtP activities for engagement and start the

To create interest, motivate students and connect to the lesson, teachers can organize a number of learning games such as Secret Gift Box, Transmission, Relay... or using techniques such as Lightning, Mix and connect. The goal of this activity is to help students consolidate knowledge and skills related

to the lesson or exploit their life experiences to support and connect with the next lesson discovery activity.

For example: Students play transmission to review the multiplication table they have learned, Open a secret gift box to perform the calculations listed in the gift box, connect the calculation with the result of the calculation, etc.

2.3.2. Design LtP activities to help students explore the lesson

Students learn best from experiential activities. Instead of giving questions, detailed instructions, suggesting or making specific requirements, teachers should organize activities for students to explore, discover and discover knowledge on their own.

Example: Students manipulate cards with 3 circles to form a multiplication table of 5; Do a Think - Pair - Share to learn how to set and calculate a multiplication or division calculation.

2.3.3. Design LtP activities to help students practice

Teachers should organize activities for students to practice and apply the knowledge and skills they have learned. Students can work individually, in pairs or in small groups. It is important for teachers to create opportunities for students to work on their own, to solve problems, to present and to share with teachers and his friends. The methods and techniques that can be applied are Puzzles, Stationary Learning, Tablecloths, Effective Questioning,...

2.3.4. Design LtP activities to help students apply math in practice.

Applying activities are an opportunity for students to use their acquired knowledge and skills to solve real-life problems. In this activity, teachers should organize activities for students to find math in the life around them and develop through creative expression activities, working collaboratively, sharing what they learn with relatives when coming home...

2.4. Assess the feasibility of the designed teaching situations

2.4.1. Purpose

We conduct experimental pedagogical research through direct teaching activities in the classroom with the aim of testing the feasibility and effectiveness of the designed LtP activities.

2.4.2. Tasks

- Guide grade 3 teachers to carry out the implementation of LtP activities in their lesson.
- Test and evaluate the effectiveness of using the LtP in teaching and learning.
- Processing and analyzing results of pedagogical experiments, as well as teachers' evaluations of using the LtP in teaching and drawing conclusions. General conclusion about pedagogical experiment

2.4.3. Objects and content of pedagogical practice

Objects and locations

The pedagogical experiment was organized at Nguyen Ba Ngoc Primary School, Duyen Hai Ward, Lao Cai City.

We conducted a pedagogical experiment on 3rd grade students studying at the school.

Table 9. Objects of pedagogical experiment

	<i>Class</i>	<i>Number of students</i>	<i>Learning conditions</i>
<i>Experimental class</i>	3A	38	Good facilities
<i>Control class</i>	3B	37	Good facilities

Content

Experimenting with the LtP activities in grade 3 designed. The pedagogical experiment was conducted by us in the second semester of the academic year 2021-2022.

Process

The experiment was carried out according to the following procedure:

First, we conducted an talk and share with the teachers of the experimental class and the control class about the purpose of conducting pedagogical experiments on Learning through Play activities on the topic of Multiplication and Division in Mathematics at grade 3. Talk about core knowledge as well as the requirements that students need to achieve after studying that lesson in both experimental and control classes.

Discuss with teachers about the evaluation criteria for experimental activities in the classroom, which are conducted with LtP activities.

Next, based on the LtP activities designed, teachers will apply them to direct teaching in the experimental class.

Finally, at the end of the experimental content, we will evaluate, comment and analyze the effectiveness of LtP activities.

The evaluation of experimental results is carried out as follows:

- During the experiment, we will organize observation groups, observe students' attitudes and learning gestures, record minutes and conduct direct interviews with teachers in both experimental and classroom classes.
- At the end of the experiment, the teacher will answer the questions in the survey form and the students will perform a test to evaluate the impact process and compare it with the control class on results obtained between the two classes.

Results

Through the process of conducting experiments at Nguyen Ba Ngoc Primary School, Duyen Hai Ward, Lao Cai City with the results obtained after conducting the experiment, it shows that the experimental purpose has been completed, the implementation of LtP activities in teaching grade 3 Math is feasible and effective.

For the purpose of comparing and evaluating the learning quality of students in the experimental class, we organize for students to take tests and grade them. The results obtained are for research purposes only, not for official student assessment. The specific results obtained are as follows:

Table 10. Results of test

Results	Grade 3A (Experimental Class)		Grade 3B (Control Class)	
	Occurrence frequency	Total	Occurrence frequency	Total
5	0	0	1	5
6	1	6	2	12
7	5	35	7	49
8	19	152	22	176
9	11	99	6	54
10	4	40	2	20
Total	40	332	40	316
Mean	$\bar{x} = 8,3$		$\bar{x} = 7,9$	

From table 10, we can see through the test that the average score of the experimental class is 8.3, which is 7.9 higher than that of the control class. This proves that the application of teaching activities through play has a positive effect on the quality and perception of students, making the scores of the experimental class better than that of the control class. Through the test results, the application of learning activities through play not only attracts students to participate but also contributes to improving the quality of teaching.

Thus, from the results of the analysis of test scores of the experimental class and the control class, we can see that the learning quality of Math in the experimental class is improved, better than that of students in the control class. Thus, it can be affirmed that the application of LtP not only attracts students to participate, creates excitement and passion for learning for students, but also helps students understand the lesson and do apply well.

we observed a teacher who was well prepared and had included several during the lesson. The class started really well; children were actively participating. They seemed enthusiastic and were eager to answer.

4. OTHER RECOMMENDATIONS

In response to the requirements of teaching innovation to meet the requirements of the General Curriculum Year 2018, teachers need to understand and flexibly apply teaching methods and active teaching forms towards developing students' competence. LtP activities met that requirement. This approach helps students experience, discover and find the beauty of mathematics in the life around them. The suggestions on the design and organization of Learning Through Play activities in teaching grade 3 math mentioned in the article hope to be positive suggestions to help teachers develop their teaching skills.

Through the process of pedagogical experimentation and the obtained results, we found that the application of LtP activities is feasible and can be deployed in teaching grade 3 Mathematics at primary schools. Teachers participating in the experimental lessons all realize that the application of LtP activities is necessary in the learning process of students. On the part of the students participating in the experiment, they showed enthusiasm, interesting to participate, actively interact with other members to complete the learning.

In order for the organization of learning activities through play to promote the teaching and learning of 3rd grade math in particular and the elementary school math program in general, we have some recommendations as follows:

- Regularly organize training and refresher courses on the design and construction of learning activities through play for primary school teachers, not only in Maths but also in other subjects.
- Strengthen the organization of LtP activities in teaching each math content in primary school.

- Organize regularly professional activities on LtP for teachers, creating motivation to promote organizational ability, revealing talents in the process of organizing learning activities through play.
- Develop a plan to organize activities to apply LtP activities throughout the school plans in the school year, suitable for each type of student, each different area.

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