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# Needs Analysis of Physics Edupark Enrichment Book Batang Tabik Waterpark Design Integrated Problem-Based Learning

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**ABSTRACT**

In general, visitors who come to the tourist attraction only have fun and capture their vacation moments, without realizing that there are many physics concepts in every game vehicle there. This research is a preliminary research that aims to analyze the needs of physics enrichment book development for Batang Tabik Waterpark edupark integrated with problem-based learning model. The type of research used is design research using the Plomp model. This research was conducted only up to the preliminary research stage consisting of student analysis, teacher analysis, and analysis of learning materials at Batang Tabik Waterpark. The data used in this study were taken from the results of student needs analysis and interviews with one physics teacher and 30 students of class X SMAN 3 Payakumbuh. Based on the results of the study, it is known that the physics edupark enrichment book integrated with problem-based learning models can motivate students in learning; show physics phenomena as a whole; help develop students' knowledge and skills; and help students master physics material. In addition, the Batang Tabik Waterpark tourist attraction can be used as a physics education park and as an object of enrichment book development in the form of a physics edupark enrichment book integrated with problem-based learning models equipped with photos and videos because of its many links to physics concepts. So it can be concluded that the physics edupark enrichment book Batang Tabik Waterpark is a suitable enrichment book if used as a physics edupark learning media.

**Keywords :***Edupark, Batang Tabik Waterpark, Slide Tower, Spill Bucket, Swimming Pool*



## I. INTRODUCTION

One of the branches of natural science, physics, studies the properties and symptoms of objects in nature (natural phenomena) [1, 2]. Understand the natural phenomena of physics through the process of observation, measurement, analysis, and conclusion[3]. Physics teaches an understanding of the universe [4] physics is not only the study of facts, laws, principles, and concepts, but also how these facts, principles, and concepts are obtained [5].

Learning physics is a field of science that underlies the concepts of natural phenomena and technological advances [6]. Learners are required to understand physics concepts by observing natural phenomena and finding relationships for problem-solving by observing these phenomena [7]. Mastering the basic concepts of physics is necessary to understand physics learning [2, 8]. Learners will better understand and deepen physics concepts if they can relate them to their personal experiences [9].

Seeing and observing phenomena in the learner's environment directly is a way to understand physics concepts. The environment can be used as a learning resource, expanding knowledge, and providing a more enjoyable and relaxing learning experience for learners. Environmental learning refers to activities where learners look at their environment, both in school and outside of school [10]. Learners' activities in interacting with the environment can make the environment a learning resource.

One of the curriculum ideas that demands independence from students is the independent learning curriculum. Independence in the sense that both formal and informal education provide learners with the freedom to access knowledge and information. The independent learning curriculum does not restrict the idea of learning that occurs in or outside of the classroom and also calls for creativity from both teachers and students [11].

In essence, the transformation of education through an independent curriculum is one of the latest innovations that presents superior human resources who have the Pancasila Student Profile [12]. Based on this latest change, the Minister of Education and Culture has high hopes that the learning process will not only focus on students in the classroom but also explore outside the classroom. This will make learning more fun, enjoyable, and not teacher-centered. This kind of learning system will shape the character of self-confidence, independence, smartness in socializing, and ability to compete [13].

Learning in nature such as outside the classroom can allow students to explore their knowledge directly. Out-of-class learning is hands-on learning. Direct learning is when students interact directly with learning resources to develop their knowledge, thinking, and psychomotor skills. Learners engage in direct learning when they watch, listen, ask questions, gather data, associate, or analyze things, and then communicate what they learn [10].

Learning physics will be more purposeful if daily activities in students' environments are used as a means and source of learning, and there is continuity between the subject matter [14]. The environment in question is the environment represented by both natural and man-made tourist attractions [15]. A location that can be used as a learning resource is called an educational park, also known as an educational park, because events in the environment can be used as an innovative learning method because the environment contains many physics concepts edupark [3, 6, 16, 17].

Edupark is a tourist attraction that can be used as an educational park to see how the concept of learning is applied. In other words, eduparks can be thought of as parks that are used for learning purposes [18]. The edupark concept facilitates the idea of local wisdom-based education that is used as a learning resource [19]. Edupark makes students more familiar with nature and know the learning concepts that exist in nature and tourist attractions.

Edupark can be applied to all subjects including physics [20]. Combining edupark with physics material produces a concept, namely physics edupark. Physics edupark is an educational park that has the application of physical concepts [18]. Physics edupark is a place in the form of a natural or artificial garden as a source of physics learning through direct application to the environment [21]. Physics edupark allows for the learning process to occur by helping teachers and students find facts and formulating principles or concepts in a physics lesson [22].

Edupark-based learning is part of the implementation of Permendiknas No. 22 of 2006 and the utilization of regional potential can be done by optimizing the surrounding environment, one of which is a tourist attraction as a learning resource [5]. Natural and artificial tourist attractions that can be used as physics edupark learning resources such as Minang Fantasy (MiFan) Waterpark Padang Panjang [20], Geopark Ngarai Sianok [21], Janjang Seribu [23], Geopark Harau [24], Air Panas Semurup [25], Ranah Minang Silokek Sijunjung [26], Terjun Sarasah Kajai, Pasaman Barat [7], Padang Beach [27], Carocok Beach, Painan [28], Bukik Chinangkiek, Solok [29], Rumah Gadang Istana Rajo Balun, Solok Selatan [30], Gua Rantai and Gua Danau [31], and Gua Loguang [5].

Visitors to tourist attractions usually only enjoy the natural beauty and rides available there. They don't realize that the rides contain many physics concepts. The utilization of edupark through tourism objects as a learning resource causes a change in mindset towards physics, which previously considered physics as a boring lesson [32], difficult [14], monotone, and rigid. Instead, learning physics can be done in a fun way [6] by providing a form of learning variation and refreshment and by making someone, especially students or learners, able to learn while recreating [33].

One of the important components in the learning process is enrichment material. The use of enrichment books in the independent curriculum includes a form of differentiated learning implementation, namely through content differentiation. Enrichment material is given to learners who are in the very advanced category. This shows that the enrichment program is an important component in the implementation of the independent curriculum. Learners in the very good category follow further learning and are given enrichment. [5].

The enrichment program can be interpreted as providing additional or expanded experiences or activities for students who are identified as exceeding the learning completeness determined by the curriculum, with the principle of individual differences (initial ability, intelligence, personality, talent, potential, interest, learning motivation, learning style), then the enrichment program is carried out to meet the needs / rights of children [34] this enrichment activity requires a supporting material to deliver the material in the form of an enrichment book,

which is the best tool in developing student literacy [35]. Enrichment books are books that contain richer material and are usually used as a companion or complement to the main textbook (Permendiknas RI No. 2, 2008: 2).

Batang Tabik Waterpark is a tourist attraction in the village of Sungai Kamuyang, Luak District, Lima Puluh Kota Regency, West Sumatra.

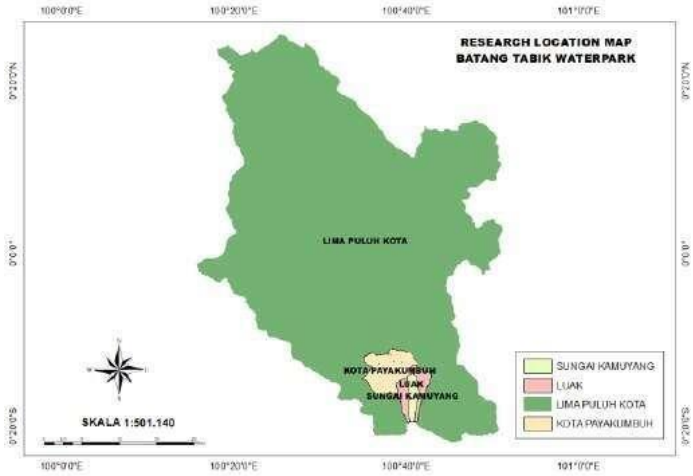


**Fig. 1** Research Location Map of Batang Tabik Waterpark Sungai Kamuyang Village, Luak Sub-district, Lima Puluh Kota Regency, West Sumatera

This study employs a descriptive methodology, and descriptive analysis is carried out by locating physics ideas on the slides at Batang Tabik Waterpark. Data collection was done through observation. Observation is a data collection technique through a series of observations and recording important things obtained directly from the field [36].

Observing Batang Tabik Waterpark by observing the game objects. Noting shape, size, and other physical characteristics and recording everything observed. Then identify the components of the rides by determining the components or parts of the rides. For example, a slide tower ride that consists of stairs and slides. Furthermore, the interaction analysis by reviewing how these components interact with each other and analyzing the physics concepts and principles involved. For example, visitors skating have kinetic energy.

In the research to be conducted, the purpose of this study is to analyze the need for the development of physics edupark enrichment books. Therefore, preliminary studies are very important. The preliminary study consists of literature study and field study. The literature study aims to collect data and find out what learning activities are carried out at school, while the field study aims to find out the learning conditions at school and the conditions of tourist attractions that allow it to be a good learning resource. For students to increase their knowledge of physics learning and understand the relationship between physics learning and playgrounds, it is necessary to make an enrichment book, namely the Batang Tabik Waterpark physics edupark enrichment book.

## II. METHOD

The research method used in this study is design research with the Plomp development model. Plomp's development model consists of three phases, namely: 1) preliminary research; 2) development/prototyping phase; and 3) assessment phase. (assessment phase). This research has only reached the preliminary investigation phase, which is the phase of gathering and analyzing information, defining the problem, and proceeding with the product design.

The measurement scale that will be used in this study to determine respondents is to use a Likert scale. Interval with answers made with the highest score 4 (strongly agree) and the lowest score 1 (strongly disagree). The data analysis technique uses quantitative descriptive statistical analysis by calculating the percentage of the total respondent score based on the assessment of each answer using equation (1).

$$P = \frac{f}{n} \times 100\% \quad (1)$$

Keterangan:

P = final grade

f = score obtained

n = maximum score

The percentage of quatitative data obtained is then categoried according to Table 1.

**Table 1.** Percentage of category division prior knowledge students about physics concepts

| Percentage (%) | Category |
|---|---|
| $n \leq 62.22$ | Low |
| $62.22 < n > 72.01$ | Medium |
| $n \geq 72.01$ | High |

Information:

n = percentage of prior knowledge students

Data collection techniques include interviews, observations, material analysis, and learning device analysis. The research was conducted in February 2023. The research subjects were taken from 1 physics teacher and 30 students of class X SMAN 3 Payakumbuh, while the object of research was Batang Tabik Waterpark. At the Plomp development stage, a needs analysis of the physics edupark enrichment book developed based on indicator analysis using a data collection questionnaire distributed directly to students and interviews conducted to one physics teacher of SMAN 3 Payakumbuh, which aims to get an overview of learning media, curriculum applied, learning models applied, and obstacles experienced during the learning process. Furthermore, direct observation was made to the field (Batang Tabik Waterpark), which aims to analyze objects related to concepts in physics learning materials.

## III. RESULTS AND DISCUSSION

The results of the questionnaire analysis distributed to students at SMAN 3 Payakumbuh about learning styles can be seen in Figure 3.

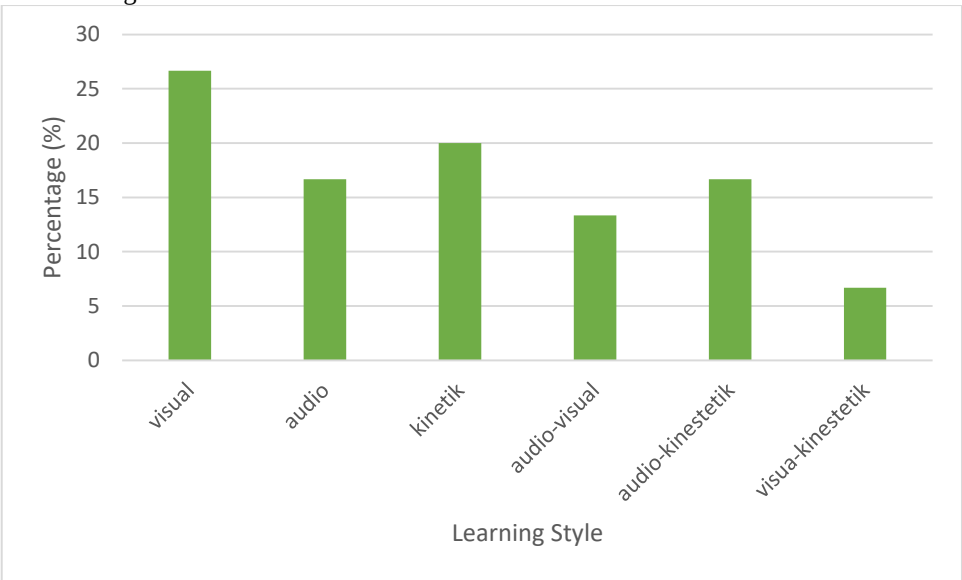


**Fig. 3** The results of the questionnaire analysis of students' learning styles

Learners who have the most dominant learning style are visual learning style 26.67%, where they rely on their vision as a recipient of information and knowledge. This learning process can be assisted by print media in the form of learning books, learning modules, and teaching materials. Print media is the learning media in schools that best suits the optical, cognitive, and metacognitive needs of the human reading brain [37]. Students have been facilitated with learning books, besides that the teacher provides learning modules to broaden their horizons.

The results of the analysis of students' questionnaires about learning media and enrichment books can be seen in Figure 4.

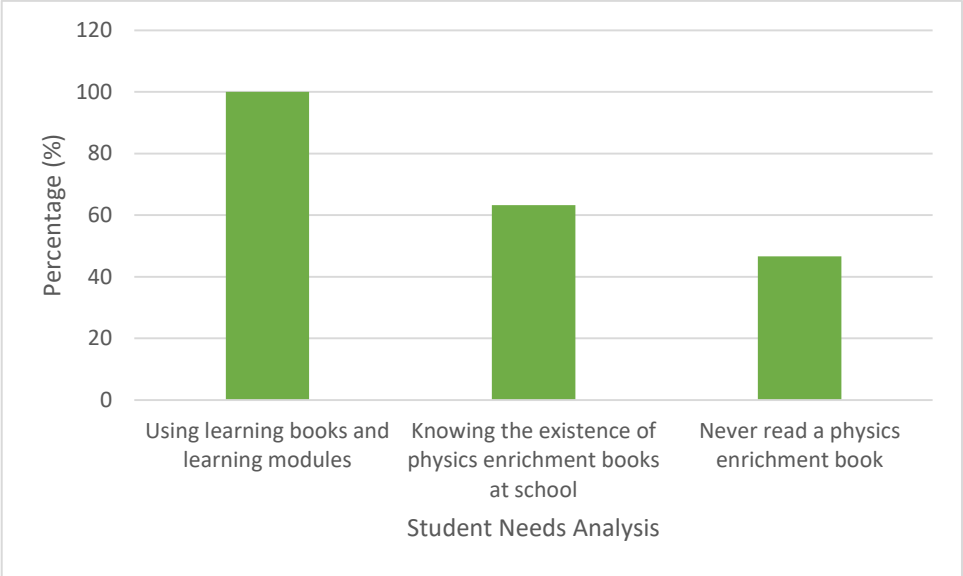


**Fig. 4** The results of the analysis of students' questionnaires about learning media and enrichment

Where learning media are used in the form of learning books and learning modules. From the results of the analysis above, it can be seen that some students have read physics enrichment books, but there are students who have never read physics enrichment books, even though the book can support and add insight to their knowledge.

The results of the analysis of students' questionnaires about the physics edupark can be seen in Figure 5.

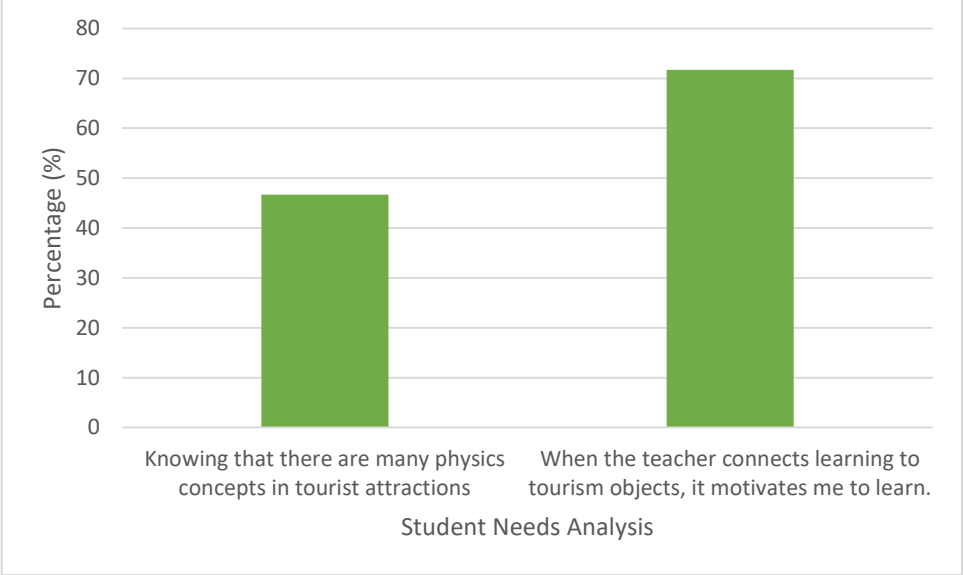


**Fig. 5** The results of the analysis of students' questionnaires about the physics edupark

It can be seen that 46.67% of students who know the existence of physics eduparks in tourist attractions. Teachers have not maximally linked physics concepts with the natural environment and tourist attractions, because of this insight and knowledge of students is still relatively low. Learners are motivated to study after the teacher links learning with tourist attractions with a percentage of 71.67%. Students are interested in edupark-based learning, because they can directly try the theory obtained during learning. So an educational park-based book (edupark) is needed so that students better understand that learning physics is not just formulas and abstract concepts, but the application of physics learning can be seen directly in real life.

The results of the questionnaire analysis of students about Batang Tabik Waterpark are shown in Figure 6.

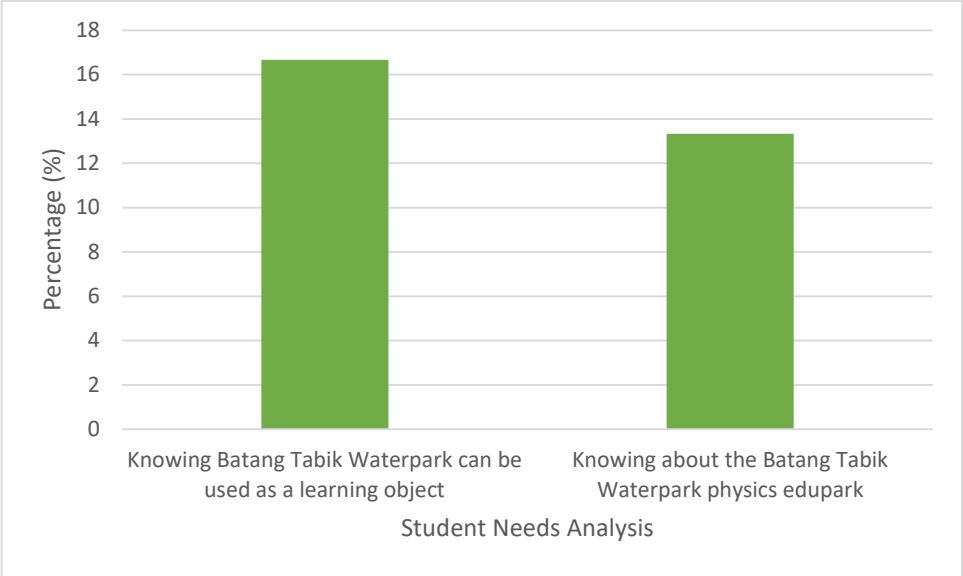


**Fig. 6** The results of the questionnaire analysis of students about Batang Tabik Waterpark

It can be seen that the low knowledge of students about the rides in Batang Tabik Waterpark can be used as a learning resource. One of the factors causing this is that teachers have not maximally linked physics learning materials with eduparks and there is no book explaining the existence of physics eduparks in that place.

Based on the results of this analysis, the teacher has implemented the problem-based learning model. When applying this model, the teacher experienced difficulties, because students were accustomed to receiving answers directly from the teacher without them trying to find the answers first. Learners are accustomed to the lecture model, so teachers have difficulty in classroom management when applying the problem-based learning model.

In addition to textbooks that are mandatory references, there are also non-textbooks which are books that are not used directly as books for learning a field of study. One of the non-text books is an enrichment book [38]. Enrichment books are books that contain material that can enrich textbooks at the primary and secondary education levels. Enrichment books serve to improve students' thinking skills and broaden their horizons of the environment based on the latest knowledge. Specifically, enrichment books can improve knowledge, skills, and personality insights for students [39].

Enrichment books can be used to support the learning process outside the use of textbooks, namely to increase students' knowledge and skills [40]. The use of enrichment books is also expected to improve critical thinking skills and motivate students in learning physics. The development of enrichment books can be allowed from a variety of references either from direct observation or other sources that are relevant and in accordance with the material presented. [41].

The physics concepts analyzed were then developed in the enrichment book. So high school students can understand and know that in the Batang Tabik Waterpark tourist attraction not only entertain themselves, but there are also physics concepts. The enrichment book developed has a structure of the initial part of the enrichment book developed starting with the cover. The cover consists of a front cover and a back cover. Then the title page, preface, table of contents, and introduction. The preface is written about the process of making edupark enrichment books. The table of contents contains the sequence of titles in each chapter and page of the enrichment book. While the introduction is an explanation of the tourist attraction that was developed into a learning resource in the form of a physics edupark enrichment book.

The body section consists of chapter titles, identification of physics concepts, concept maps, exposure to material content, sample questions, practice questions, and quiz. The chapter title contains an explanation of the game vehicle and techniques to find out the physics concepts that exist in the vehicle. Identification of physics concepts contains the main discussion that will be explained in each chapter. Differentiation of physics concepts is a concept map that contains the title of the material being explained. The presentation of the material content is an explanation of the physics concepts in the game vehicle equipped with the syntax of the problem-based learning model and pictures taken directly on the vehicle. The example problems given are related to the concepts explained so that students can better understand the material. Practice questions and quizzes are given to measure students' understanding of the material explained.At the end of the learning module is a bibliography, glossary, author profile, and back cover of the enrichment book. A bibliography is a writing arranged at the end of a scientific work that contains the author's name, year of publication, title of the writing, publisher, and publisher's identity as a source or reference for a writer. Glossary is a collection of alphabetically arranged lists

of important words or terms. The author's profile is a brief introduction to the enrichment book designer and contains the back cover of the enrichment book.

The enrichment book of physics eduprak Batang Tabik Waterpark is equipped with a problem-based learning model. Some of the material in the book is equipped with student worksheets using the problem-based learning model. The Problem Based Learning model was developed primarily to help students develop critical thinking, problem solving, and intellectual skills [42]. The problem-based learning model is used to motivate learners to identify and research the concepts and principles contained in the problem presented.

PBL was chosen because it is the most effective method that requires students to be proactive in the learning process, and the goal is for students to solve problems related to real experiences that they encounter directly in everyday life [43]. Each physics material presented in this edupark enrichment book is equipped with a broblem-based learning model and the experiments in this book are also equipped with a problem-based learning model. Table 2 provides a description of the problem-based learning model's syntax [42].

**Table 2.** Sintaks model of problem-based learning

| Sintaks | Description |
|---|---|
| Stage I<br>Orienting learners to the problem | The teacher explains the learning objectives and the necessary tools or steps. |
| Stage 2<br>Organizing learners to learn | The teacher helps learners define and organize learning tasks related to the topic of the problem raised in the previous step. |
| Stage 3<br>Guiding individual and group investigations | The teacher encourages learners to gather relevant information and carry out experiments to obtain the clarity needed to solve the problem. |
| Stage 4<br>Develop and present work | The teacher helps learners to share tasks and plan appropriate works based on the problem solving results in the form of a report. |
| Stage 5<br>Analyze and evaluate the problem-solving process | The teacher helps learners to reflect or evaluate the problem-solving process carried out |

Based on the results of the analysis of students' questionnaires, it is known that students who know the connection of physics concepts to the Batang Tabik Waterpark tourist attraction are still low, so the development of edupark enrichment books is needed.

Batang Tabik Waterpark tourist attraction has a sliding tower, spilled bucket and swimming pool. For more details about the game rides can be seen in Figure 3.

(a) (b) (c)

**Fig. 7** Batang Tabik Waterpark Game Rides (a) skating tower of image ”a” (b) spill bucket of image ”b” (c) swimming pool of image ”c”

When visiting Batang Tabik Waterpark, visitors will find various game rides. The swimming pools at Batang Tabik Waterpark have different depths for children, teenagers and adults. Then the sliding tower rides are equipped with different heights and shapes of slides, there are straight and winding slides and low and high slides. Spilled bucket with the sensation of water pouring over visitors at a certain height.

The utilization of edupark in the physics learning process can be done by identifying physics concepts in the sliding tower, spilling bucket, and swimming pool. The form of identification between the skating tower and physics concepts is outlined in Table 3.

**Table 3.** Analyze the skate tower's connection to physics concepts

| No | Physics concept | Explanation |
|---|---|---|
| 1 | Magnitude and measurement | Concepts of magnitude and measurement are applied to understand the physical characteristics of the slide and to measure the performance of the slide.<br>- The length of the slide can be measured in meters to determine the distance traveled by the user of the slide.<br>- The time it takes to slide from the top to the bottom of the slide can be measured in seconds to determine the speed of the slide user.<br>- Speed, the speed of the slide user can be measured in meters per second to determine how fast the slide user is sliding.<br>- Height, the height of the slide can be measured in meters to determine the height of the slide. |
| 2 | Vector | The concept of vectors can be applied to the slide by measuring the speed and direction of the slide user's movement. The speed on the slide can be considered a vector quantity because it has a value and direction. |
| 3 | Motion of one-dimensional objects | - Position, can be measured using a specific reference point, e.g. the starting point of a slide<br>- Distance, can be measured by calculating the position difference between the starting point and the end point of the movement.<br>- Displacement, is the difference in position between the start and end points of the movement.<br>- Speed, can be measured by dividing the displacement by the time it takes to glide<br>- Acceleration, can be considered as a quantity in one-dimensional motion if there is a change in velocity. However, in the case of a slide with a fixed speed, acceleration is considered zero. |
| 4 | Motion of objects in two dimensions | The concept of circular motion can be applied to slides by paying attention to the movement of the user of the slide that forms a circular trajectory.<br>- Centripetal force, in order for the user of the slide to move in a circle, he needs a centripetal force that always deflects the movement of the user of the slide towards the center of the circular trajectory.<br>- Period, the period of circular motion is the time it takes to rotate one full revolution. |
| 5 | Newton's law | - The first law of motion, known as Newton's First Law, states that unless a force is applied to an object, it will either remain at rest or move in a straight line. In the context of a slide, this law can be applied to understand the motion of a slide user when there is no force acting on the slide user.<br>- According to Newton's Law II, an object is accelerated by a force in a manner that is directly proportional to the force's strength and inversely proportional to the mass of the object. In the context of slides, this law can be applied to understand the relationship between the force acting on the slide user, the mass of the slide user, and the acceleration of the slide user. |
| 6 | Weight and normal force | - Weight, weight acts on the user of the slide and pulls them downwards. This weight can affect the motion of the slide user and affect the speed and acceleration during sliding.<br>- The normal force is the force that operates between the |

| No | Physics concept | Explanation |
|---|---|---|
| | | slide's surface and the user. This normal force acts perpendicular to the surface of the slide and prevents the user from falling through the surface. |
| 7 | Friction force | - Static friction force, static friction force occurs between the user of the slide and the surface of the slide when the user of the slide is at rest.<br>- Kinetic friction force, kinetic friction force occurs between the user of the slide and the surface of the slide when the user of the slide is sliding.<br>- Effect of friction force, friction force can affect the motion of the slide user and affect the speed and acceleration during sliding. A larger friction force can slow down the slide user's motion, while a smaller friction force can speed up the slide user's motion. |
| 8 | Work and energy | - Effort, effort can be calculated by multiplying the force exerted on the user of the slide by the distance traveled by the user of the slide.<br>- Potential energy, potential energy is related to the height of the slide user from the ground or other reference point. The higher the slide user is above the surface, the greater the potential energy.<br>- Kinetic energy, kinetic energy is related to the speed of the user of the slide. The faster the user slides, the greater the kinetic energy.<br>- Mechanical energy, potential energy can turn into kinetic energy when the user starts sliding. As the user slides down, their potential energy decreases while their kinetic energy increases. This follows the principle of conservation of energy, where the total mechanical energy (potential energy + kinetic energy) is always constant if there are no non-conservative forces acting. |
| 9 | Rotational kinetic energy | The concept of rotational kinetic energy can be applied to slides by considering the motion of the slide user which involves rotation. Rotational kinetic energy occurs when an object rotates. On a slide, rotational kinetic energy is related to the rotational motion that occurs to the user of the slide while sliding. |

Basically, spill buckets have a very simple and unique way of working. Water from the pool is siphoned and also pumped into the spill bucket, after which the bucket is gradually filled with water. When the water in the bucket is full, the water in the bucket will spill automatically. Visitors who play this spilled bucket do not know when the water in the bucket will spill and pour it, that's the exciting sensation of the spilled bucket. The form of identification between the spilling bucket and physics concepts is described in Table 4.

**Table 4.** Analyze the relevance of the spilling bucket to physics concepts

| No | Physics concept | Explanation |
|---|---|---|
| 1 | Free fall motion | In the case of a spilled bucket, the water in the bucket will experience free fall motion when the bucket spills. The only factor affecting the water's free fall motion is the acceleration caused by the gravitational pull of the Earth; neither the water's mass nor air resistance have any impact. |
| 2 | Parabolic motion | The trajectory of the water spilled in the spilled bucket is a parabolic trajectory. |
| 3 | Work | When the water comes out of the bucket and falls, the effort that occurs on the bucket is to convert the potential energy of the water |

| No | Physics concept | Explanation |
|---|---|---|
| | | into kinetic energy. |
| 4 | Energy | - Potential energy is the energy possessed by an object due to the position or position of the object. In a spilled bucket, the potential energy is gravitational potential energy because the bucket has mass and is at a certain height.<br>- Kinetic energy is the energy possessed by an object due to its movement. In a spilled bucket, kinetic energy occurs when the bucket spills and the water in the bucket moves or spills.<br>- Mechanical energy is the sum of kinetic energy and potential energy in an object. In the spilled bucket, the energy consists of the kinetic energy of the water coming out of the bucket and the gravitational potential energy of the water in the bucket before it spills. |
| 5 | Rigid body equilibrium | When the bucket is filled with water and cannot hold the balance, the water in the bucket will spill. The existence of balance in the bucket means that the water in the bucket will not spill. |
| 6 | Water discharge | Water discharge in a spilling bucket is the amount of water that comes out of the bucket in a certain unit of time. |

A swimming pool can be a great place to relax, have fun and exercise. Swimming is a good way to stay fit. It also helps improve cardiovascular health and circulation. Apart from its health benefits, swimming pools have many physics learning concepts. The identification between swimming pools and physics concepts is outlined in Table 5.

**Table 5.** Analyze the relevance of swimming pools to physics concepts

| No | Physics concept | Explanation |
|---|---|---|
| 1 | Newton's law | - According to Newton's Law I, every physical object has a tendency to remain at rest or move with constant velocity in the same direction, unless an external force acts on it. In the context of swimming, this law means that if there is no external force acting on a swimmer in a swimming pool, then the swimmer will either remain at rest or move at a constant speed.<br>- When a swimmer pushes the water with their hands and feet, they generate a repulsion force. According to Newton's Law III, every action has a reaction that is proportional and opposite in direction. In this context, when the swimmer pushes the water backward, the water exerts a reaction force in the opposite direction, which helps the swimmer move forward. |
| 2 | Energy | - Potential energy in swimming pools involves the storage of energy associated with the position or water level in the pool. When visitors prepare to swim or make a swimming start they store energy and have potential energy.<br>- The presence of mass and velocity defines kinetic energy. Swimming gives visitors kinetic energy. |
| 3 | Static Fluid | - Swimming pools have water density<br>- Hydrostatic pressure is the pressure generated by a static fluid due to the downward weight of the fluid. In the context of swimming pools, hydrostatic pressure can affect the stability and strength of the pool walls.<br>- Archimedes' law states that the buoyant force experienced by an object submerged in a static fluid is equal to the weight of the fluid that the object displaces. In swimming pools this law |

| No | Physics concept | Explanation |
|---|---|---|
| | | means that the buoyant force experienced by the human body when swimming in a swimming pool is equal to the weight of the water displaced by the human body. In swimming pools the buoy can float because it has a density that is smaller than the density of the fluid. |

Observe Batang Tabik Waterpark by carefully observing the rides. Noting the shape, size, and other physical characteristics. Noted the physics concepts on the sliding tower ride. Then identified the concept into physics material.

## IV. CONCLUSION

Based on the results of the needs analysis conducted at SMAN 3 Payakumbuh, it is known that the school has implemented the Merdeka curriculum. The learning media used by teachers are learning books from the government and also learning modules, problem-based learning learning models have been applied but teachers have difficulty in classroom management, and teachers have not used enrichment books to support student understanding and contextual books. This shows that innovation is needed in the learning media used so that students can add insight to their knowledge, one of which is by using the Batang Tabik Waterpark physics edupark enrichment book. With the physics edupark enrichment book, physics learning becomes more fun and interesting, and more contextual so that students get direct experience that makes learning more meaningful.

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