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Abstract
This research aimed to know the level of student learning activities and to analyze factors that influence student learning activities when learning assisted by educational game Kahoot! Researcher’s role in this research was as participant observers. The research subjects were all students of class XI majoring in office administration at SMK 4 PGRI Pasuruan, as many as 29 students with a sampling technique used purposive and snowball sampling methods. Data collection procedures used observations and interviews. Analysis of research data for the results of the observation sheet used descriptive statistical techniques, while the analysis of interview data used the Miles and Huberman model which includes data reduction, data display, and conclusion drawing / verification. The observations showed that overall student learning activities were included in the sufficient category with a percentage of 52.56% with a description of Visual Activities of 65.66%, Oral Activities of 30.46%, Listening Activities of 77.87%, Mental Activities of 29.31%, Emotional Activity of 59.48%, while the results of the Interview showed student learning activities influenced by several factors including: motivation to learn, socio-cultural environment, interests, teacher's ability to teach, completeness of facilities and facilities, students' cognitive abilities, talents, and student physical condition in studies.

INTRODUCTION

Education 4.0 is a challenge for teachers to increase their competence as a 4.0 teacher who uses technology in his studies. Use of technology in the learning process must correspondingly with learning objectives. In an effort to achieve learning objectives, it is necessary to make a conducive learning environment system suitable for learning purposes. (Rohmah, 2015) in his book titled 'Educational Psychology' classifying learning objectives into 3 type, include: to acquire knowledge, understanding and a carrying, and forming attitudes.

Students’ learning activities are indispensable in supporting the achievement of learning objectives in the Education Era 4.0 especially in SMK whose education system puts students first to have the skills to work in a particular field. But based on the initial observation that do by researchers, teachers of SMK PGRI 4 Pasuruan almost never apply technology in learning. Learning by conventional and cooperative methods was the learning method that teachers used most often in teaching and learning activities. Based on the problem, researchers are interest to analyzing students’ learning activities on mathematics learning when using the teams games tournaments (TGT) cooperative learning model assisted by educational game Kahoot!.

Learning activities is physical and mental activities (Rohmah, 2015). In learning activities, both activities are inseparable and must be interconnected. Paul B. Diedrich (Rohmah, 2015) create a list that classify student activities as Visual Activities such as reading, paying attention to demonstration images, experiments, other people's work, Oral Activities such as stating, formulating, asking, advise, issue opinions, conduct interviews, discussions, interruptions, Listening activities such as listening

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descriptions, conversations, discussions, music, speeches, Writing Activities such as writing stories, essays, reports, poll, copy, Drawing Activities, such as drawing, charting, maps, diagrams, Motor Activities such as conducting experiments, making construction, repairing models, playing, gardening, livestock, Mental Activities, such as responding, remembering, solving About, analyzing, seeing relationships, making decisions, Emotional Activities, such as put interest, feel bored, joyful, passionate, brave, calm, nervous. Many factors can affect learning activity. Rohmah (2015) describes factors that influence learning activities, include: environmental factors such as natural environment, and socio-cultural environment; Instrumental factors such as curriculum, programs, facilities and amenities; teachers; Physiological conditions such as physical condition, and condition of five senses; Psychological conditions such as interest, intelligence, talent, motivation, cognitive ability.

Teams Games Tournaments (TGT) learning model is one of a variety of cooperative learning. According to Slavin (Nurdyansyah & Fahyuni, 2016) cooperative learning emphasized students to interact actively and positively and exchange ideas in the group. Cooperative learning is a learning model with the way students study and work in small, collaborative groups whose members consist of four to five students with a group structure heterogeneous where students play games with other team members to earn scores for their respective teams. The games composed by the teacher can be in the form of quizzes in questions relating to learning materials. In cooperative learning type TGT there are five steps, namely class presentation, study in groups (teams), games (games), Matches (tournament), group awards (team recognition).

Game in Kamus Besar Bahasa Indonesia was interpreted as something used to play with the purpose of pleasing the heart. Juul (Paul, 2012) defined the game as a rule-based system with the results of variables measured where different results was given different values. The results gained was influenced by the player's efforts. Aslan classified the play into several types based on the general characteristics of Non-Digital Games and Digital Games (Aslan, 2016). Games including Non-Digital Games include:

1. Board Game; Board game is played on a specially designed board where the player moves based on a set of rules.
2. Game Card; Card game uses cards as game instrument.
3. Educational games; Educational games is designed to teach specific subjects or skills. Educational games can be played with boards, balls, sticks, and other media
4. Sport Games; Sport is a physical activity played according to the rules for entertainment. Each sport uses a different set of rules.
5. Table Games; Table games are a type of sport that require a table to play. Many of the table games require equipment such as a racket, net and stick to play.
6. Field Games; Field games are a type of sport that require a field to play. Field games require more than one player to play. Teams can vary in size from two to dozens.
7. Role-Based Game; role-based game is an Interactive and collaborative game where players are required to act or take a decision to physically perform their role by wearing costumes and using different tools.

While the requests included Digital Games include:

1. Role Playing Games; In RPG, players go through many adventures and explore new worlds, most of which are fictional. While completing different missions and defeating enemies, the game's characters acquire powers that enhance character skills and abilities.
2. Action Games; Action games are one of those games where most of the challenges presented are physical skills tests and player coordination. Challenges can be puzzle solving, tactical conflicts, and exploration.
3. Adventure Games; Adventure games are an interactive story about the protagonist's character played by the player. Solving puzzles and conceptual challenges is a majority of the gameplay.
4. Strategy Games; Strategy games are games where most of the challenges presented are strategic conflict challenges and players can choose from a wide range of potential actions or
movements at most points in the game. Strategy games require a heavy thinking process by the players. Players need to plan, make decisions, and take action with caution.

5. Sport Games; Sports games simulate some aspects of real or imaginary athletic sports, whether it's playing in games, managing a team or a career, or both. Match games use physical and strategic challenges.

6. Game Artificial Life; Game Artificial Life is a real life simulation game. The game's character can be a pet, a person, or any live opponent. Artificial Life games allow players to control the lives of creatures or people.

7. Puzzle Games; The main activity of the puzzle game is solving puzzles. Puzzles can be based on recognizing patterns, making deduction or understanding processes.

8. Digital Education games; Educational games are designed to teach people specific subjects, improve their skills, and expand the concept. Educational games focus on problem solving, strategy, and learning outcomes over entertaining players.

9. Training games; Training games is an interactive game focused on teaching and training. Training games can be used to gain different types of skills.

Noemi in his journal titled ‘Educational Games for Learning’ says that games have a positive effect in the learning process (Noemi & Maximo, 2014). Games reinforce learning in a dynamic, interactive, motivating and entertaining way and continually improve skills, teamwork, solidarity, innovation, creativity, problem solving, continuous improvement, efficiency Energy, mathematical precision, initiatives, achievement objectives, orientation, flexibility, and work with the environment.

Kahoot! is a modification of the use of ICT in education and games so it is useful and effective to improve learning become more enjoyable, joyful, attractive and relaxed (Budiati, 2017). One year after launch, Kahoot! Already has more than 1.5 million teachers who have registered and 49 million learners registered to play this game (Rofiyarti & Yunita, 2017). Kahoot! is a platform that can be used for some form of assessment including online quizzes, surveys, and discussions that can be played individually or in groups. In Education, Kahoot! Used as a learning medium.

Daryanto (Fahyuni, 2017) said that the position of learning media is very important to stimulate the mind, attention and also the learning interest of students, for that needs to be considered various things in the selection of media, among others: 1) The selection of the appropriate media Can attract students’ attention and provide clarity of observable objects, and 2) learning materials taught in classes tailored to the abilities and experience of the students. Seeing that researchers are interested in conducting research analysis of students’ learning activities in the Kahoot! educational Game at SMK PGRI 4 Pasuruan.

Figure 1. Starting Page of Kahoot!
JREST (Journal of Research in Education, Science and Technology)

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Figure 2. The Appearance of the Quiz on Kahoot!

Figure 3. The Results of the Quiz on Kahoot

METHOD

This type of research is qualitative descriptive research. Called descriptive because the data is collected in the form of words, images, and not numbers. It is said to be a descriptive study with a qualitative approach because in this research analysis and presentation of data based on the systematic facts and data collected in the form of data descriptions. According to (Arikunto, 2014), the data source in the study is the subject from which the data can be obtained. In line with the purpose of research and the approach it uses, the type of data used in this research is more the form of attitude of actions/behaviors or actions and phenomena that occur.

According to Sugiyono (2018) qualitative research is a study based on the nature of post positivism, used to examine the natural condition of the object, where the researcher is the key. The presence of researchers in qualitative research is absolute, because researchers act as a research instrument and data collector, the role of researchers in this research is as an observer of participants. Participant Observer is a process of observation conducted by the observer by taking part in the lives of the people who will be observed (Sugiyono, 2018).

The research was conducted in April-May of 2019 in SMK PGRI 4 Pasuruan, with the subject of research is all class XI students Department of Administrative Office of SMK PGRI 4 Pasuruan amounting to 29 students consisting of 17 male students and 19 female students. The sampling techniques used in this study are purposive and snowball sampling so that data collection is done until the data is saturated. Research instruments using observation sheets and interview guidelines. The technique of data analysis of the observation sheet of students’ learning results uses a descriptive statistical technique with the following formula:
% students = \frac{Students Frequency \times Time of each observation}{Amount of students \times Total observation Time} \times 100\%

As for classifying the results of the observations into the category refers to Sugiyono (Sugiyono, 2018) as follows:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>80% &lt; %students ≤ 100%</td>
<td>Excellent</td>
</tr>
<tr>
<td>60% &lt; %students ≤ 80%</td>
<td>Good</td>
</tr>
<tr>
<td>40% &lt; %students ≤ 60%</td>
<td>Enough</td>
</tr>
<tr>
<td>20% &lt; %students ≤ 40%</td>
<td>Less</td>
</tr>
<tr>
<td>0% ≤ %students ≤ 20%</td>
<td>Very less</td>
</tr>
</tbody>
</table>

Source: Adaptation of (Sugiyono, 2018)

Data analysis techniques of interviews using data analysis on field models Miles and Huberman which includes data reduction, data display (data presentation), conclusion drawing/verification

**FINDINGS AND DISCUSSION**

Based on the results of the research, then obtained students’ learning activities in mathematics learning assisted by educational game kahoot! at SMKPGRI 4 Pasuruan are as follows:

![Observation Results](image)

**Figure 4. Data of observation sheet results**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Sub indicator</th>
<th>% Indicator</th>
<th>Sub Indicator categories</th>
<th>% Indicators</th>
<th>Indicator categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Activities</strong></td>
<td>I</td>
<td>57.47%</td>
<td>Enough</td>
<td>65.66%</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>73.85%</td>
<td>Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oral Activities</strong></td>
<td>III</td>
<td>25%</td>
<td>Less</td>
<td>30.46%</td>
<td>Less</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>35.92%</td>
<td>Less</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Listening Activities</strong></td>
<td>V</td>
<td>77.87%</td>
<td>Good</td>
<td>77.87%</td>
<td>Good</td>
</tr>
<tr>
<td><strong>Mental Activities</strong></td>
<td>VI</td>
<td>29.31%</td>
<td>Less</td>
<td>29.31%</td>
<td>Less</td>
</tr>
<tr>
<td><strong>Emotional Activities</strong></td>
<td>VII</td>
<td>59.48%</td>
<td>Enough</td>
<td>59.48%</td>
<td>Enough</td>
</tr>
<tr>
<td><strong>Overall student learning activities</strong></td>
<td></td>
<td>52.56%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Summary of Observation Results Data in Class

1. Visual Activities

Based on table 2, students’ visual activities in mathematics learning assisted by educational games Kahoot! on sub indicator I (students read the appropriate material) reached 57.47% including enough categories, while on sub indicator II (Students pay attention when teachers/friends give explanations/suggestions/opinions) reached 78.85% including the good category. The overall students’ visual activities in mathematics learning assisted by educational games Kahoot! reaches 65.66% including good category. Based on the results of interviews, increasing and decreasing students’ visual activities are influenced by motivation, interests, teachers, socio-cultural environment, facilities and amenities.

2. Oral Activities

Based on table 2, students’ oral activities in mathematics learning assisted by educational games Kahoot! on sub indicator III (students ask/give advice/opinion to the teacher/friends about the material learned) reached 25% including the category less, while on sub indicator IV (students answer the question of teacher/friend when asked) reached 35.92% including less categories. The overall student’s oral activities in mathematics learning assisted by educational games Kahoot! reached 30.46% including the less category. Based on the results of interviews, the increase and decrease students’ oral activities are influenced by cognitive abilities, socio-cultural environment, motivation and physical condition.

3. Listening Activities

Based on table 2, students’ listening activities in mathematics learning assisted by educational games Kahoot! on sub indicator V (students listen to each other's opinions/explanations of teachers/friends about the material learned) reached 77.87% including the good category. Based on the results of interviews, increasing and decreasing students’ listening activities are influenced by motivation, teacher, and social cultural circle.

4. Mental Activities

Based on table 2, students’ mental activities in mathematics learning assisted by educational games Kahoot! on sub indicator VI (students attempt to solve/analyze the given problem) reached 29.31% including the category less. Based on the results of interviews, increased and decreased students’ mental activities are influenced by motivation, socio-cultural environment, and talent.

5. Emotional Activities

Based on table 2, students’ emotional activities in mathematics learning assisted by educational games Kahoot! on sub indicator VII (students excited/happy during learning) reached 59.48% including enough categories. Based on the results of interviews, the increase and decrease students’ emotional activities are influenced by interests, teachers, facilities and amenities.

From the analysis of data that has been done to the results of observation sheets and interviews, it can be concluded that the study activities of students in class XI Department of Office Administration SMK PGRI 4 Pasuruan as a whole category simply by some factors that affect include: motivation, socio-cultural environment, interests, teachers’ ability to teach, available facilities, cognitive students, talents, and physical condition of students while following learning.
But keep in mind that the result is the average value of all indicators that have been determined, namely Visual Activities, Oral Activities, Listening Activities, Mental Activities, Emotional Activities that are observed during 12 learning sessions and taken the average value on each indicator. Based on the information provided by the observer, indicators that the researcher determines does not occur periodically or concurrently affect the percentage of results. Other things to know in using educational game Kahoot! as a learning medium is the need for a fast and stable internet connection to avoid lag (undoing the process of translating the data so that the application cannot be run).

CONCLUSION

The research’ results showed that overall student learning activities was 52.56% inclusive of the category simply with the following description of student learning activities: Visual Activities of 65.66% include good category, Oral Activities of 30.46% include less category, Listening Activities of 77.87% including good category, Mental Activities of 29.31% including less category, Emotional Activities of 59.48% including enough categories.

Many factors influence students’ learning activities. The most commonly mentioned factor of the subject is students’ learning motivation and socio-cultural environment around the student. The next factor is the student's learning interest teacher's ability to teach, and the availability of facilities and amenities for students to conduct learning. The last factor that influenced students’ learning activities are the cognitive abilities of students, talents, and physical conditions of students as they progress.

Recommendations

The availability of facilities and facility in SMK PGRI 4 Pasuruan has already demonstrated good and adequate condition, however need to do checking computer unit and Internet connection periodically so that ongoing learning is not interrupted by the unit computer that cannot power on and an internet connection is often disconnected.

For future researchers who want to learning activities assisted by educational game Kahoot! or continue this research deeper by trying to analyze from a different point of view, then there are some suggestions that researchers think need to be considered.

The observation sheet that researchers used in this research was the type of time sampling with a duration of 10 minutes once the observer performs the observation. This observation sheet is suitable for use when the observed indicator often appears but is not suitable if the observed indicator is required to appear at certain events. Therefore, the conformity of indicators, types of observation sheets used, and the data that researchers want to get from the observation results should be considered back so that the research can run smoothly.

Qualitative research using an observation sheet requires supporting reference material such as video, photo or sound recording that displays research activities in a complete and systematic manner. This needs to be prepared by the researchers carefully to facilitate subsequent processing of data.

REFERENCES


