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Research paper



Challenged Solving in Listening Through T-Mobile Learning Model

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Abstract

The Electronic Learning (e-Learning) is one of trend education in Indonesia. Mobile learning is a part of electronic learning or better known as e-learning. Regarding the number of users of mobile devices in Indonesia, mobile learning can be used as an alternative to solve problems. The purpose of the mobile learning program is to facilitate student learning wherever and whenever. Because it has characteristics that are pre-practically carried everywhere, mobile learning has its own interests. Therefore, the researchers develop effectiveness mobile-based learning for student problems as the answer to the challenges of the curriculum in Indonesia and to the development of the contemporary model to help students and educators to learn more easily at least to provide student learning motivation. The T-Mobile Learning Model aims to provide a practical knowledge in conducting problem-based learning model on a listening subject that is relevant to the current problems, especially for a new student of the education faculty at Universitas Islam Kadiri. The result shows that the Model can improve the learning in a listening subject which its implementation has been integrated into the special theme from the test scores and students' result.

Keywords: *challenged solving, T-mobile learning model*

1. Introduction

The use of information and communication technology in principle can be used as an e-Learning system that describes forms of learning that utilize electronic devices and digital media in the form of mobile learning (m-learning) -based learning that has the specificity of utilizing cellular communication devices online.[1]
Mobile Top of Form Bottom of Form learning has increased in recent decades with the use of the Internet, e-mail, multimedia technology, and intelligent learning guidance systems on campus.[2] The challenged solving in listening subject by using t-mobile learning Model employs mobile learning approach which states that thematic can improve learning both in certain subjects and across subjects. [3] [4][5]
The purpose of t-mobile learning model development is to help students of the college to increase listening ability by the challenge of the problem using an application in mobile learning.[6] It can be alternative solution for listener as tool and technologies for developing the terms.[7][8]
t-mobile learning model aims to integrate the application in Android-based with a specific theme in each practice.[9] Severalm-learning practices are designed in various sectors such as universities and other sectors, especially in teaching and learning.[10] tutors can lead control and guide learning in an effort to meet the needs of individual learners.[11]
Thus, cooperative learning both teachers and students are needed to be in a continuous learning process,[12] t-mobile learning model provides become the very useful support in building learning applications because they provide freedom of movement between different users in different places. [13][14]

2. Method

This study used the Research and Development (RnD) method. [15] researchers using this system are because the implementation steps during the study will produce certain measurable schemes and targets.[16] Gustafon confirms that this type of research is in the category of development group system models.[17] Furthermore, the observation sheets reliability of the model is analyzed using the percentage formula. [18]

3. Results and Discussions

Result Data Analysis on T-mobile learning Model effectively
The result of observing its effectively implementing this model, the learning process was performed by following the syntax of t-mobile learning model[19] and using t-mobile learning model as supporting learning tools. Thus, the observation of this Model effectively was intended for the implementation of a model component and supporting system (learning devices) component. [20]
One of the ways to develop challenge solving skills is to treat students as practice and practice[21] during the learning activities.[22] the role of students in learning activities both online and offline will influence the influence on the formation of their thinking patterns which are always based on scientific and rational things.[23][24]

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hat is the challenged of problem-based learning that is able to improve student learning outcomes. But based on Boud, it turns out that problem-based learning is also able to arouse students' motivation.[25] The results of the study indicate that the problem-based learning model combined with various techniques in learning can provide good learning outcomes.[26]
The t-mobile learning model was developed based on the thematic views. Furthermore, the t-mobile learning model development was built by referring to the learning theories developed by Robin Routledge, Momen.[27][28][29]

t-mobile learning Model Components
T-mobile learning model has four main components; 1) syntax, 2) supporting system,3) social system, 4) reaction principle. [17]
Syntax: The learning activities by using t-mobile learning model is performed through six main steps, namely 1) the development of capabilities, 2) Demonstrate skills, 3) Guide training, 4) Checking for understanding and provide feedback, 5) Provide opportunities for advanced training and deployment, 6)Taking lessons from the material presented.[30]

Further descriptions about t-mobile learning model syntaxis shown in table 1.

Table 1. Syntax of T-Mobile Learning Model [19]

Syntax *T-Mobile Learning on Listening Subject*		
Syntax	**Learning Strategy**	**Ability expected**
Stage 1 Emphasizes the development of capabilities (ability and willingness).	Apperception and motivation (teacher explains learning objectives, background lesson information, importance of lessons, prepares students for learning)	Students can review background knowledge of the ability and have a high willingness in learning.
Stage 2: Demonstrate skills (Procedural knowledge or present descriptive knowledge of T-Mobile applications)	(Teachers demonstrate the learning correctly or present step by step the correct listening procedure)	Students can understand learning objectives and demonstrate learning outcomes.
Stage 3: Guide training with T-Mobile learning applications	Discussion, Observation etc.	Students can learn well in accordance with the abilities, strengths and learning resources available
Stage 4: Checking for understanding and provide feedback	Discussion, Observation etc.	Students can understand individually on the learning it does.
Stage 5: Provide opportunities for advanced training and deployment	Enrichment of material	Students have already learned development.
Stage 6 Taking lessons from the material presented	Conclusion	Students can know the advantages and benefits of the material they learn.

The development of t-mobile learning Model is illustrated in figure 1.

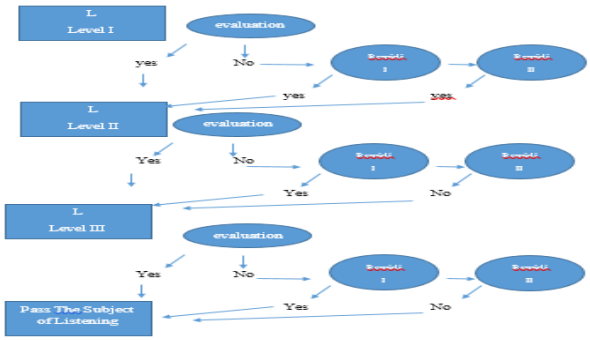


Fig. 1. t-mobile learning Model Development

The he model gives students the opportunity to collect relevant information and conduct trials independently, then the teacher guides students to process the information so that they can complete each challenge given. Based on that statement mentioned, introduces 4 steps in solving a problem called as Heuristics, namely 1) understanding the problem, 2) planning a solution, 3) implementing the plan and 4) looking back.[31] The result of the implementation in this study is presented in figure 2.

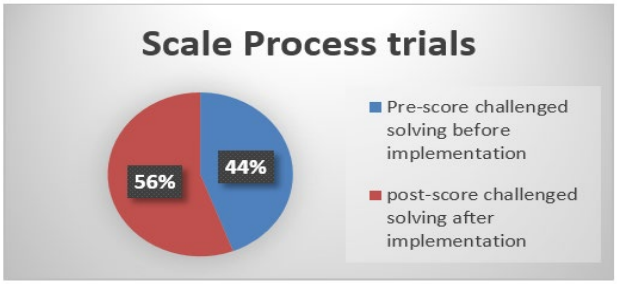


Fig.2. Percentage scale of application results

Based on diagram 1, it can be seen that the comparison of before and after the t-mobile learning Model implementation indicates many significant changes involving the ability to understand the problem, 2) the ability to plan solutions, 3) the ability to implement the plan and 4) the ability to look back. The t-mobile learning model also develops a comprehensive integrated learning by combining core competencies of students' values and ability into application-based learning. Hence, learning can be comprehensively understood both in terms of the material content to be achieved, as can be seen in table 2. Therefore, the result of t-mobile learning model different test (T-Test), can be seen in table 3.
The mean or average value in table 3, the difference between the pretest and posttest of the challenged solving abilities indicates that Based on the final stage of the trial, it was obtained the calculation of the initial measurement with a score of 73.21% and the final measurement obtained a score of 92.32%. Thus it can be said that there are differences in the initial measurement (pretest) and final measurement (posttest) in the process of activities using themed applications that have been developed. Since the p-value of the t-test is 0.026 which means that it is (<0.05), it can be concluded that Ho is rejected and Ha is accepted. This means that there is a significant influence on the average scores in the pretest and posttest.

Table 2. Number of respondents fromExpert

No	**Class**	**Indicator**	**Score (%)**
1	Valid	Valid Already got expert validation / model expert	4
2	Practical	*Can theoretically be carried out in learning *In principle can be applied in the classroom	4 4
3	Effective	*States that the model is effective	4

		*In the implementation of the model gives results as expected	3
4	Objectives	*Learning models are designed to achieve specific learning goals. * The purpose of learning has a strong foundation of thought	4 4
5	Syntax	* The designed learning model has a clear syntax * Each of the designed syntax items has a strong theoretical foundation * The order of syntax is logically arranged	4 4 4
6	Supporting Systems	* The learning model has a supporting system component * Supported systems are structured to have a strong theoretical basis.	4 4
7	Social systems	* The learning model is designed to have a social system component. * Components of the social system that are structured clearly illustrate the role of teachers and students. * The components of the social system are arranged to illustrate the pattern of relationship or communication between teachers and students * Components of the social system that are prepared to describe the expected target	4 4 4 4
8	Reaction principles	* The learning model is designed to have a reaction principle component. * The reaction principle composite component illustrates how teachers should see and treat students, both individually and in groups, as well as in their entirety.	4
		Result:	67
Total			75

Table 3. Result of data processing for variable: Material Expert.

No	Indicator	Score (%)
1	The integration of selected instructional content	3
2	Ideal material / theme breadth, not too narrow and not too broad	3
3	The ability of learning to accommodate the diversity of individuals	3
4	Suitability of learning with the level of student	4
5	development	4
6	Accommodation on a wide range of intelligences	3
7	Emergence of teacher-student interaction, students-students	4
8	The material presented includes all the materials listed in the core competencies and basic competencies	4
9	The material in accordance with basic material needs that support the achievement of core competence (KI) and basic competence (KD)	4
10	The material presented accurately to avoid misconceptions by students	3
11	Facts and data presented in accordance with the reality and efficiency to improve students' understanding	4
12	The example presented in the material is an accurate	3
13	example	3
	Clarity of examples given to each learning activity	
14	The clarity of the indicators illustrates the achievement of	4
15	measurable learning outcomes	4
	Problems presented in accordance with the material	
16	Clarity of introductory description to encourage student improvement to learn more	4
17	The images are presented in accordance with reality and efficiency to improve students' understanding.	3
18	The material presented actual that is in accordance with	3
19	the development of scholarship and characteristics of students	3
20	The actual actual image is given	4
	Examples and cases are presented in accordance with the	
21	situation and conditions around	3
22	Compatibility between the questions on learning activities with the indicators of learning outcomes	4
	The key answers are in accordance with the question and	4
23	are easy to use to carry out independent activities	
	References easy to use as a source of support that can be	4
24	used as a reference to find sources of reading that are relevant to the material	2
	The use of real situations, the authenticity of the learning	
25	experience	3
26	Availability of learning resources in the immediate	3
	environment of students	
	The significance of the learning experience.	97
	Giving responsibility to students either individually or in groups	
	Total	
		86,80

Table 4. Result of data processing for variable: Feasibility of Application

No	Questions	Score
1	The sentence represents the contents of the message or information to be conveyed with still following the appropriate sentence.	4 4
2	Sentence are simple and direct to the target	
3	Messages presented with interesting, clear, right on target, does not give rise to double meaning	3
4	The language used evokes pleasure when students read it	4
5	Ability to motivate students with the level of student development	3
6	Submission between adjacent paragraphs and sentences in paragraphs reflects a logical relationship	3
	Consistent use of symbols or icons in the application	4
	Consistent use of symbols or icons in the application	
Total		28
Percentage		87,50%

Table 5. Paired Sample Statistics

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	73.2143	28	9.64310	1.82238
	Posttest	92.3214	28	5.85032	1.10561

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest &Posttest	28	.733	.000

The Table 4 shows that there is a significant improvement in students' mean scores after receiving a new treatment which is t-mobile learning Model implementation. The result of challenged solving also affecting the learning effectiveness as the learning criteria is claimed to be effective if the student's learning values or results fit the Minimum Criteria of Mastery Learning.

Table 4. Paired Samples Test

Pair Sample Test

	Paired Differences					t	df	Sig.(2-tailed)
	Mean	Std. Deviation	Std. Error mean	95% Confidence interval of the Difference Lower	Upper			
Pair 1 Pretest-posttest	-19.10714	6.67410	1.26129	-21.69509	-16.51920	-15.149	27	.000

This clarifies that the t-mobile learning Model implementation is effective in improving students' listening. There is a significant difference between the competence of the students' listening which is taught using T-Mobile Learning application.

4. Conclusion

The results of the respondent data, the validation of the model is good. The feasibility of t-mobile learning model by designing

learning; 2) create an Android-based mobile learning application that can be implemented easily and can be used in the learning process to improve student listening ability effectively.

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