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Influence of Application of Dicel Learning Model and Social Attitudes upon Learning Outcomes of Indonesian Food Management Course

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ABSTRACT

This study aims to (1) examine differences in student learning outcomes of Indonesian food management courses by applying DICEL learning model and conventional learning model, (2) examine differences in student learning outcomes in Indonesian food management course for students who have high social attitudes and students who have low social attitudes, (3) examine the interaction between the application of DICEL learning model and social attitudes toward learning outcomes in Indonesian foodmanagement courses. The research used a quasi-experimental design. The population was the students of Culinary Arts Program of UNESA and UNIPA, with research sample, the students of Culinary Arts Program of UNESA and UNIPA of class. Determination: (1) the experimental class was taught using DICEL learning model (X1); (2) the control class was taught using the conventional learning model (X2). Data collection techniques: a. Objective test (Pretest and postest) for measuring student's test result. b. Social attitude questionnaire. c. Observation including: (1) student's attitude when doing practice, (2) practice results of making basic spice and practical application of basic spice for cuisine from various region in Indonesia.The results of the research shows that (1) there are differences of students learning outcomes in Indonesian foodmanagement courses using DICEL learning model and conventional learning model, (2) there is difference of student learning outcomes in Indonesian foodmanagement course for students who have high and low social attitudes, (3) there is interaction of application of DICEL model and the social attitudes toward the student learning outcomes in Indonesian food management course.

KEYWORDS: Learning Model, Social Attitude, Learning Outcomes

INTRODUCTION

Indonesian foodmanagement Indonesia is one of the courses that must be taken by the students of Culinary Arts Concentration. The purpose of this course is to enable the students to understand, review and master the skills ranging from the ability to explain the understanding of Indonesian spices and herbs, to classify the Indonesian spices, and to process the basic seasoning and apply basic flavors of various Indonesian cuisine[1] Seasoning in Indonesian cuisine plays a very important role, because the taste of the cuisine is dependent upon how one mixes spices mixes. The students, however, whose schools backgrounds are general or Islamic High Schools never learn about spices They therefore less understand about the various kinds and functions spices for Indonesian cuisine. In order to achieve the above objectives, it is necessary to implement learning based on learning achievement[2]. The good strategies, learning methods and assessments are undeniably necessary.

The teaching model is part of a teaching method along with other instrument factors need to be taken into account in order to improve the quality of education. DICEL is learning by combining three learning models: directinstruction, collaborative learning and e-learning. All three models can be developed to improve student learning outcomes.

Social attitude is needed by people who are involved in the field of Culinary Arts, such as honest, trustworthy words, actions, and work, discipline, responsibility, attitude tolerance and actions, mutual cooperation work with others to achieve mutual goals with other people, share duties and help to be sincere, polite and courteous. The employee recruitment in industrial world doesn not only look for employees who have high intellectual ability, but also consider the social attitude, because with high intellectual ability and high social attitude in work, will determine the success of a work industry.

Based on the above description of the problem, it can be concluded that the learning of Indonesian food management needs to be implemented optimally, with the design of learning models

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relevant to the expected competencies, tailored to the development of science and technology today. The formulation of problems that is raised by the researchers are: (1) is there any difference in student learning outcomes in the Indonesian foodmanagement courses learning by using the DICEL learning model and by the conventional learning model?, (2) is there any difference in student learning outcomes in Indonesian foodmanagementcourse between the students who have high social attitudes and the ones with low social attitudes?. And (3) is there an interaction of application of DICEL learning model and social attitude toeards the student learning outcomes in Indonesian foodmanagement course?

Learning model

Learning model is a plan or pattern used as a guide in planning the learning in the classroom or in tutorial. The learning model refers to the approach to be used, including learning objectives, learning activities, learning environment and classroom management.

DICEL is learning by combining three models of learning, they are directinstruction, collaborative learning, and e-learning. The combination of these three models will be applied in lectures at the Home Economics Department of University of PGRI Adi BuanaSurabaya for the Indonesian foodmanagement course.Direct Intruction or direct learning is generally designed specifically for developing learning activities on the part of students related to aspects of procedural knowledge (knowledge of how to do things) and declarative knowledge (knowledge of something which can be fact, concept, principle or generalization) [3].Founders of social constructivism known for the theory of "Zone of Proximal Development" (ZPD). *Proximal* in simple language means "next" Vygotsky observes, when learners are given a task for themselves, they will work as well as they collaborate[4]. Opinion stating that students will be easier to find and understand difficult concepts when they can discuss with their friends[5].Learning in the 21st century will rely heavily on information technology especially the use of computers[6]. This change directly involves the process of teaching and learning and education. The development of computer and internet technology in the education system has improved the teaching and learning stages. Learning strategies employ computers and the internet in education as well as opinions. Similarly, the research results by Niam Wahzudik show that today's learning is not only limited to the space and time, and scheduled face-to-face. Due to the progressively advanced science and technology there have been new changes in the learning system that more utilize the internet facilities. Define e-learning with the term Web-based Training (WBT) because it is more oriented to the function of training. WBT is an integrated learning practice through the internet so that learning can directly access what competencies which will be specifically studied in accordance with the learning levels[3].

Social Attitudes

Attitude is the individual consciousness that determines the real action in social activities. In the process of learning this attitude is necessary, considering the shift of paradigm of honesty in the test. In the 2013 curriculum the attitude component becomes its own assessment, only the teacher should be assessed. The attitude assessment according to the curriculum of 2013 is: a) honest, b) discipline, c) responsibility, d) tolerance, e) working together, f) polite, and g) confident [7].

Based on the research results there were differences in learning outcomes that were not significant between groups of students who had high social skills and the students who had low social skills. There was no significant effect of interaction between achievement motivation and social skills on learning outcomes[8].

Learning outcomes

Learning outcomes according, are the abilities learners have as a result of learning actions and can be observed through the learner's performance. According to some experts, there are various types of learning outcomes [9]. One of them is that there are five types of learning outcomes: intellectual skills, cognitive strategy, verbal information, motor skills, and attitude [10].

Assessment of learning outcomes is intended to determine whether or not the graduate competency standards have been established. Competence can be used to discover the standard level of students' mastery of the materials in various subjects as a whole concerning intellectual, social, creativity, and skills aspects. This assessment is also intended to maintain the quality of organizational education institutions, whose assessment is determined from the aspects of learning outcomes in a sustainable manner. There are three domains that are measured to be the result of learning they are cognitive, affective, and psychomotor domains.

METHODS

The present research employed the quasi-experimental design[11], with the variables a) the independent variables of the learning models, b) the moderator variable of social attitudes having two dimensions namely (1) high social attitude (2) low social attitude and c) dependent variable of student learning outcomes referring to cognitive, affective and psychomotor aspects. The population in the study was all students of Culinary Arts Departments (UNESA and UNIPA); while the samples were students of Culinary Arts Departments of class of 2015 of UNESA and Home Economics Department of UNIPA divided into an experiment class, a control class and test classes (x1, x2, and x3 classes). The research was conducted in UNESA and UNIPA of the third semester (form August 2016 to March 2017).

Data collection techniques: a. Objective test (Pretest and postest) for measuring student's test result. b. Social attitude questionnaire. c. Observation including: (1) student's attitude when doing practice, (2) practice results of making basic spice and practical application of basic spice for cuisine from various region in Indonesia.The data were analyzed by two factor variant analyses, the statistical technique used SPSS version 21. The test of null hypothesis (Ho) is done at 5% significance level.

RESULTS

A. DescriptiveResults Research

The data collected is obtained from the results of tests and observation and question form sheets that serve as data in this study. The results of the data collection of the applying DICEL learning model and conventional and social attitude of the raw score is converted to a raw score.

Table 1. DescriptiveData ofStudent Learning Outcomes of Application of DICEL Learning Model and Social Attitudes

LEARNING MODEL	ATTITUDE CATEGORIES	Mean	Std. Deviation	N
DICEL	Low	104.63	4.68	19
	High	111.25	3.80	24
	Total	108.33	5.33	43
CONVENTIONAL	Low	104.21	3.50	28
	High	103.79	8.16	14
	Total	104.07	5.41	42
Total	Low	104.38	3.98	47
	High	108.50	6.76	38
	Total	106.22	5.75	85

From the above table, 24 students obtained the average learning result of 111.25 with DICEL learning model and high social attitude category, 19 students obtained the average of learning result value of 104.63 with DICEL learning model and low social attitude category. Twenty eight students earned an average of 104.21 learning outcomes with conventional learning model and high social attitude category, 14 students gained an average of 103.79 learning outcomes with conventional learning model and low social attitude category.

B. Analysis of Student Learning Outcomes

Analysis of test results of student's learning differences in courses management of Indonesia food which applying DICEL learning model and conventional learning model.

1. Distribution Normality Test

Normality test done to see whether data in the form of knowledge learning outcomes tests on experimental classes and control classes Gaussian or not. Test of normality on score pretesexperimental class and class control using test Kolmogorov-Smirnov.

Tabel 2.Cognitive Learning Results Normality test on Classroom Experiments and Classroom Control

One-Sample Kolmogorov-Smirnov Test	
Kolmogorov-Smirnov Z	1.01
Asymp. Sig. (2-tailed)	0.26

2. Homogenity

Test homogeneity test done to test whether students are learning with a learning model DICEL group experiments and dibelajarkan students with models direct instruktion in the control group is homogeneous. Test results of its homogeneity pretes learned knowledge is done through the

test Levene's Test.

Tabel 3.Test of Homogenity Cognitive Learning Results in Class experiments and Classroom Control

Levene's Test of Equality of Error Variances[a]			
Dependent Variable:Pretes_Eksperimen_Kontrol			
F	**df1**	**df2**	**Sig.**
2.55	3	81	0.06

In the table above, the significance value (sig.)=0.06 was obtained. The value of significance was then compared to the critical value, so it obtained 0.06>0.05 which means significant. Thus the data obtained from the results of research met the homogeneity.

C. Hypothesis Testing

In this study are described in statistical calculation results to test hypotheses 1, 2 and 3, which uses SPSS analyzed by two factor variant analyses techniques with the program with the results as described below in.

Tabel 4. Student Learning Outcomes by Application of Model learning and Social Attitude

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	850.76[a]	3	283.59	11.94	0.00
Intercept	89195.00	1	891951.00	37551.10	0.00
MODEL	308.37	1	308.37	12.98	0.00
KAttitudes	190.20	1	190.20	8.01	0.01
MODEL * KAttitudes	246.52	1	246.52	10.38	0.00
Error	1923.99	81	23.75		
Total	961867.00	85			
Corrected Total	2774.75	84			

The first hypothesis, F statisticsof 12.98 and the probability of 0.00was smaller than the real level of 0.05, Ho was then rejected and Hawas accepted, meaning that there were differences in student learning outcomes in Indonesian FoodManagement course learned using the DICEL learning model and the conventional learning model.

The second hypothesis, F statistics of 8.01 and probability of 0.00was smaller than the real level of 0.05 thus Ho was s rejected and Ha accepted. Thus it can be concluded that there were differences in student learning outcomes in the course of Food Management Indonesia for students who had high social attitudes and students who had low social attitudes.

The third Hypothesis, F statistics was equal to 10.38 and probability was equal to 0.02which was smaller than real level 0.05 Ho was thus rejected, meaning that there was interaction of application of DICEL model and social attitudes towardsthe results of student learning in Indonesian Food Management course.

DISCUSSION

Effect of Learning Model upon Learning Outcomes

The results showed that there were significant differences in the student learning outcomes of Indonesian foodmanagement courses between those treated using the DICEL model and the conventional model. From the result of analysis of two factor variances (see Table 4) it obtained F statistics equal to 12.98 and the value of probability significance equal to 0.00 that was still far below level of significance equal to .05. Thus, the DICEL learning model had a significant difference from the one of the conventional model. It means that the DICEL learning model had an effect on the learning results compared to the conventional model.

Having been viewed from the mean scores, the learning outcomes of the group of students with the application of the DICEL learning model was 111.25 higher than the mean scores of the students with the application of the conventional learning model, i.e. 103.79. This means that the application of the DICEL learning model had a better effect on the learning outcomes. The influence of the learning model shows that the main influence (main effect) was strong on the acquisition of learning outcomes.

The students who studied with the DICEL model got more superior learning achievement compared to the students who studied with the conventional model.

The DICEL learning model is advantageous to be apply to the learning, because this model consists of three models of learning consisting of the model of Direct Instruction) based on the idea of contructivism that more give the concepts, e.g. aspects of procedural knowledge (knowledge of how to do something) and declarative knowledge (knowledge of something can be a well-structured fact, concept, principle or generalization) that can be learned step by step, in accordance with the characteristics of Indonesian Food Management courses that require an understanding of procedural concepts, so that students will be more receptive in learning the materials. Thus the impact of this teaching is the achievement of the completeness of academic content and skills and ability of the students. This is in line with the research[12] that the groups of children who used direct instruction modification model were different in terms of learning acquisition of drawing clove-motif ornaments from the children using the conventional drawing models. The main purpose of the direct learning model was to maximize the use of student learning time[13].

Collaborative learning islearning based on constructivism that learning is an effort to give meaning by the students in their experience through assimilation and accommodation toward the direction of the formation of cognitive structure[14]. The lessons implemented position students as subjects actively engaged in thinking activities by developing insights about themselves and their environment. In this instance, the students are studying and working in a process[15]. Lecturers collaboratively study the important messages about the environment with various interpretations and provide opportunities for students to develop their ideas widely. The step is carried out to improve the ability of students in adjusting to their environment. Unlike the conventional learning that emphasizes more information transfer, the collaborative learning emphasizes the importance of learning in context, realistic problem solving in situations of meaningful tasks and interaction with other students. While the Collaborative Learning model constitutes a group that work together for the intended purpose.Collaborative Learning as a group working together for the intended purpose is in line [16], that lecturers can use collaborative learning in the classroom, to improve the ability to facilitate the achievement of student learning outcomes.Indicated that the groups of students who studied with the collaborative learning patterns had higher learning achievement than those who studied with the competitive learning patterns, thus enhancedthe cooperative skills and increasedthestudents' active participation in learning[17]. The students were given the opportunity to solve problems collaboratively in groups that would proceed for practice. This is consistentindicating that the collaboration skills are indispensable in today's life. Now, success is not the fruit of competition, but of collaboration[18]. It also suits the demands of the working world, that work will get maximum results if a work can be done together.

E-Learning, accordingto[6], is learning in the 21st century which relies heavily on the information technology, in particular the use of computers. This change directly involves the process of teaching and learning and education. The development of computer and internet technology in the education system has improved the teaching and learning stages[18]. The learning strategy uses computers and the internet in education which is relevant[19], that e-learning is the use of the computer. Define e-learning as the term Web-based Training because it is more oriented to training functions. WBT as an integrated learning practice through the internet so that learning can directly access what competencies will be specifically studied according to the learning level [3], while in tune with the courses that require to follow the development of computer and internet technology in the education system. By using the computer-assisted learning strategies and the internet in education the student learning outcomes will considerably improve, in line[20], suggesting that the instructional techniques on critical thinking with online dispositions can foster creativity in the discussion environment. This is the advantage of this model if applied to the Indonesian Food Management course which demands students to make spices and apply it to various cuisines in Indonesia, where currently cooking and recipe tutorials are very lively on the internet.

Thus the DICEL learning model is very suitable to apply to the courses which require practices, particularly foodmanagement. Students begin to learn from the skill gradually by forming a group to complete the task and utilize the internet as a source of learning, then students practice to get maximum results.

The Effect of Social Attitudes on Learning Outcomes

From result of analysis (Table 4), it obtained that F statistics was equal to 8.01 and the value of probability significance equal to 0.01 being still far below level of significance equal to 0.05. Thus there

were differences in student learning outcomes of the course of Indonesian foodmanagement for the students who had high social attitudes and the students who had low social attitudes.

The social attitudes had a significant effect on the student learning outcomes. When viewed from the average score (Table 2) the learning outcomes of the students having a high social attitude of 108.50 was higher than the mean score of the low social attitudes of 104.38. This means that the social attitudes had an effect on the learning outcomes. According Witherington, an attitude is a tendency to think or feel in a certain way or according to certain rules, by working together in groups that will help other students who are less able to complete the task. Responsibility, mutual respecst are also things that must be maintained in the group work.

Argues that individuals try to control their lives not only through individual self-efficacy, but also collective efficacy[21]. The collective efficacy is the belief of society that their joint efforts can produce certain social changes. Self efficacy and collective efficacy together complement each other to change the human lifestyle. It is in line[22], that there was a significant difference in the history of high school students who have negative social attitudes.Posits that the positive attitude affecting the student achievement in mathematics subjects [23]. This is in line study suggesting that students who had a positive attitude toward learning outcomessolved problems much better than those who had negative attitudes toward the Math lessons [24]. Social attitudes are potential that is already owned by each student either high social attitudes or low social attitudes can affect learning outcomes. This potential is difficult to change just like that, but it takes practice in the learning process so that it will improve student learning outcomes.

Interaction of DICEL model implementation and social attitudes toward learning outcomes

From the result of two-factor analysis of variance (Table 4), it obtained F statistics equal to 5.28 and value of probability equal to 0.02 smaller than real level of .05. It means that there was interaction of application of the DICEL model and the social attitudes to the result of student learning in Indonesian Food Management course. According[25], interaction is a matter of mutual action[26].cites that interaction is a two-way process that involves actions or deeds of communication and communication,whereas[27]argues that interaction is a reciprocal activity.

The research result showed that variables of the DICEL learning model and social attitudes are synergistic. It was meant to build mutual influence, so it was more advantageous if applied together or not in separation. If it were in separation it could have had a negative effect on the learning outcomes. These results also showed that the positive influence of the two factors was interdependent or influence each other on the student learning outcomes.

Attitudes emerge because of stimulus. The formation of an attitude is much influenced by the stimulation of the social and cultural environments, for instance, family, norms, religious groups, and customs. The close relationship between attitudes and behavior is supported by the notion of attitude suggesting that attitude is a tendency to act.

Some studies attempting at relating attitudes to behaviors showed somewhat different results, indicating only small relationships or even negative relationships. Who investigated the attitude towards labor [25], cited that a positive attitude considerably affects the achievement of students in mathematics subjects[22]. This is in line with the research, revealing that students who had a positive attitude towards learning outcomes solved problems far better than the students who had a negative attitude to the subjects of mathematics [23].

CONCLUSION

1. There were differences in student learning outcomes of Indonesian foodmanagement course learned by using the DICEL learning model andthe conventional learning model. It can be said that the DICEL learning model had an effect on the learning results compared to the conventional model proving that the DICEL learning model was superior to the conventional model.
2. There were differences in student learning outcomes of Indonesian foodmanagement course of the students who had high social attitudes and the students who had low social attitudes. The students' social attitudes had a significant influence on the student learning outcomes.
3. There was interaction of application of the DICEL learning model and the social attitudes towards the student learning outcomes of Indonesian foodmanagement course.

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