

Effects of Instructional Materials Conflict Management on Student Achievement

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Abstract

This study was carried out to ascertain the Effects of Instructional Materials on Students' Achievement in Conflict Management in FKIP Universitas Jambi as the case study. The design of the study was quasi experimental. Due to the smallness of the number, no sampling was carried out on the population. However, simple random sampling technique was applied to choose the experimental and control groups. The instrument for data collection was Conflict Management Achievement Test (CMAT) questionnaire. It contained a twenty (20) item multiple choice questions based on the topics selected for the study. The face and content validity of the instrument was ascertained by two experts, from Administrasi Pendidikan Department Faculty of Education, and one from Pusat Penjaminan Mutu Universitas Jambi. Kuder Richardson-20 statistic was used to test the reliability of the instrument and it yielded 0.80 which was deemed high enough for the study. The research questions were analyzed using adjusted mean and standard deviation. Test of Mann Whitney (data is not normally distributed) was used to test the null hypotheses. The result revealed that those taught with instructional materials performed significantly better than those taught without instructional materials. Significant cases were assessed using multiple classification analysis to determine contribution of each treatment to the level of significance. Based on this finding, it was recommended that instructional materials should be used in the teaching of Conflict Management since it enhances students' performance.

Keywords: Effects, Instructional Materials, Achievement, Conflict Management.

Introduction

In the curriculum of the Education Administration Study Program, Faculty of Teacher Training and Education University of Jambi, it has been determined that learning outcomes of Conflict Management course is that students have the competence to master theoretical concepts, apply, study, design, utilize science and technology in solving procedural problems in the field of conflict management in the administrative domain of education. The course is presented in the fourth semester, with the lecture participants in total 113 students divided into three (3) classes, namely class A (39), class B (35) and class C (39). To support the achievement of learning outcomes, 2016 has been created conflict management instructional materials based on the results of research and development using the model of Dick and Carey learning system (2009), namely: "(1) identify learning objectives; (2) conducting learning analysis; (3) analyzing student characteristics and learning context; (4) formulate specific objectives of learning; (5) developing assessment instruments, (6) developing learning strategies; (7) developing and selecting instructional material; (8) design and develop formative evaluation; (9) revising the learning program" (p. 6). Product development outcomes are conflict management instructional materials that include four chapters: chapter 1: basic concepts of conflict, chapter 2: types of conflict, chapter 3: causes and impacts of conflict, and chapter 4: conflict management.

To see the effectiveness of instructional materials that have been developed required effects testing on improving student achievement. Empirically some research development of instructional material has been real can improve learning achievement. The Nwike & Catherine (2013) study concluded "that students taught with instructional materials performed better than those taught without. This shows that students learn and perform better when they are taught with instructional materials because the use of instructional materials gives the students the opportunity to see, feel and touch the materials during teaching" (p. 107). According to Abdu-Raheem (2016) "The students taught with instructional materials have excellent achievement scores compared with those taught without any material" (p. 37). Research Achola et al. (2016) concluded "...that teaching using instructional materials improved the performance of learners in various learning activities...The improved performance was in a range of 11% to 18%" (p. 27). According to Oluwagbohunmi & Abdu-Raheem (2014) "Instructional materials are essential and significant tools needed for teaching and learning of school subjects to promote teachers' efficiency and improve students' performance. They make learning more interesting, practical, realistic and appealing. They also enable both the teachers and students to participate actively and effectively in lesson sessions. They give room for acquisition of skills and knowledge and development of self- confidence and self-actualization" (p. 32).

Problem Statement: Student learning achievement for conflict management courses in the last three years shows a declining trend. Students have learning difficulties. Students' learning difficulties are thought to be caused by their difficulty in obtaining instructional materials. Now conflict management instructional materials have been

developed. The problem of this study: what is the effect of instructional materials on students' achievement in Conflict Management?

Research Questions: The study was guided by the following research questions. 1. What is the mean achievement scores of students in conflict management when taught with instructional materials and when taught without instructional materials? 2. What is the achievement scores of male and female students when taught with instructional materials and when taught without instructional materials.

Hypotheses: H₀₁: There is no significant difference in the mean achievement of students when taught with instructional materials and when taught without instructional materials. H₀₂: There is no significant difference in the mean achievement of male and female students when taught with instructional materials and when taught without instructional materials. The Null hypothesis was tested at 0.05 level of significance.

Literature review

Learning achievement

Achievement of learning according to Ahmadi and Widodo (2013) is "the result of interaction of various factors that influence it both from within (internal factors) and from outside the self (external factors)" (p. 138). Tu'u (2004) suggests that "learning achievement is the fostering of knowledge or skills developed by the subjects, typically indicated by the value of the test or the value scores provided by the teacher" (p. 75). This shows that the achievement of learning is the level of achievement that has been achieved by students or students to the goals set by each field of study after following the program of teaching within a certain time. Learning achievement is an assessment of learning activity results expressed in the form of symbols, numbers, letters or sentences that can reflect the results that have been achieved every student in a certain period. Therefore, learning achievement is a skill or success obtained by someone after doing an activity and learning process so that in a person is experiencing behavioral changes in accordance with the competence of learning.

Learning achievement has several functions, among others: as an indicator of the quality and quantity of knowledge that has been mastered by students, as an indicator of mastery of science and technology, quality indicators of educational outcomes and productivity of educational institutions, indicators of student success, and is an indicator of absorbency of instructional materials delivered teachers to students.

According to Arikunto (2011) the way of measuring learning achievement is as follows: "(1) Diagnostic test is a test used to determine the weaknesses and advantages of students by looking at the symptoms so it is known weaknesses and advantages of the students can be treated appropriately, (2) Formative test is to find out how far students have understood a particular unit of learning. This test is given as an attempt to improve the learning process, formative tests held before or during the lesson, and (3) The Summative Test is the final exam of the semester. From this summative test students' learning achievements are known, summative tests are held during the whole teaching and learning activities" (p 26). According to Suryabrata (2005) "Students' learning outcomes can be measured by: (1) Providing specific tasks, (2) asking some things related to a particular lesson, (3) giving tests to students after a certain lesson, and (4) Give a repetition" (p 294). Meanwhile, according to Syah (2012) "Student achievement can be measured from the evaluation result which has been followed by the students which can reflect the ability of the students in understanding / mastering the taught material" (p 216). From some opinions it can be argued that learning achievement is a good result achieved by individuals as a process in which behavior is generated or changed through exercise or experience or interaction results of various factors that influence it both from within and from outside the individual.

The factors that influence the achievement of learning are proposed Purwanto (2006) are: "(1) Factors that exist in the organism itself is called individual factors, (2) Factors from outside the individual we call social factors" (p 112). Included in individual factors include: factors of maturity / growth, motivation and motivation of personal factors. While the social factors such as family factors / home conditions, teachers and how to teach, the tools used in teaching learning, environment and opportunities available. Dalyono (2005) points out that "the factors that influence learning achievement are: (1) internal factors (factors that come from within), these factors include health, intelligence and talent, interest and motivation as well as learning styles, and (2) External factors (factors that come from outside), these factors include family, school, community, and the surrounding environment" (p 55). From some opinions above can point out that the factors that affect learning achievement is a factor that comes from the student self and factors that come from outside the student self.

Instructional materials

Instructional materials are the different teaching aids or apparatus which a classroom teacher employs to facilitate his or her teaching for the achievement of the stated objective (Nwike and Catherine, 2013). Agun (1992) defined instructional materials as those materials which are helpful to the teachers and students and which maximize learning in various areas. The use of instructional materials in teaching of models of teaching is very important because it provides a concrete basis for conceptual thinking motivates people to learn and captures pupils' imagination if used correctly (Ajalla, 1997). Instructional materials are the teaching and learning aids used by

teachers to make the content of what they present more vivid, interesting and pragmatic to learners. The study by Brown (2010) indicated that Instructional materials vary from simple and inexpensive ones, such as the chalkboard, flat pictures, text books, flash cards, counters, diagrams, worksheets, illustrations, and maps, to more complicated and expensive ones like the television, computers, movie projectors, slides and filmstrip projectors. Instructional materials are broadly grouped into two categories printed and non-printed materials (Brown, Oke & Brown, 2010).

Panen & Purwanto (2007) suggests that instructional materials are "self-sufficient" for being systematic and complete, so that students can easily read, listen and re-learn things they have not understood" (p 7). This reading activity has an important role (Haryadi, 2003: p 161). From reading activities, one will gain a plurality of diverse and diverse knowledge, extensive experience, good language behavior, and finally be able to be mature and rational (Hastuti 1985: p 1). So also Nasution states that to gain progress one must read and learn what he read (Nasution: 1972: p 83). Taba in Sanjaya (2008) states "...that instructional material can be classified into 4 levels namely; special facts, principal ideas, concepts, and systems of thinking" (p 144). A special fact is a simple form of curriculum material. This particular fact is of low usefulness. Common basic ideas are principles or generalizations. Understanding the underlying idea, allows us to describe a number of specific symptoms or a number of subject matter. Concept, understanding the concept means understanding something abstract, thus encouraging students to think more deeply. Concepts will emerge in various contexts, so that conceptual understanding will be related in various situations, such as semantic concepts, meanings, synonyms, antonyms and so on. Systems of thought, related to ability, to solve problems empirically, systematically, and controlled later called scientific thinking. Every discipline has a different system of thinking. Therefore, the material that demands scientific thinking is closely related to the structure of science.

Meanwhile, according to Majid (2007) "instructional material can be grouped in four forms: (1) printed materials such as handouts, books, modules, student worksheets, brochures, leaflets, wallcharts, photos / drawings, (3) audio-visual materials such as video compact disks, films, and (4) interactive instructional material (interactive), such as cassettes, radio, discs and audio compact disks. instructional material) such as interactive compact disks" (p 174). Instructional material can be displayed in various forms, such as print, audio, visual and audio visual. If the instructional material are well structured and packed then the instructional material will bring benefits both for educators and learners in the learning process. Therefore the development of instructional material should consider the characteristics of instructional material. The characteristics of instructional material according to Daryanto (2013) are: "(1) Self instructional, through instructional material students can membelajarkan himself. In the instructional material should contain a clear learning objective so that students can measure their own learning achievement, (2) Self contained, in the instructional material must contain a unified material entity, (3) Stand alone, developed material can be used (4) Adaptive, instructional material should adapt to existing technology developments as well as in accordance with applicable curriculum, and (5) User friendly, instructional material should be in accordance with the development of the user so that students can easily understand content of the instructional material" (p 9).

Methodology

Research Design. The design adopted in the study was quasi-experimental. Specifically, a pretest and post-test control group design was implemented. The design involved students from intact classes. The study made use of the experimental group and the control group. The experimental group was taught with instructional materials while the control group was taught without instructional materials.

Population and Sample. The population of the study were participants of the Conflict Management classes, which consisted of two classes of one hundred and thirteen (113) students. Class A thirty nine (39) students, Class B thirty five (35), and Class C thirty nine students. The students were from Education Administration Study Program of Faculty of Teacher Training and Education University of Jambi. No sampling was carried out due to the small number of the population. However simple random sampling was carried out to select the experimental and control groups. Class A is selected for the control group and Class C students in the experimental group.

Instrument. The instrument for data collection was an achievement test titled "Conflict Management Achievement Test" (CMAT), which was a 80-item multiple choice questions developed by the researchers and based on the selected topics of the curriculum. The face and content validity of the instrument was ascertained by 2 experts - one from Education Administration Department of Faculty of Teacher Training and Education, and one from Quality Assurance Center of Jambi University. Their validions and inputs apply valid instrument. The test-re-test of the instrument was done by giving it as a test to 35 students from class B that were not part of the study. Pearson Product Moment Correlation Coefficient Analysis was used to determine the scores of the two sets. The correlation coefficient of 0.73 was obtained. The estimation of internal consistency was also determined by application of Crombach Alpha on the responses of 35 students from a class B that was not part of the study. The reliability co-efficient of 0.75 was also obtained, hence proving to be an adequate instrument for the study. The research questions were answered using an adjusted mean and standard deviation, while the hypotheses were tested using an analysis of Covariance (ANCOVA) if the data is normally distributed, use Test of Mann Whitney if the

data is not normally distributed. Significant cases were assessed by means of multiple classification analysis to determine the contribution of each treatment level to the significance.

Experimental Procedure. Before the commencement of the experiment, the researchers sought approval from the Head of Education Administration Studies Program and regular class college teachers; and explained the purpose of the study and treatment implementation. Based on this need, the same lesson periods were approved for conflict management for the study within the experimental period. A pre-test on conflict management achievement on the selected topics for the experiment were administered by the college teachers to ascertain the level of achievement of students. After the pre-test, the regular conflict management college teachers commenced the experiment in their respective class, adhering strictly to the lesson plans written by the researchers. The experimental group was provided with all the necessary instructional materials needed for teaching the topics such as: charts, pictures, video clips, etc. The experiment lasted for four weeks (four subject matter), after which the same instrument was re-administered on the two groups as post-test.

Results

1. Data Normality (Shapiro-Wilk Normality Test):

a. If the value is Sig. > 0.05, then the data is normally distributed, b. If the value is Sig. < 0.05, then the data is not normally distributed.

Tests of Normality

	Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Value	Experiment	.159	39	.014	.927	39	.015
	Control	.177	39	.003	.937	39	.030

a. Lilliefors Significance Correction

Based on the Test of Normality output, the significance value for the Experiment Class is 0.015, while the significance value for Class B is 0,03. Because the value of significance of the Experiment Class and Control Class is greater than < 0.05, it can be concluded that the learning achievement data is **not normally distributed**.

2. Homogeneity of data

ANOVA

Experiment

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	170.210	10	17.021	.959	.499
Within Groups	497.117	28	17.754		
Total	667.327	38			

Based on the SPSS output above it is known that the value of significance of Experiment Class Value and based on control class value = 0,212 > 0,05, mean Experiment Class Value and control class value have same variant.

3. Hypothesis testing

Since the data is not normally distributed, the hypothesis testing uses a Different Test of Mann Whitney. Hypothesis proposed in this research is H_{01} : There is no significant difference in the mean achievement of students when taught with instructional materials and when taught without instructional materials. The basis of decision making as a reference in the mann-whitney test: if the value of Significance or Asymp. Sig. (2-tailed) is smaller than probability 0.05 then " H_{01} is rejected".

Ranks

	Class	N	Mean Rank	Sum of Ranks
Achievement of students	Experiment Class	39	56.38	2199.00
	Control Class	39	22.62	882.00
	Total	78		

Test Statistics^a

	Achievement of students
Mann-Whitney U	102.000
Wilcoxon W	882.000
Z	-6.609
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Class

Based on the "Test Statistics" output in the mann-whitney test above it is known that the value of Asymp. Sig.

(2-tailed) of 0.000 is smaller than < probability value 0.05. Therefore, as the basis of decision making mann-whitney test above it can be concluded that "H₀ rejected". Thus it can be said that there is a difference in learning achievement between the class of Experiment with the Control class. Because there is a significant difference then the formulation of the research problem also can be answered that is "there is the influence of instructional materials use on learning achievement in Conflict Management course".

The difference in learning achievement is viewed from a gender perspective.

Chi-Square Tests

Gender		Value	df	Asymp. Sig. (2-sided)
Male	Pearson Chi-Square	23.905 ^b	14	.047
	Likelihood Ratio	31.349	14	.005
	Linear-by-Linear Association	18.856	1	.000
	N of Valid Cases	38		
Female	Pearson Chi-Square	34.333 ^b	14	.002
	Likelihood Ratio	47.134	14	.000
	Linear-by-Linear Association	25.711	1	.000
	N of Valid Cases	40		
Total	Pearson Chi-Square	55.685 ^a	16	.000
	Likelihood Ratio	71.977	16	.000
	Linear-by-Linear Association	45.035	1	.000
	N of Valid Cases	78		

a. 32 cells (94.1%) have expected count less than 5. The minimum expected count is .50.

b. 30 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

The table above shows the Asimp.Sig value in the male gender of 0.047 and the Asimp.Sig value in the Female gender of 0.002. Since the Asimp.Sig value on Gender Men (0.047) and Female (0.002) < 0.05, it can be concluded that "H₀ is rejected", which means "there is a significant difference between learning achievement Stress Management Courses Gender male with female when taught with instructional materials and when taught without instructional materials".

Discussion

The results showed that students taught with instructional materials performed better than those taught without instructional materials. This finding is supported by the findings of Esu, Erukoha and Umoren (2004) "that instructional materials facilitate learning of abstract concepts by helping students to concretize ideas and also stimulate their imagination". This finding equally lends credence to the view of Mathew (2012) in Ntasiobi et al. (2014) "who had earlier stated that the use of instructional materials make teaching effective as it enables learners to participate actively in classroom instruction, which subsequently leads to improved achievement" (p 42). According to Oluwabohunmi dan Abdu-Raheem (2014, p 32) "Instructional materials are essential and significant tools needed for teaching and learning of school subjects to promote teachers' efficiency and improve students' performance. They make learning more interesting, practical, realistic and appealing. They also enable both the teachers and students to participate actively and effectively in lesson sessions. They give room for acquisition of skills and knowledge and development of self-confidence and self-actualization". In a own study, Olumori et al. (2010) observed that instructional materials help teachers to teach conveniently and the learners to learn easily without any problem. They asserted that instructional materials have direct contact with all sense organs. According to Abolade (2009), "the advantages of instructional materials are that they are cheaper to produce, useful in teaching large number of students at a time, encourage learners to pay proper attention and enhance their interest". According to Josua in Abiodun-Oyebanji & Adu (2007), instructional materials are all things that are used to support, facilitate, influence or encourage acquisition of knowledge, competency and skills". "The students taught with instructional materials have excellent achievement scores compared with those taught without any material (Abdu-Raheem, 2016, p. 37). A study by Ndalo & Okoth (2010, p 21) "...indicated that instructional materials are believed to offer variety of experiences to the lesson and thus keep monotony and boredom at bay. They, thus make learning interesting, they help shorten the explanations and make abstract concepts to be understood easily by the learners. Effective uses of instructional materials provide firsthand experience with the realities of the social and physical environment and encourage active participation in the lesson. They also cater for individual learners' differences as they are able to appeal to several senses. Learning materials help in developing in the learners the power of observation, imagination and reasoning especially when using real objects as they manipulate and handle the resources".

Research Limitations

Although this research has obviously contributed to the development of conflict management literature, this research has limitations. One of the limitations of this research is that the students' classes are self-selected, ie students who attend classes or lectures given by the lecturer. Besides, most of the students (50%, or 2 classes) have taken the previous researcher class that is in second semester of education psychology course. They already have an impression on the researcher, so it is likely to have an effect on the acquisition of uncontrolled student learning outcomes in this experiment. Therefore in future studies researchers should be more independent of the selected class. Another limitation is the bias potential of the experimental data. Although researchers have attempted to control variables that may have an effect on the achievement of students 'cognitive learning outcomes, experimental data biases may occur because the instruments used measure students' cognitive learning outcomes as multiple choices, which can be cheated by non-serious students. So it could be contaminated learning result data and does not provide a picture of perfect data. Therefore future studies must take account of the student's dishonesty to avoid mistakes in the data.

Conclusions and Suggestions

Based on the findings of this development research, the following conclusions can be drawn: (a) conflict management course developed under the model model of Dick & Carey (2009) can be used for conflict management classes, (b) developed instructional materials has been realized has a positive impact of improving student achievement. Therefore, suggestions are proposed: (1) to improve students' motivation and learning outcomes, each learning process needs to develop instructional materials as part of instructional design, (2) lecturers need to be trained in the development of instructional materials to have skills in developing materials teaching and learning media in each subject that he is, (3) Faculty Leaders need to provide facilities in the form of supporting devices in the form of adequate wi-fi for instructional materials developed can be accessed by students.

Implications

The results of research on development of instructional materials have been significantly beneficial to enrich the literacy needed by students. Therefore, the head of the Faculty and / or the study program should be able to facilitate every lecturer interested in developing instructional material. This research has obtained factual information that the use of instructional materials can improve student achievement. Future research should therefore be expanded to examine the impact on students' affective and psychomotor improvements.

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