

IGNATIAN PEDAGOGY PARADIGM TO IMPROVE STUDENTS' COMPETENCE, CONSCIENCE, COMPASSION, COMMITMENT AND INTEREST ON PHYSICS RESEARCH METHODOLOGY COURSE

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Abstract

This research investigates the influence of the Ignatian pedagogy paradigm (PPI) toward the development of competence, conscience, compassion, commitment, and interest of physics students on their learning about research methodology course. The sample of this research is 48 students who took research methodology course. This research uses PPI as treatment. The instruments that were used are a questionnaire, observation, and documentation. The research uses quantitative and qualitative analysis. To compare the result of pretest and posttest, t-dependent test is used. The result of the research is that the competence, conscience, compassion, and interest of students significantly increase; but their commitment is not significantly improved.

Keywords: competence, conscience, compassion, commitment, Ignatian pedagogy paradigm, interest, research methodology course

Introduction

For several years, Sanata Dharma University (USD) has introduced and developed the Ignatian pedagogy paradigm (PPI) in their teaching-learning process. Several lecturers have studied and began to teach using the Ignatian pedagogy method. Some of them have done a research on their learning process. USD also gave support and grant for lecturers who did their research on this matter.

Beginning 2017 the physics research methodology course applies the ignatian pedagogy method in the learning teaching process. PPI dynamics such as context, experience, reflection, action and evaluation are implemented. By using those dynamics, students are hoped to develop their competence, consciences, compassion, commitment, and their interest toward this course.

The physics research methodology course is a course that should be taken by students who are studying in physics education program in USD. The course is mandatory to prepare students conducting and doing research for theses. The course consists of research knowledge and skill such as: what concepts are important for doing research, how to prepare, to do, and to report a research.

During the course students learn those research concepts, prepare small research either individually or in group, and do research alone in a school.

Until now in physics education program, a research about the Ignatian pedagogy paradigm on the research methodology course has not been conducted. So it is not known whether the Ignatian methodology is effective for improving student's competence.

Based on the situation, the research wants to know whether the Ignatian pedagogy paradigm could improve students' competence, conscience, compassion, commitment and interest toward the research methodology course.

Ignatian pedagogy paradigm

Ignatian pedagogy paradigm (PPI) is an education paradigm that uses Ignatian method for directing a retreat. In a retreat, someone wants to meet God. To do so, he/she should actively prays, meditates, and makes reflection; and a retreat guide helps him/her as a facilitator. So the most important is the retreatant. The center is the retreatant who wants to find God privately.

This paradigm is taken in the process of teaching-learning in schools. In the learning process students want to understand, to improve their knowledge and have better skills, so the important is students who want to learn. Students should be active in learning process, they should actively think, learn the topics, and make conclusion. Students should construct their own knowledge. So the learning process is active and put students as a center of schools. Teachers are facilitators to help students learning.

Ignatian pedagogy paradigm uses special dynamic in its learning process such as: context, experiment, reflection, action, and evaluation (Duminuco, S, J., 2000; Gallagher, Marianne & Musso, Peter, 2006; NN., 1993 & 2014; P3MP-LPM, 2012; Subagya, S.J., et.al., 2012; Suparno, 2015). Contexts are the situation of students who are learning. It can be previous knowledge, student's interest, motivation, their parent economic situation, and university learning situation. Teachers should know students' context so they can help students precisely.

Experience is what students experience during learning process. Experience can be direct or indirect experiences. Direct experience is experience that is done by students themselves. For example, students who learn mathematics, they should solve mathematics problems themselves. Indirect experience is experience that is not directly done by students. For example, students learn about volcano eruption from video or computer simulation. The task of teachers is to prepare what kind of experience should be done by students during their learning process. Sometime several teachers don't allow their students to experience for themselves. For example students learn about physics but never do experiment in their process. Students only hear the result from their teacher.

Reflection is the students' activity to reflect what they have done and experienced during learning process. They can be asked what they get from their experiences during learning process. What is useful for their life and what is not? What makes them happy and improved? What is good and not good? What is the impact of their experience for their life?

Action is an activity that emerges from the reflection. Students are asked to act according to their reflection. If students really have experiences, and they

really reflect on them, they will be driven to do something. For example, if they reflect that energy is needed and very important for all people, students will be aware to use all energy not only for themselves but also for other people. They will be happy to share energy with others.

After students learned using ignatian pedagogy, it should be evaluated whether the program is really good or not. So we can make evaluation on the program and make better.

The dynamic of PPI in this course

PPI has special dynamics such as: context, experience, reflection, and action. Physics education students who take the research methodology course are consisted of two groups. One group is from 2014 students, and the other is from 2015 students. For the 2014 students this course is mandatory, and for 2015 students this course is election. The 2014 students are more silent, because most of the expressive students have taken the course in the semester before. The 2015 students are more active, more creative, and happier. Most of the 2014 students are still taking PPL (learning practices in schools) so they are more tired and not energetic. During this course they are tired and sleepy.

Experience.

In this course students have many kind of experiences such as: (1) they have to read and learn the topics from the textbook before class, and they have to make presentation; (2) they have to find a special topic for their research assignment; (3) in small group they have to conduct a research about the happiness of USD students; (4) they should make proposal and conduct private research for their research assignment; (5) they should make observation and report; and (7) they should discuss some topics on research in class. By some experiences students are hoped to understand how to prepare and do a research.

Reflection.

During reflection, students explained the meaning of their experiences in studying research methodology, what do they learn about the course, and what they get from its learning process. They are asked to explain whether they become more competent, more conscience, more compassion toward friends, and commit to others.

Action.

During the research students' action is clearer. They plan to be more diligent, more aware about their life, and more honest. What they want to do next, can be seen from their reflection on the last test.

Four C values: competence, conscience, compassion, and commitment

Competence.

In this research competence means students' capability to do research. Whether students more understand and have skill to prepare a research and doing a research. They have competence if they know the important concept of a research, understand the research methodology, and are able to conduct and to report a research by themselves.

Conscience.

Students' conscience is the students' competence to know what is good and what is bad. Students are able to analyse a problem critically, they are diligent in collecting data and analyzing data. They don't like to deceive with their jobs. Compassion. During the course students become more compassion toward their friends especially who need help. They like to help friends who have problems in their life and their study, they want to work together during learning process. They become more compassionate one another.

Commitment.

Commitment in this research means that students become more serious during their learning process, they commit to their study group, they are able to responsible during study, and they are involved in their study group. They become more loyal and in solidarity with their friends and their study group.

Students' interest

Students' interest means that students like and want to study the topic seriously, they are happy in their study, they have high motivation to study, and they are happy during their study.

The research methodology course

The main purpose of this research methodology course is to help students understand the concepts of a research and have skill to prepare and to do a research. This course have a syllabus as follows: (1) Students understand the basic concept of doing physics research in school; (2) Students can explain correctly the research steps such as: choosing a problem; finding literature; doing hypotheses; getting sample; doing a treatment; choosing good instruments; checking the validity and reliability; and analyzing their result either qualitatively or quantitatively; (3) Students are able to conduct a research in schools; and (4) Students are able to report their research.

Based on the background, the purpose of this research is to find out whether by using the Ignatian Pedagogy Paradigm in the research methodology course, students improve their competence, conscience, compassion, commitment and their interest.

This research will be useful for giving input whether the ignatian pedagogy is really useful and helpful for students in improving their competence, conscience, compassion, commitment, and interest. It is also useful for the development of the ignatian pedagogy in Sanata Dharma University and in many schools that use PPI.

Method

This research is qualitative and quantitative research. It is experimental research. This research uses the Ignatian pedagogy method as a treatment. Instrument that are used is pretest and posttest. The test is consisted of same questions about competence, conscience, compassion, commitment, and interest of students toward the course. Observation also is used to see the students' situation during the class. The test consisted of 40 questions: 20 for competence and 20 questions for conscience, compassion, commitment, and interest.

The sample of the research is 48 students from physics education program of Sanata Dharma University, who were taking a course on methodology of research during one semester.

The treatment that is used is learning using the Ignatian pedagogy. During the learning process students doing some activities such as: studying the topic in a small group and giving presentation, finding a topic for their research assignment, preparing instrument, preparing proposal, and doing a research in school. They also make reflection and doing action.

For analysis the data, the t-test for two dependent groups is used. SPSS computer program is used to calculate the data.

Findings and Discussion

Using SPSS program, with t-test for the dependent groups, it is found the result as bellow (table 1):

Table 1. SPSS result

<u>Paired Samples Statistics</u>		Mean	N	Std. Deviation	Std. Error M
Pair 1	PreCompet	66.60	48	8.209	1.185
	PosCompet	75.56	48	8.331	1.202
Pair 2	PreConscie	18.56	48	2.072	.299
	PosConscie	20.33	48	2.035	.294
Pair 3	PreCompas	23.85	48	2.414	.348
	PosCompas	24.83	48	2.724	.393
Pair 4	PreCommit	16.21	48	1.786	.258
	PosCommit	16.33	48	2.253	.325
Pair 5	PreInterest	11.25	48	1.564	.226
	PosInterest	12.48	48	1.663	.240

Table 2. t-test result for dependent groups
Paired Samples Test

		<i>Paired Differences</i>		<i>95% Confidence Interval of the Difference</i>		<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
		<i>Std. Mean</i>	<i>Std. Error Mean</i>	<i>Lower</i>	<i>Upper</i>			
<i>Pair 1</i>	<i>PreCompet - PosCompet</i>	10.144	1.464	-6.013	11.904	6.119	47	.000
<i>Pair 2</i>	<i>PreConscie - PosConscie</i>	2.408	.348	-2.470	-1.072	5.095	47	.000
<i>Pair 3</i>	<i>PreCompas - PosCompas</i>	-.979	2.832	-1.802	-.157	2.395	47	.021
<i>Pair 4</i>	<i>PreCommit - PosCommit</i>	-.125	2.438	-.833	.583	-.355	47	.724
<i>Pair 5</i>	<i>PreInterest - PosInterest</i>	1.905	.275	-1.782	-.676	4.471	47	.000

According to the table 1 and 2, it can be seen that the competence, the conscience, the compassion, and the interest of students after learning process are significantly different. But the commitment of students is not significant. So it can be concluded that the Ignatian pedagogy improves students' competence, conscience, compassion, and interest; but it cannot improve students' commitment.

During observation, it could be said that students are more enthusiastic and enjoy the course. Their enjoyment can be seen from their happiness and seriousness in doing their research either individually or in their groups. They are also enthusiastic when they do a group research about the happiness of Sanata Dharma University students in Paingan. They work together happily, enthusiastic and they are happily in presenting their result. In addition, their score for the course most of them are very good (A or B).

Even though their commitment is not significant, but it is clear that students worked together in group very serious, they learned together better, and they are responsible with their job in group.

Analysis

From statistical analysis, it can be concluded that students' competence, conscience, compassion, and interest are significantly different. It means that students improve their competence, conscience, compassion, and interest after learning the methodology research course using ignatian pedagogy method. This research indicates that the ignatian pedagogy could develop students' competence,

conscience, compassion and interest. This result is similar with some research on PPI that this paradigm could improve students' competence, conscience, compassion.

Those experiences that are done by students in learning process really improve and make students better understand about what they learn. They don't develop only their competence, but also their characters such as conscience and compassion. What did students experience in group discussion, in group work, in doing research together, improve and influence their character. They become more compassionate to others and are pushed to work together.

The Ignatian pedagogy that stresses on students' activity, creativity, and collaboration, really helps students to improve their knowledge, their conscience, and compassion. This result also similar with the constructivism method that helps students more understand because they construct their own knowledge (von Glasersfeld, in Bettencourt, 1989; Suparno, Paul, 1997).

The commitment is not significantly different. It means that students don't improve their commitment. Even though the mean of pretest and the mean of posttest on commitment is different, but it is not significant. Maybe the reason is because the commitment score is high enough so it cannot become higher. The mean of pretest is 16, 21 (from max 20) and the mean of posttest is 16, 33 (from max 20). According to the observation, it seems that most students have high commitment with their jobs, their friends, their groups, and they are responsible with their jobs. It is clear that most students are happily work together with their friends in group. During group research they looked happy, energetic, and finished their research well.

Limitation of this study

This study has some limitations such as: (1) this study has no control group. So it is not complete experimental study. The reason is that there is only one class for the course during that semester. It is impossible to divide the class become two classes, because all students want to get the same method of learning process. (2) The researcher are not able to follow all students' activities during implementing the research, so their activities are not observed completely.

Conclusion

From the data analysis it can be concluded that by using the Ignatian pedagogy paradigm in learning the research methodology course, physics education students of Sanata Dharma University improve their competence, conscience, compassion, and their interest toward the course; but they do not develop their commitment. So in general the PPI really improve students' understanding and their characters. It means that the PPI can be used to develop students learning in USD.

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