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Effects of Project and Community-based Learning (PCBL) Affecting Pre-service Teachers' Satisfaction and Project Management Skills in Art and Culture

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Abstract

The objectives of this research were 1) to study the pre-service teachers' satisfaction on the project and community-based learning (PCBL); and 2) to compare the pre-service teachers' project management skills in art and culture before and after using PCBL. The duration of the experiment was academic year 2017. The samples were 30 pre-service teachers from the College of Teacher Education Student Union, Phranakhon Rajabhat University, Thailand. The research instruments consisted of two evaluation forms: satisfaction evaluation form on the PCBL with five Likert scale and project management skills in art and culture evaluation form with four Likert scale. The data was analysed by arithmetic mean (\bar{x}), standard deviation (S.D.) and paired samples t-test. The results were as follows: 1) The pre-service teachers' satisfaction on the PCBL was rated at an extremely satisfied level of 4.36; and 2) The pre-service teachers' project management skills in art and culture after using PCBL was higher than before the experiment with statistical significance at .05 level.

Keywords: Project and Community-based Learning (PCBL), Satisfaction, Project Management Skills in Art and Culture, Pre-service Teachers

Introduction

Art and culture learning in the community is an essential to learn from the local community to provide effective learning and deep understanding. Consequently, we should not study the textbook only, because some textbook cannot respond knowledge, beliefs and cultures in real life that occurs in the community. If we learned from the textbook only will be cut off from the cultural roots, learning from the learning resource will provide the learner with deep understanding. The real situation learning in the community is a learning process that learners can apply their knowledge and experience to use in the living life. These are consistent with Sinlarat (2014) that "Learning process

to provide students with the 21st century skills, the learners should be in an environment where they can learn as much as possible, teachers need to set their own goals, choose and screen information, crystallize in knowledge. Learning is a complex process that requires knowledge to be exploited in real life. Therefore, teachers are important people for learning management of art and culture in the community as stated in the Teachers Council Code of Conduct for Professional Ethics, A.D. 2013, Section 5, Code of Conduct for Society, No. 15, “Educators should to behave as a leader in the conservation and development of economy, society, religion, art, culture, wisdom, environment” (The Government Gazette, 2013: 74). Therefore, teachers are important leaders in the conservation and dissemination of arts and culture in the community by using local wisdom, arts and culture used in education to build values and benefits to learning in the 21st century.

Learning management in Thailand focus on the learner to understand the many theories or body of knowledge that is not develop problem solving skills into practice. It may not benefit the learner and the local community as it should. Nowadays, Thai education is just teaching the learners to know and follow the teacher as the research report on The Issues in Learning Management and the Qualification Framework of Teachers at Basic Education Level; the results of this research were as follows: teachers also focus on teacher-centered learning; it is not a learner-centered. This may reflect that teachers may not have developed a creative thinking process in order to develop a model for learning of learners to promote the problem solving skills (Chindanurak et al., 2014). From the interview of lecturer in the College of Teacher Education, Pranakhon Rajabhat University, about Project integrated learning activities with art and culture found that the students lacked the project management skills. The students were not write project report incompletely. The components of the project writing were inconsistent. Most of them can not to explain the procedures and details of products (Mahamart, Interview. May 19, 2017). In addition, the project may be experiencing some problems in terms of a relatively long time. Teachers need to plan each step to be concise and to use patience in explaining knowledge, source of information, and suspicions to students. The findings showed that the suspicions affecting students’ happiness and motivation to work successfully (Chaiyen, 2016: 7). Moreover, the researcher interviewed the pre-service teachers in undergraduate level found that pre-service teachers do not attend the student affair (outdoor activities) and creativity learning because instructional activities do not focus on practicing (Khorchooklang, Interview. May 19, 2017). This is one of the reasons why the pre-service teachers do not know the art and culture of local and realise the valuing local. From the problem, the researcher studied the guideline of activities to develop project management skills in art and culture and found that project-based learning, and community-based learning

can be integration to new learning model as project and community-based learning (PCBL); that can be used to develop learners effectively.

Art and culture preservation is a core mission of the Student Affairs Department, College of Teacher Education (CTE), Phranakhon Rajabhat University. The key people in the operation are the lecturer and pre-service teachers from the College of Teacher Education Student Union. Although project activities are one of the activities used in student development, the activities have not been defined the method and technique clearly that affect to project management skills in art and culture of pre-service teachers. From the focus group of CTE lecturer found that pre-service teachers were still lacking the project management skills in art and culture. They have not learned the art and culture from local philosophers or villager. They had no systematic planning. In addition, it was found that while some pre-service did not like the project process and did not like to manage the project. Thus, using project and community-based learning would help to develop the pre-service teachers' project management skills in art and culture including satisfaction on the project and community-based learning (PCBL).

From the above rational and significance, the project and community-based learning (PCBL) can develop various skills and attitudes. Thus, the researcher used these findings to develop pre-service teachers' project management skills in art and culture and study the pre-service teachers' satisfaction on the project and community-based learning (PCBL).

Research Objectives

The objectives of this research are as follows:

1. To study the pre-service teachers' satisfaction on the project and community-based learning (PCBL).
2. To compare the pre-service teachers' project management skills in art and culture before and after using PCBL.

Research Question

The research is designed to answer the following questions: How the PCBL affects the pre-service teachers' satisfaction and project management skills in art and culture?

Conceptual Framework

The conceptual framework of this research is using the project and community-based learning (PCBL) to develop pre-service teachers' satisfaction and project management skills in art and culture.

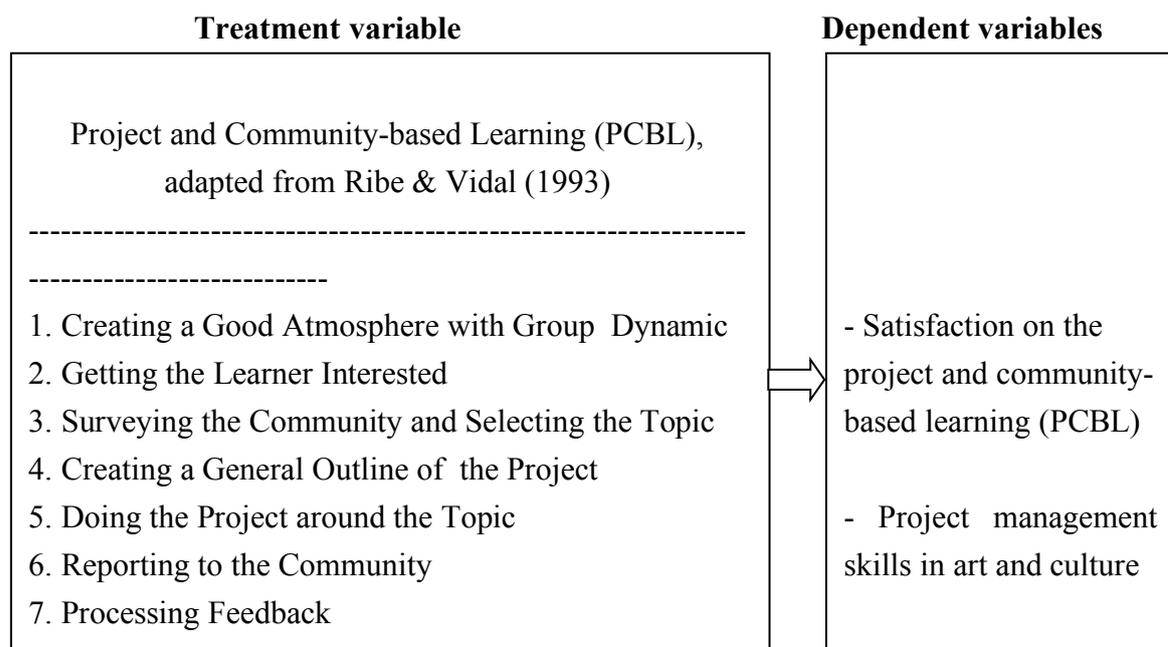


Figure 1. Conceptual Framework

Methodology

This methodology research was designed with the pre-experimental research. Experimental design was a single group pretest - posttest design.

Table 1

Experimental Design

Group	Pretest	Treatment variable	Posttest
E	T1	X	T2

E = Experimental group

X = Treatment of the project and community-based learning (PCBL)

T1 = Pretest

T2 = Posttest

Populations and Samples

1. The populations used in this research were 70 pre-service teachers in the College of Teacher Education Student Union, Bachelor's degree in Education, Phranakhon Rajabhat University, Bangkok, Thailand.
2. The samples were 30 pre-service teachers from the College of Teacher Education Student Union, Phranakhon Rajabhat University, Thailand. They were the volunteer from College of Teacher Education Student Union that able to participate all of the project and community-based learning (PCBL) steps because

this learning activity took time outside the class schedule and must be action to community.

Variables

The variables are as follows:

1. Treatment variable; project and community-based learning (PCBL)
2. Dependent variable;
 - 2.1 Satisfaction on the project and community-based learning (PCBL)
 - 2.2 Project management skills in art and culture

Time

The duration of the experiment was academic year 2017.

Research Instruments

There are two types of research instruments;

1. Data collecting instrument:
 - 1.1 Satisfaction evaluation form on the PCBL with five Likert scale and project

Rating levels	Criteria for interpretation
5 = extremely satisfied	4.21 – 5.00 = extremely satisfied
4 = very satisfied	3.41 - 4.20 = very satisfied
3 = satisfied	2.61 – 3.40 = satisfied
2 = slightly satisfied	1.81 - 2.60 = slightly satisfied
1 = not satisfied	1.00 - 1.80 = not satisfied

- 1.2 Project management skills in art and culture evaluation form with four Likert scale

Rating levels	Criteria for interpretation
4 = very good	3.56 - 4.00 = very good
3 = good	2.56 - 3.55 = good
2 = fair	1.56 - 2.55 = fair
1 = poor	1.00 - 1.55 = poor

2. Experimental instruments: Lesson plans based on the project and community-based learning (PCBL)

Experiments and Data Collection

1. Pre-project management phase: The researchers clarified the purpose, art and cultural issues in the community to pre-service teachers by defining what needs to be learned and defining the roles of advisors and students for project and community-based learning (PCBL); explain the creating a general outline of the project and work

planning such as how to study, product development, data analysis, report writing to pre-service teachers able to manage the project. Then, assess the project management skills in art and culture before using the PCBL.

2. Project management phase: The pre-service teachers manage the project based on the project and community-based learning developed by researcher.

3. Post-project management phase: The researcher evaluated the pre-service teachers' project management skills in art and culture after using the PCBL and evaluated the satisfaction on the PCBL. Then, the data were analysed and interpreted data by arithmetic mean (\bar{x}), standard deviation (S.D.) and paired samples t-test including the writing descriptive descriptions.

Data Analysis

The researchers have defined the data analysis as follows:

1. Construct validity analysis of satisfaction evaluation form on the PCBL and project management skills in art and culture evaluation form by calculated from the Index of Objective Congruency, IOC.
2. Analysis of data by arithmetic mean (\bar{x}), standard deviation (S.D.) from satisfaction scores and project management skills scores.
3. Comparing the pre-service teachers' project management skills in art and culture before and after using PCBL by paired samples t-test

Literature Review

This study is a part of the *Project Management Skills Development in Art and Culture of Pre-service Teachers through Project and Community-based Learning (PCBL): A Case Study of Pre-service Teachers of the College of Teacher Education Student Union, Phranakhon Rajabhat University*. Literature review was presented in 3 parts: the project and community-based learning, satisfaction, and project management skills.

Project and Community-based Learning

1. **Project-based Learning (PBL)** is a condition of learning management that ask learners join together to choose the project they want to study by surveying, observing and defining the topics that they are interested in planning of the project. Learners study the necessary knowledge and work in accordance with the plan laid out to find new findings or inventions. Then, write the report and present it to the public. After that bring all the work and experience to the discussion (Khammani, 2013: 139)
2. **Community-based Learning (CBL)** is a teaching or learning strategy that enables young people and adults to learn what they need from the

community. (Owens & Wang, 1996). It is an integrated learning approach and community service with learning in classroom to help learners develop their skills and sense of responsibility in civic roles including academic skills (Ibrahim, 2010), which deals with concepts of participation learning, work together based on the concept of social and cultural learning, and focus on the role of group members or community participation. Fischer, Rohde & Wulf, 2007). Community-based learning is one of the strategies used to enhance the authentic working skills (Beakley, Yoder & West, 2003).

- 3. Project and Community-based Learning (PCBL)** In this research, project and community-based learning (PCBL) is the learning process that integrated activities between project-based learning (PBL) and community-based learning (CBL). PCBL adapted from Ribe&Vidal's project-based learning (1993) that consisted of 7 steps. The differences of PBL and PCBL were shown as following table:

Table 2

The Differences of PBL and PCBL

PBL steps based on Ribe & Vidal	Project and Community-based Learning (PCBL)
1. Creating a Good Atmosphere	1. Creating a Good Atmosphere with Group Dynamic
2. Getting the Class Interested	2. Getting the Learner Interested
3. Selecting the Topic	3. Surveying the Community and Selecting the Topic
4. Creating a General Outline of the Project	4. Creating a General Outline of the Project
5. Doing Basic Research Around the Topic	5. Doing the Project around the Topic
6. Reporting to the Class	6. Reporting to the Community
7. Processing Feedback	7. Processing Feedback

Satisfaction

Satisfaction is a pleasant feeling that you get when you receive something you wanted, or when you have done something you wanted to do (Cambridge Dictionary, 2018: online). In this research, the satisfaction on the project and community-based learning (PCBL) refers to the positive feelings of pre-service teachers after using project and community-based learning activities that consisted of four elements: 1) Project model and activities ; 2) Processes of project management; 3) Benefits of the project; 4) Knowing art and culture.

Project Management Skills

The Association for Project Management (2018: online) in United Kingdom defined that project management is the application of processes, methods, knowledge, skills and experience to achieve the project objectives. In this research, project management skills in art and culture means ability to do sub activities of the project through project and community-based learning (PCBL) that consists of 3 aspects: 1) Project planning abilities 2) Project processes abilities; 3) Product and presenting abilities.

Results

The results of using the project and community-based learning (PCBL) were presented in quantitative. The results were shown as follows:

Table 3

Results of Pre-service Teachers' Satisfaction on the PCBL by Overall Evaluation (n=30)

Satisfaction	\bar{X}	S.D.	Levels of
1. Project Model and Activities	4.22	0.66	Extremely satisfied
2. Processes of Project Management	4.44	0.64	Extremely satisfied
3. Benefits of the Project	4.57	0.53	Extremely satisfied
4. Knowing Art and Culture	4.22	0.67	Extremely satisfied
Overall Evaluation	4.36	0.63	Extremely satisfied

After the implementation it was found that the pre-service teachers' satisfaction on the PCBL was rated at an extremely satisfied level of 4.36 (overall). The study reported that the pre-service teachers' satisfaction on the PCBL in the aspect of benefit of the project was rated at the level of 4.57, in the aspect of processes of project management at the level of 4.44, and in the aspect of project model and activities, and knowing arts and culture at the level of 4.22, respectively.

Table 4

A Comparison of Pre-service Teachers' Project Management Skills in Art and Culture before and after Using PCBL

Experimental Group	n	\bar{X}	S.D.	t-test	Sig
Pretest	30	2.04	0.64	24.219	.000
Posttest	30	3.74	0.41		

* $p < .05$

After the implementation it was found that the pre-service teachers' project management skills in art and culture after using PCBL was higher than before the experiment with statistical significance at .05 level.

Table 5

A Comparison of Pre-service Teachers' Project Management Skills in Art and Culture before and after Using PCBL by Overall Evaluation (n=30)

Project Management Skills	Pretest		Posttest	
	\bar{X}	S.D.	\bar{X}	S.D.
1. Project Planning Abilities	2.03	0.67	3.79	0.39
2. Project Processes Abilities	2.03	0.58	3.84	0.34
3. Product and Presenting Abilities	2.06	0.68	3.59	0.49
Overall Evaluation	2.04	0.64	3.74	0.41

After the implementation it was found that the pre-service teachers' project management skills in art and culture was higher than before experiment. It was developed from skills level of 2.04 to 3.74.

Discussion

The results of this research were as follows: 1) The pre-service teachers' satisfaction on the PCBL was rated at an extremely satisfied level of 4.36; and 2) The pre-service teachers' project management skills in art and culture after using PCBL was higher than before the experiment with statistical significance at .05 level. The results of the research shown that the pre-service teachers satisfied the project and community-based learning (PCBL) at an extremely satisfied level. When considered by the observation of the pre-service teachers' process activities based on PCBL, the process was clear and interesting. There was a systematic plan and details for the information collection. Pre-service teachers can also create the creative products in art and culture. For example; pre-service teachers took the Ma-taad (elephant apple) which is a native fruit of Mon people in Koh Kret Island to adapt be a dessert. From the original was made only meat food, they applied be delicious dessert. This product added value for local and community. In terms of the benefits of project and community-based learning, pre-service teachers were able to access the community well by using a good relationship. They used the informal words to interview with Mon people. They prepared the question issues and collected the details friendly; it made Mon people had a good feeling. These situations matched the findings of Phatlakfa. et al (2013) that development of art and culture learning resources using community participation affected to the community had a positive change in behavior, and shared of learning each other. In addition, pre-service teachers had more knowledge about art, way of life, and local wisdom from villagers and community resources that observed from the knowledge link, data collection and creating the art and culture products. They also had higher than understanding of the community history before the experiment. These were consistent with research by Jeena and Yanasarn. (2016) who said that project-based

learning can linked knowledge gained in real life, students were also very satisfied level.

In terms of the pre-service teachers' project management skills found that they had more ability to plan projects. From observations of the instructors, pre-service teachers answered the questions about the process of work clearly. These were consistent with research by Chantra, Yuangsoi, and Teeraputon (2014) who said that in the work process of project approach work, promote more quality task. In this research, pre-service teachers had teamwork skills; they defined problem, set observation, inquired the answer, gave commenting, analysed and synthesised information acquired, and created artistic and cultural tasks that were the results of local wisdom and added value for the community. When considered the product and presenting abilities found that pre-service teachers showed the process of local plants to be processed into dessert. They answered the questions from people while presentation clearly and reasonably in accordance with the Insa-ard. (2013), who discussed the project-based learning helped students to produce the concrete work out. Students had a clear working group and systematic exchange of learning and planning.

The findings of this research found that project and community-based learning (PCBL) promoted pre-service teachers' satisfaction and project management skills in art and culture. This findings were consistent with research by Homhual (2015); Tubseerak, Pharanat and Khaechonpak (2016); Klongdee. (2016) mentioned that project-based learning promoted learning outcomes, learners' learning outcomes was higher than before the experiment, learners constructed the new knowledge to developed old product and added value. They had more problem-solving skills and were rated at very satisfaction level.

Recommendations

For this research, the researcher has various recommendations both recommendations for research implementations and recommendations for further research. The recommendations were presented as follows:

Recommendations for Research Implementations

1. The instructor should provide vehicle before surveying the community by considering the appropriateness of researchers and participant number, including the material of the project management.
2. The instructor should coordinate with local authorities or community leaders to explore the local needs or to facilitate the surveying. Besides, the instructor must contact the information contributor to earn the deep information that is the highest benefits to the community.

Recommendations for Further Research

1. Researchers should study the value of art and culture through project and community-based learning.
2. Researchers should study the Knowledge Management (KM) of language and local wisdom through project and community-based learning.
3. Researchers should develop the 21st century learning skills using integrated art and cultural project.
4. Researchers should focus on Professional Learning Community (PLC) to make income and develop the learning centre of language, art, culture and local wisdom in community.

Research Benefits

1. Pre-service teachers developed creativity products in art and culture to community. In this research, it promoted collaboration between instructor and students in the university with people in the community.
2. Pre-service teachers from the College of Teacher Education Student Union, Phranakhon Rajabhat University, Thailand developed knowledge and project management skills through project and community-based learning.
3. Instructors in higher education had guidelines for the development of integrated activities model using project and community-based learning. It is useful in everyday applications.
4. The Faculty of Education or the College of Teacher Education had developed guidelines for pre-service teachers to acquired project management skills in the art and culture as a guideline for student activities in the Student Affairs Department.

Conclusion

In this research is a part of the research with the title Project Management Skills Development in Art and Culture of Pre-service Teachers through Project and Community-based Learning: A Case Study of Pre-service Teachers of the College of Teacher Education Student Union, Phranakhon Rajabhat University. After a project and community-based learning (PCBL) was developed, the researcher evaluated the effectiveness of the project and community-based learning (PCBL) by pre-experimental research. Experimental design was a single group pretest - posttest design. Effects of the PCBL on pre-service teachers' satisfaction was rated at an extremely satisfied level of 4.36; and pre-service teachers' project management skills in art and culture after using PCBL was higher than before the experiment with

statistical significance at .05 level. This approach can apply in learning process in university, school and community.

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Appendix

Table 6

Results of Pre-service Teachers' Satisfaction on the PCBL by Specific Evaluation (n=30)

Satisfaction	\bar{X}	S.D.	Levels of Satisfaction
1. Project Model and Activities	4.22	0.66	Extremely satisfied
1.1 The project activity is interesting.	4.33	0.58	Extremely satisfied
1.2 The location of the project activity is appropriate.	4.40	0.65	Extremely satisfied

Satisfaction	\bar{X}	S.D.	Levels of Satisfaction
1.3 The project sequence is appropriate.	4.20	0.66	Extremely satisfied
1.4 The duration of project assignment and presentation is appropriate.	4.10	0.70	Extremely satisfied
1.5 The composition of the project report is clear.	4.07	0.74	Extremely satisfied
2. Processes of Project Management	4.44	0.64	Extremely satisfied
2.1 The pre-service teachers had planning project systematically.	4.37	0.62	Extremely satisfied
2.2 The pre-service teachers worked together and had responsible for their assignments.	4.60	0.62	Extremely satisfied
2.3 The pre-service teachers explored the interest and community needs on the project.	4.40	0.64	Extremely satisfied
2.4 The pre-service teachers analysed and synthesized the body of knowledge to present the	4.37	0.65	Extremely satisfied
2.5 The pre-service teachers developed creative and artistic skills.	4.47	0.68	Extremely satisfied
3. Benefit of the Project	4.57	0.53	Extremely satisfied
3.1 The pre-service teachers had Satisfaction on knowledge from project activities	4.57	0.54	Extremely satisfied
3.2 The pre-service teachers got the pride in their work.	4.43	0.60	Extremely satisfied
3.3 The pre-service teachers realise in art and culture of the community.	4.60	0.55	Extremely satisfied
3.4 The pre-service teachers had good relationships with people in the community.	4.70	0.49	Extremely satisfied
3.5 The pre-service teachers learn the project process.	4.57	0.50	Extremely satisfied
4. Knowing Arts and Culture	4.22	0.67	Extremely satisfied
4.1 The pre-service teachers got knowledge of the arts in the community.	4.53	0.65	Extremely satisfied
4.2 The pre-service teachers got Knowledge of the way of life and wisdom.	4.50	0.68	Extremely satisfied
4.3 The pre-service teachers got Knowledge from the local philosopher.	4.57	0.68	Extremely satisfied
4.4 The pre-service teachers got Knowledge from learning resources in the community.	4.47	0.68	Extremely satisfied
4.5 The pre-service teachers abled to apply the knowledge from project activities to the lifestyle.	4.47	0.68	Extremely satisfied
Overall Evaluation			Extremely satisfied

Table 7

A Comparison of Pre-service Teachers' Project Management Skills in Art and Culture before and after Using PCBL by Specific Evaluation (n=30)

Project Management Skills	Pretest		Posttest	
	\bar{X}	S.D.	\bar{X}	S.D.
1. Project Planning Abilities	2.03	0.67	3.79	0.39
1.1 Definition of the project objective	2.13	0.78	3.83	0.38
1.2 Brainstorming and Participation of	2.03	0.61	3.87	0.35
1.3 Analysis of community problems that related to project management	1.97	0.67	3.67	0.48
1.4 Selecting the project topic	2.13	0.57	3.93	0.25
1.5 Creating a general outline of the project	1.90	0.71	3.67	0.48
2. Project Processes Abilities	2.03	0.58	3.84	0.34
2.1 Teamwork	2.33	0.71	3.93	0.25
2.2 Responsibility for assigned tasks	2.17	0.59	3.97	0.18
2.3 Surveying the Interest and needs of community	2.07	0.69	3.73	0.45
2.4 Analysis and synthesis of knowledge	1.77	0.43	3.73	0.45
2.5 Creativity for art and culture product	1.83	0.46	3.83	0.38
3. Product and Presenting Abilities	2.06	0.68	3.59	0.49
3.1 Data integrity and performance	2.20	0.61	3.53	0.51
3.2 Interesting presentation methods.	2.07	0.74	3.57	0.50
3.3 Form and characteristics of both paper and media presentation	1.93	0.69	3.60	0.50
3.4 Creativity in presentation.	2.10	0.66	3.77	0.43
3.5 Dissemination of information to society	2.00	0.69	3.50	0.51
Overall Evaluation	2.04	0.64	3.74	0.41