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The Learning Process of Capita Selecta Based on Journals Review

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Abstract. The learning process on capita selecta subject of Chemistry Education Department, Islamic University of Indonesia, was carried out based on reviewing of journals in chemistry and chemistry education scopes. The learning process procedure included planning, implementation and reflection. The purposes of learning were 1) students got an insight into the trend research in chemistry and chemistry education scopes, 2) students knew how to access and search journals, 3) increased students learning motivation on reading scientific journals, 4) students had be trained for reviewing scientific journals, and inspiring students to think about research ideas, performed research and publishing in scientific journals. The result showed that the students' responses in this learning were good.

INTRODUCTION

An investigation is the only way to answer the problem of human life. The existence of a study expected as an answer to the problems that arise in everyday life. The research problem is the identification of a gap "what it should be" and "facts". By looking at these disparities, the researchers have reason to find out the answer. Thus, it can be said that the amount of research done with regards to sensitivity researches in looking at the problems occurred. The sensitivity of a researcher not something practical that automatically obtained when a person becomes a researcher. Their sensitivities appear along with the culture of reading that done. By reading an article / journal, we can follow the logic of the author and how the authors solve the problem. So, not only sensitivity in finding the most important issue, but the flow and logical thinking to solve problems that arise are also things that need attention [1].

The low sensitivities as a researcher were identified as a result of the learning process that is less supportive. This is evidenced by the fact that most college students, new to the stage of "what" in view of a phenomenon. They will be very confident when invited to discuss or answer questions with interrogative sentence "what" and "mention," but if the question had led to the "why" and "how" they will be difficult to express the idea you have in mind in the form of a sentence. Whereas sensitivities of looking at a problem is born out of the question "why" and "how."

Learning will take more effectively if the emphasis on the active role of students in building understanding and interpretation of information or events they experienced, in direct contact with the object being studied, which exist in the environment. McCown, Driscoll, and Roop said that when students learned and constructed the knowledge, they also tried to understand their environment [2]. Constructivist approach chosen because the application of learning with this approach, students are required to construct the knowledge they have learned with the help of lecturers as a facilitator. In addition, the application of this approach, indirectly forming of logic thinking of students in looking at a phenomenon. The formation of logical thinking will stimulate the sensitivity of the student as a researcher. Students are required to begin to think critically and do not necessarily accept the existing theories.

Capita selecta is a subject which gives insight to students about the development of chemistry sciences and chemistry education. Learning materials that exist on the subject capita selecta constantly changing in accordance with the development of chemistry sciences and chemistry education that happens. Insights on the development of the chemistry sciences and chemical education can be known through the study of research journals. Therefore, there should be a learning process based on reviewed journals. Accordingly, the purpose of learning-based review

journal, among others, a) add and update the knowledge of students about the research in the fields of chemistry and chemical education, b) students can access and search the journal, c) cultivate and motivate students in reading scientific journals, d) students can be trained reviewing scientific journals, e) understand the way of thinking authors of looking at an issue on the journal that reviewed, f) analyzing the logic of thinking writer in completing or answer the problem formulation that embodied in research methodology, g) learn how the author in expressing his ideas, as well as learn how to author interpret of research results to write in the sentences, h) motivate students in generating research ideas, conduct research, and publish it in the form of a scientific journal.

The scientific work is a paper which contains ideas, problem solving, observation, and research results are compiled systematically and supported by facts (data), theory, and empirical evidence is accompanied by the literature review so that it can be accounted for truth objectively to importance of academic [3]. A scientific work is usually published in scientific journals. Critical study is an activity of reading, studying, analyzing a scientific journal to get an explanation, and the data that supports the objectives / main idea, and leave comments on the overall of the content of journal that is read from the standpoint of the interest of people who assess [4]. The principle of critical studies include [4,5]

1. Scientific study/objective, in the form of, a) present data, facts and opinions in an objective and logical; b) the statement using the correct sentences according to the rules and the applicable language rules, and c) do not contain opinions without the support of the facts and are not accompanied by emotional attitudes
2. Scientific attitude/predictive, include a) curiosity, critical, open, and objective; b) appreciate the work of others, c) dare to uphold the truth, and d) have thoughts or perspectives comprehensive and far-sighted
3. Systematic, meaning that demand study that carried out sequentially and integrated so that between one aspect and the other to form a neat overall.

There are several issues related to the structure of the critical studies include:

4. Introduction that explains the title, the author, an overview of the topic of the article, the purpose of writing the article, a summary of the conclusions of the article, an opinion accompanied by reason, and concludes with a general statement about the assessment of the article.
5. Summary containing the subject matter of this article with examples. In addition, critical reviews may also include an explanation of the author's purpose and the way of an article prepared / organized.
6. Criticism, contains an explanation which should be balanced between the discussion with an assessment of the advantages, disadvantages, and other important things that exist on an article. The explanation given should also have considered the specific criteria and using literature or other reference to support the assessment.
7. Conclusion containing re-exposure generally overall assessment of the article and stated generally proposals that recommended. If necessary, some explanation about the assessment of the articles can be written so it seems that the criticism given to a fair article and have arguments
8. Reference, if in in conducting a critical assessment of articles using other literature sources, it must be stated as a bibliography on this section clearly [6].

Critical reviews can be done by the students in order to practice to examine and analyze the scientific journals to find the idea of the author, raises logical thinking, learn how to put the idea in writing and assessing the benefits and drawbacks. Critical reviews is required in order to provide supplies to students in order to prepare research plans. The event begins with determining an appropriate journal articles to be analyzed, read, study the article to get the development ideas, explanations, and give comment on the contents as a whole from the viewpoint of the student as a reviewer [7]

METHOD

This research is a descriptive quantitative research. Research steps include planning, implementation, and reflection. Stages of each steps involved in planning, includes:

1. Reviewed procedure of compiling learning device with emphasis on the based learning of journals review
2. Compiled of learning device that consists of a syllabus, unit of lecturing events (SAP), course outline (CO), the source and instructional media

The implementation of learning includes two stages. Each stage consists of seven meetings. Forms of learning activities, includes several stages, among other things:

1. Divided the group of students
2. Divided the research themes

3. Explained each research themes
4. Guided students in search and review journals
5. Observed the learning activities of review journals
6. Confirmed the activities of review journals

Reflection activities conducted to reflect on the learning outcomes in order to improve the process and results. This research was conducted at the FMIPA UII with research subjects are students of Department of Chemistry Education UII second half.

Assessment of the review journals includes students responses, presentation, and result review journals. Assessment of result review journals includes of three aspects, suitability journal, revising skills, and grammar/writing system. Then, assessment of presentation got from the observation includes two aspects, presentation and answer the questions. Furthermore, assessment of students responses got from the questionnaire, includes three aspects, understanding and skills, motivation, social and cooperation. Data analysis from the result of questionnaire was shown in Table 1.

TABLE 1. Data Analysis from the Result of Students Responses Questionnaire

Range of Score	Category
$X > M + 1,5SD$	Very Good
$M < X \leq M + 1,5SD$	Good
$M - 1,5SD < X \leq M$	Poorly
$X \leq M - 1,5SD$	Not Good

DISCUSSION

Implementation of learning based on reviewed journals is done in two stages, each stage is carried out in seven meetings. The third through seventh meeting conducted by reviewing chemistry journals, while the ninth meeting until the fourteenth meeting conducted a review of the education journal. Themes of journals that will be reviewed have also been defined by the lecturer prior learning, including themes for chemistry journal among other things:

1. Energy
2. Chemical industry
3. Agriculture and food
4. Medical and pharmaceutical

The theme of the journal that studied in the field of chemistry education include:

1. The learning approach
2. Learning strategies
3. Learning methods
4. Learning model
5. Learning resources
6. Instructional Media

Determination of the themes in the study of the journal is intended to facilitate students in the process of finding journals and focus on journals studies conducted in accordance with the development of research in chemistry and chemistry education.

Grouping students in reviewing journal is intended to train students to be able to work in teams and to train students to be able to learn from each other in the group. Grouping students were randomized to each group consisted of four students. Each group was given a chemistry journal study theme and one theme study chemistry education journals. Thus, in one semester, each group reviewing two journals.

Reviewed journal include:

1. Reason researchers appoint the theme / title of the research
2. Conducted research purposes, the method performed in research
3. The results of research conducted
4. Discussion of results research
5. Conclusion
6. Weaknesses and strengths of the research that has been done

7. The development of research to do.
 The results of assessment review journals was shown in Fig 1.

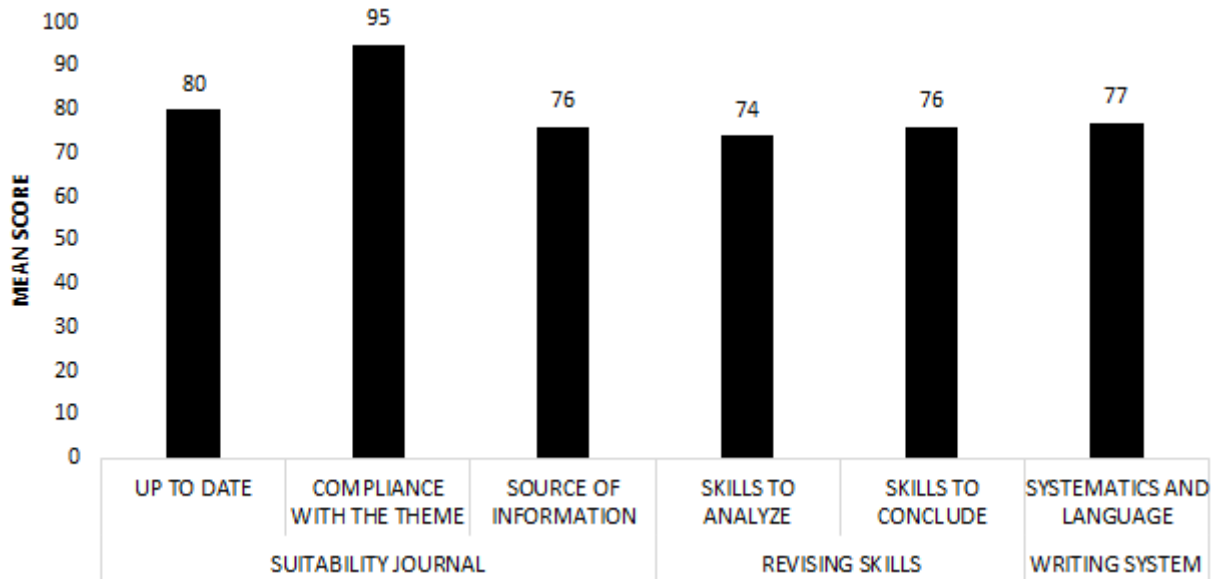


FIGURE 1. The Results of Assessment Review Journals

Results of reviewed journals are then compiled in a report reviewed journal that will be presented in the classroom. Students in the group is also preparing instructional media in the form of a power point that is used during the presentation. The results of assessment presentation was presented in Fig 2.

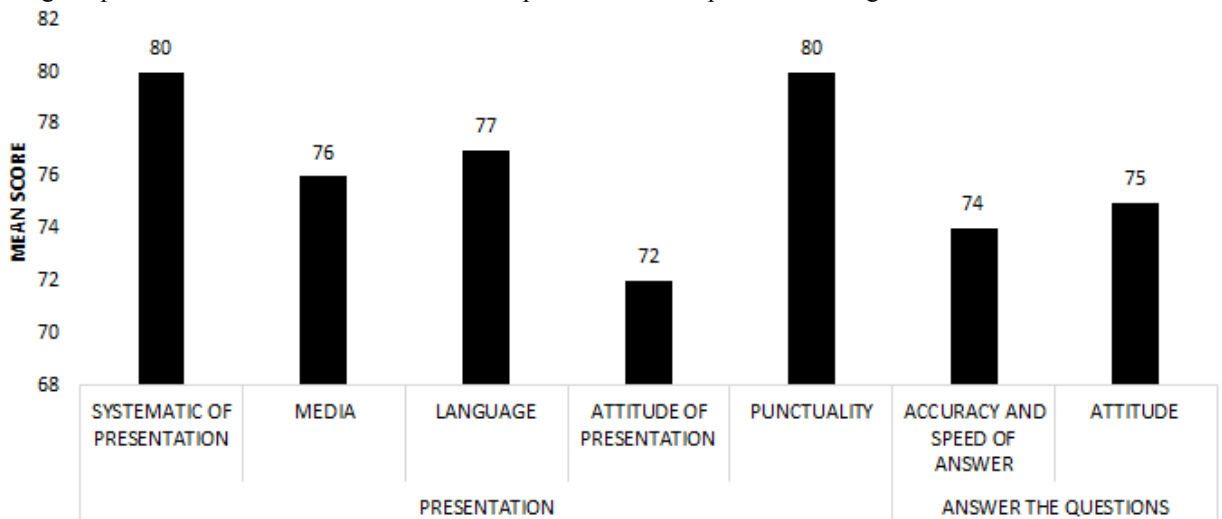


FIGURE 2. The Results of Assessment Presentation

The presentation is done by groups of students in the classroom, with each student in the group given the task of presenting the results of reviewed journal that has been done before. The other students in the class can respond to the presentations reviewed journal committed by a group of students with the ask questions, answer, or provide feedback/suggestions, refute and provide additional information. Learning atmosphere in the classroom is a discussion. A pleasant atmosphere because all students entitled to submit his opinion so the class is "alive". Learning is no longer centered on lecturer, but centered on the student. Learning is no longer centered on the lecturers, but centered on the student. Lecturer in this case only act as a facilitator and motivator in the learning process. This is consistent with the learning paradigm that currently should be done is learning paradigm that is no longer centered

on lecturer, but students [8]. Based on the context of this paradigm, students learn to find and construct knowledge, rather than simply receiving knowledge from lecturer.

Knowledge should also be regarded as a result of construction or transformed by the student, not something that already exists and is only transferred from the lecturer to the students. Students are actively incorporating all cognitive abilities, psychomotor, and affective that owned [9].

Discussion of the results of reviewed journals conducted in the classroom can also train the students can:

1. Communicate with each other in the learning
2. Express their opinions and ideas that has
3. Respect the opinions of others
4. Share the learning experience with each other
5. Share your motivation and enthusiasm in learning

Lecturer as a facilitator and motivator in learning can make observations towards the course of learning based on reviewed journals through activities performed by the students during the class discussion. Activities that can be observed include the following:

1. Student activities in listening of presentations
2. Present their views, refutation, suggestions, or feedback
3. Asking
4. Answer the question
5. Noted the outcome of the discussion

At the end of the learning based on reviewed journals, conducted assessment of students responses obtained through the questionnaire. The results of assessment students' responses was shown in Fig 3.

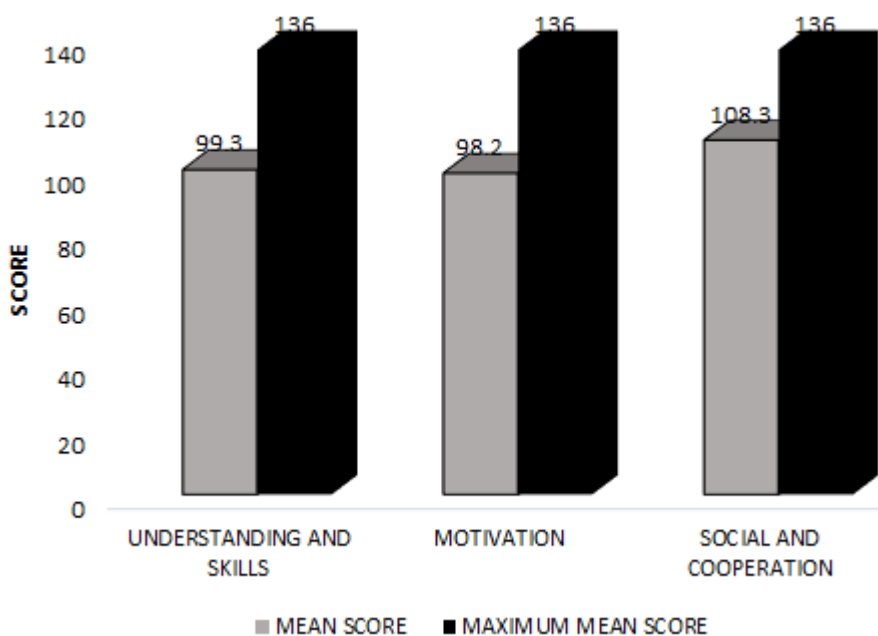


FIGURE 3. The Results of Students Responses

Results of the assessment response of students based on learning reviewed journal of the aspects of understanding and skills, motivation, social and cooperation, all included in good categories. Assessment of students responses to the learning based on journals review used to reflect the learning outcomes in order to improve processes and results.

Through the discussion of the results journals review in the classroom:

1. Students can add and update the knowledge of research in chemistry and chemistry education
2. Students can understand the way of thinking authors of looking at an issue of the journal that is reviewed

3. Students are able to analyze the logic of thinking writer in completing or answer the problem formulation embodied in research methodology
4. Students can learn how the author in expressing his ideas, as well as learn how to author in the interpretation of research results to write in sentences.

Thus, it is possible the student got the idea for research and may be motivated to do the research and write the results of these studies in the form of a journal.

CONCLUSION

Learning based on reviewed journals on subjects capita selecta is learning based on a review of the journals in chemistry and chemistry education. The procedure of learning includes the planning, implementation and reflection. The learning based on reviewed journal make students get an insight into the development of research in chemistry and chemistry education, students can access and search the journal, develop and motivate students in reading scientific journals, students can be trained reviewing scientific journals, and motivate students in generating research ideas, conduct research and publish in scientific journals. The result showed that the student's responses in this learning were good.

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