

Original Article

Developing a Procedure to Assist Student Teachers to Recognize Gains in Their Practical Knowledge During Teaching Practice

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The Faculty Student Teacher Professional Development (FSTPD) course, which the author of this article teaches, was looking for an “on-going learning professional teacher model” and decided to introduce a “reflective practitioner model” in 2014. Therefore, the faculty developed the FSTPD program for student teachers. To examine whether the program enhanced their competency, researchers analyzed their journal notes and it was concluded that they had gained the necessary practical knowledge. However, the analysis was carried out by only two researchers in the faculty and did not investigate whether the student teachers themselves were convinced that they had become more reflective. Opportunities to find and recognize reflective episodes were needed for the student teachers, so there was a need to develop a procedure which, it was assumed, would assist the student teachers to recognize that they had gained practical knowledge through reflection. Dimova & Kamarska (2015) reorganized Dewey’s phases of inquiry into three situations and six steps. These phases of inquiry were taught to, and used by the student teachers to assist them in gaining the necessary practical knowledge. A procedure was developed to help them to arrange their episodes of reflection during teaching practice according to the phases of inquiry. This study shows the development of a procedure using the phases of inquiry and investigates whether it assisted student teachers to recognize their gains in practical knowledge. After a four-week period of teaching practice in elementary schools, a procedure was trialed. Twenty undergraduate student teachers were asked to consider their reflective episodes via a newly developed worksheet-based procedure. Finally, 21 worksheets were collected (one student teacher wrote two worksheets). There were various kinds of practical knowledge which the student teachers realized they had gained. Faculty staff with relevant teaching experience indicated that almost all were appropriate.

Keywords: Student teaching, Practical knowledge, Journal, Professional development

Introduction

The Central Education Council of the Ministry of Education in Japan reported that “Comprehensive measures to improve teachers’ competency through

whole professional teaching are required” (MEXT, 2012). The report proposed the establishment of an “on-going learning professional teacher model” as an “advanced professional” and arranged teachers’ competencies into three categories consisting of:

1. responsibility for teaching, ability to explore and continuity to learn autonomously through whole teaching profession,
2. advanced knowledge and skill as professionals,

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and

3. comprehensive humanity.

It also stated that “these three categories of competency do not exist independently but that, being interrelated, they are formed through reflection” (MEXT, 2012).

The Faculty Student Teacher Professional Development (FSTPD) course, which this author teaches, was looking for an “on-going learning professional teacher model” and decided to introduce “the reflective practitioner model” (Sasaki, 2015). Therefore, the faculty developed the Faculty Student Teacher Professional Development program which consisted of 15 lessons for 3rd and 4th grade student teachers. The student teachers examined whether the program could enhance their competencies from the reflective practitioners’ perspective. The journal notes of student teachers were analyzed and results revealed that student teachers reflected on their practice more deeply and more critically based on their experience (Sasaki, 2016).

The analysis of the journal notes was carried out by only two researchers of the faculty. It was concluded that the student teachers had become more reflective. However, it was unclear whether they themselves were convinced of this. The student teachers did not know and could not recognize that there were reflective notes in their journals since only a few researchers analyzed them and found the episodes of reflection. Student teacher educators therefore needed to develop a procedure which offered opportunities for student teachers to find and recognize the reflective episodes in their journals, in order to demonstrate to student teachers both their enhanced reflectivity and gains in practical knowledge.

Purpose

How can a procedure to assist student teachers to recognize their gains in practical knowledge be developed? In the previous study (Sasaki 2016), all the journal notes were read carefully and reflection episodes were highlighted. Then, the episodes were categorized by three criteria:

1. the time and place in which the reflection episodes occurred,

2. the method of reflection, and

3. the level of reflection.

The procedure needed delicate attention and took a lot of time to administer. It was difficult for the student teachers to notice the reflection episodes and even more difficult for them to categorize them.

As part of the course, the student teachers were taught the process of Dewey’s phases of inquiry consisting of five steps:

1. a perceived difficulty,
2. its location and definition,
3. suggestion of a possible solution,
4. development by reasoning of the usefulness of the suggested solution, and
5. further observation and experimentation leading to the solution’s acceptance or rejection.

Dimova & Kamarska (2015) restructured these phases of inquiry into three situations and six steps:

1. Indeterminate situation: Formulating questions
2. Problematic situation:
 - a. Formulating problems
 - b. Observation of facts, discussing solution ideas
 - c. Choice of hypothesis
 - d. Observation and experimenting
3. Determinate situation: Solution.

It was indicated to the student teachers that teachers can gain the practical knowledge necessary through these steps. It was assumed that a procedure might be very useful for the student teachers to reflect on their teaching experiences and realize that they had gained practical knowledge by arranging their episodes of reflection in the teaching practice according to these phases of inquiry. Therefore, the purpose of this study was to develop such a procedure and to investigate whether it assisted the student teachers to recognize their gains in practical knowledge.

Development of the procedure

The procedure consisted of the following three steps. Student teachers:

1. find episodes of reflection in their journals,
2. arrange their episodes of reflection according to the phases of inquiry, and
3. recognize their gains in practical knowledge.

Student teachers find episodes of reflection from their journals

The student teachers have to describe episodes of reflection found in their teaching practice journals. At the beginning of the FSTPD program, the student teachers are taught how to describe their reflection episodes. One of the sections used in the journal was titled “Record of reflection from the viewpoints of subject teaching, student guidance and management” as shown in Figure 1. Student teachers were asked to record both their observations during their teaching practice lessons and their reflection episodes. They were also told that they would have to use their journal to reflect on their teaching practice experiences after returning to the university. After the teaching practice period, they returned to the program’s lessons, read their journals carefully again, and found their episodes of reflection.

Student teachers arrange their episodes of reflection according to the phases of inquiry

In order to help the student teachers to arrange the episodes they find, the worksheet shown in Figure 2 was prepared. Firstly, they complete the “Formulating questions” section at the top. Next, they fill in the

“Formulating problems” section. They then complete each section according to the phase of inquiry. Then they write their “Solution” in the penultimate section.

Student teachers recognize their gains in practical knowledge

Here, student teachers consider what they gained through the phases of inquiry and write the practical knowledge gained at the bottom. It is important to ensure that the description contains the practical knowledge that they gained.

Example of the procedure

One female student teacher’s reflection episode is shown below as an example.

…In the second period, I observed the Japanese language lesson about polite expressions. The content of this lesson is only repeating the teacher’s explanation and writing on the blackboard. Therefore the students did not look like they were enjoying it. Since the teacher told me that a teacher sometimes has to teach such lessons, I now understand that it is impossible to make every lesson enjoyable. In the second half of the lesson, they tried doing the drills about polite expressions. ① When she asked them to present their answers, only the students who often raised their hands did so enthusiastically. While they were answering, I walked around the class and

平成 年 月 日 () 曜日

1 一日の記録

時 限	教科等	指導者	主 な 内 容
朝の会			
1			
2			
3			
4			
給食指導			
清掃指導			
5			
6			
帰りの会			

2 省察の記録 (学習指導、生徒指導、マネジメント等の観点から)

The record of reflection from the viewpoints of subject teaching, student guidance and management.

3 一日の反省と明日への課題

<指導教員の所見>

指導教員印

Figure 1 The double page layout of the teaching practice journal

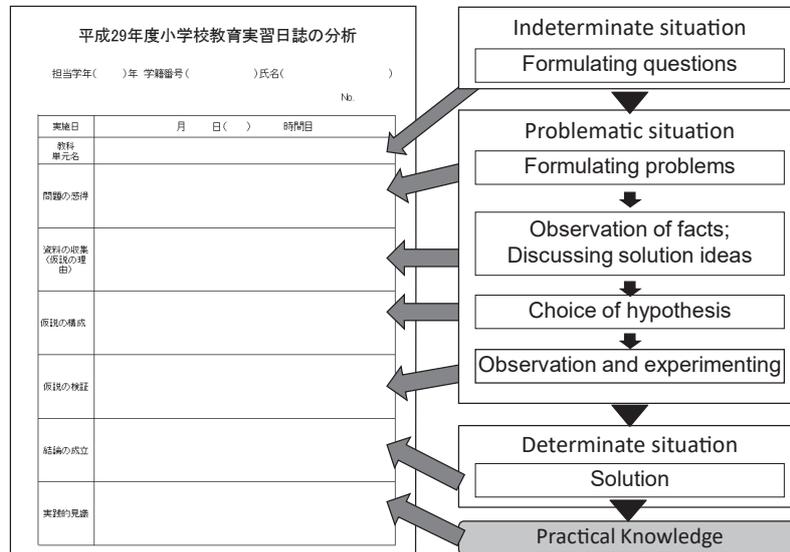


Figure 2 The worksheet related to the phases of inquiry

checked how they were doing. Then, I found that there were many students who had written the correct answers. ② I thought they looked unconfident in their answers. ③ So, I talked to them and admired their writing. Then some of them began to raise their hands. ④ I felt that students could present their ideas when a teacher encouraged them. ⑤ I thought it is important that a teacher has to support the students since presenting their ideas and responding to them results in their understanding and learning of the content and motivation to learn.

Firstly, the student teacher read the episode and clarified that it was about the Japanese language class. The elementary school students learned polite expressions in the class. She was trying to encourage them to present their ideas. Therefore, as shown in Figure 3 below, she described in the top section of her worksheet ("Formulating questions") "*Japanese language/polite expression. How to encourage the students to present their ideas?*"

Secondly, in the worksheet section about "Formulating problems", relating to the underlined part ① of the episode above, when she asked the children to present their ideas, only the students who often raised their hands did so enthusiastically. While she walked around the class and checked how they were doing, she found that there were many students who wrote

the correct answers. Therefore, she filled in the corresponding worksheet section with "*In the drill, although many students got the correct answers, they did not raise their hands to present their ideas.*"

Thirdly, from the underlined part ②, she filled in "Observation facts", writing that "*The students looked unconfident in their answers.*"

Fourthly, for the worksheet's "Choice of hypothesis" section, the hypothesis was not described overtly. However, she speculated that "*If the teacher encourages the students, they present their ideas.*"

Fifthly, in the journal there was the statement underlined in part ③ "So, I talked to them and admired their writing. Then some of them began to raise their hands." Therefore, she filled in the "Observation and experimenting" section with this information.

Sixthly, for the "Solution", there was the description underlined in part ④ stating that "I felt that students could present their ideas when a teacher encouraged them." So she described in the worksheet's "Determinate solution" section that "*The students could present their ideas when a teacher encouraged them.*"

Finally, regarding "Practical knowledge", as underlined in part ⑤, she wrote that "I thought it is important that a teacher has to support the students since presenting their ideas and responding to them results in their understanding of the learning contents and motivation to learn." This corresponds to her statement in the phases of inquiry, that "*it is impor-*

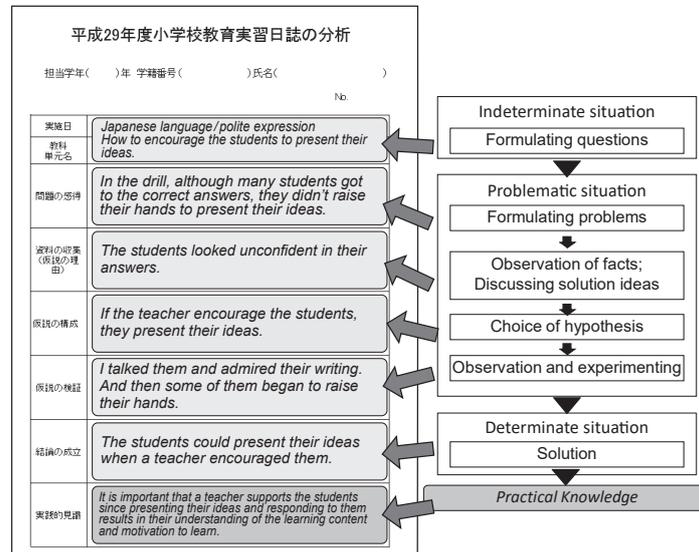


Figure 3 An example of the procedure (1)

tant that a teacher has to support the students since presenting their ideas and responding to them results in their understanding of the learning contents and motivation to learn”, evidencing that she has gained practical knowledge.

Trialing the worksheet-based procedure

Twenty undergraduate student teachers experienced four weeks of student teaching practice at elementary schools from May to June, 2017, with the trial of the worksheet-based procedure being conducted on July 13th, 2017. After the teaching practice period, the participants attended a lesson of the FSTPD program. They did not have their journals that day because they had submitted them to the school on the last day of the teaching practice. The journals were subsequently mailed to the faculty and returned to the student teachers, who were given time to review them. The worksheet-based procedure described and exemplified above was explained to the student teachers and they began to find their individual reflection episodes among their journal entries. Some student teachers claimed that it was difficult to find the reflection episodes and more difficult to arrange on the worksheets.

Results and discussion

Finally, 21 worksheets were collected. Nineteen student teachers wrote one each and one student

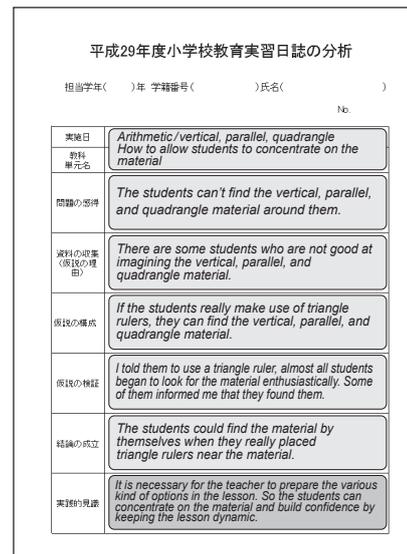


Figure 4 An example of the procedure (2)

teacher wrote two. Another example of the phases of inquiry in use by another female student teacher is provided in Figure 4. The reflective episode is about an arithmetic class where the students are learning about verticals, parallels, and quadrangles. In the end, she realized that she had gained the practical knowledge that “It is necessary for the teacher to prepare the various kinds of options in the lesson, so the students can concentrate on the material and build confidence by keeping the lesson dynamic.”

Table 1 Formulating questions and practical knowledge

	Formulating questions	Practical knowledge
1	Japanese language / Where is Tomoko-san? How to instruct students to reflect on a previous lesson?	It is important for teachers to instruct students to look at their notebooks and worksheets when they reflect on a previous lesson.
2	Arithmetic / Calculation with figures. How to help students to use an abacus?	I thought teachers should instruct students to compare their ideas with the other students around them who are using counting sticks.
3	Japanese language / Wondering about my thinking process. How to maintain students' concentration during a lesson?	It is necessary for teachers to control their speech patterns (tone, speed and volume), since it affects students' comprehension and concentration.
4	Arithmetic / Decimals How to make students present as many of their ideas as possible?	If a student realizes that their ideas are accepted by a teacher and the teacher randomly selects students to answer, they would be more motivated to present their ideas.
5	Arithmetic / A number greater than 100,000,000. How to help students to concentrate on the learning material?	The teachers should prepare rules beforehand and help the students to become aware of the importance of keeping to the rules and controlling themselves.
6	Morals lesson / There is a parking lot for bicycles. How to make students think for themselves?	When a student tries to think about something from someone else's point of view, they tend to follow a story better. So, if a teacher advises them to do so, students can learn to think more subjectively.
7	Arithmetic / Circles and spheres. How to manage differences in the students' ability levels?	A teacher has to talk with, and support students to finish note-taking in time with the other students.
8	Arithmetic / Addition with figures. How to manage a lesson plan?	A teacher can manage the lesson plan smoothly if they plan the blackboard usage and lesson time.

Table 1 above shows the “Formulating Questions” and “Practical Knowledge” that eight student teachers wrote. They include various kinds of practical knowledge. Within the faculty, two professors who had previously been elementary school teachers read the description of the procedure and evaluated whether or not the practical knowledge which the student teachers had reported gaining was appropriate practical knowledge. They commented as follows:

- Almost all of the practical knowledge the student teachers wrote is appropriate, but a few are not.
- As the period of the student teaching was only four weeks, the practical knowledge they gained is enough for novice teachers at the present time.
- It is important that they realized that they had gained practical knowledge through teaching practice.

Conclusion

The purpose of this study was to develop a procedure to assist student teachers to recognize their gains in practical knowledge and to investigate whether the procedure is effective. Based on Dewey's phases of inquiry, a procedure was developed which allowed the students teachers to describe their gains in practical knowledge. The student teachers reported realiz-

ing gains in various kinds of practical knowledge.

Almost all of the practical knowledge indicated by the novice teachers was considered to be appropriate by faculty members with relevant career experience. It seemed to be difficult for the student teachers to utilize the phases of inquiry and to arrange the process on the worksheet. In future studies, it will be important to improve the instructions to encourage student teachers to realize that they have gained appropriate practical knowledge.

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Accepted May 31, 2018.