

Original Article

A Student Teacher Training Program Renewal and an Analysis of Practical Instructional Competence of the Student Teachers

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The faculty student teacher training course, which the author of this article belongs to, was looking for a model of a “teacher as a professional”. After discussion among faculty staff members, of a “reflective practitioner” model was introduced in 2014. Consequently, the faculty staff members developed a faculty student teacher training program which consisted of 15 lessons for 3rd and 4th grade student teachers. The staff members examined whether the program could facilitate their practical instructional competence. As a result, it became clear that the training program should be modified to help the student teachers to reflect on their practice more deeply and to explore their own solutions. Therefore in 2015, the faculty staff members renewed the training program. First of all, subject teaching competence, the student guidance competence and the management competence, which formed practical instructional competence, were broken down to concrete abilities. Secondly, the lesson contents of the training program were changed. Thirdly, the format of the journal was modified. The training program and the teaching practice of twenty-nine student teachers were carried out from April to July 2015. The effectiveness of the training program renewal was evaluated from a questionnaire about practical instructional competence and analysis of their journal notes. As a result of the questionnaire, all of the average scores concerning subject teaching competence and student guidance competence increased significantly. As a result of analyzing their journal notes, it was revealed that student teachers became able to reflect on their practice more deeply. Finally, it was suggested that the renewal of the training program could help the student teachers to reflect more effectively and was effective for improving practical instructional competence.

Key Words: Teaching Practice, Practical Instructional Competence, Student Teacher, Reflective Practitioner

Introduction

In 2009, the Central Council of Education in the Ministry of Education in Japan released “Future teacher training and the license system as

they ought to be”. The establishment of “on going learning professional teacher” model was required in Japan [1]. The faculty student teacher training course, which the author of this article belongs to, was looking for a model of “a teacher as a professional”. The model was discussed based on the previous studies below. Schön (1983) originally proposed the concept of a “reflective practitioner” as a brand new professional model. He insisted that a technical expert tended to apply rational

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rules to everyday situations, whereas a reflective practitioner tended to use situational learning and to adapt to various situations through reflective thinking [2]. Sato (1996) pointed out the future need for teacher education to model based on the reflective practitioner in order to pursue individualistic and creative education instead of the technical expert model which teacher education had previously relied upon. He proclaimed that teachers' professional competence meant practical wisdom. In the student teacher training university, the professional competence of the student teachers should be raised as well as that of teachers [3]. Consequently, the "reflective practitioner" model was introduced to the faculty student teacher training course in 2014 [4]. Therefore, the faculty staff members developed a student teacher training program which consisted of 15 lessons for 3rd and 4th grade student teachers. They examined whether the training program could facilitate their competence from the reflective practitioners' perspectives. Their journal notes of 28 student teachers from May to June 2014 were analyzed. The notes were assumed to express the reflective thinking of the student teachers during teaching practice. The notes were sorted based on a preliminarily set classification category criteria. They were time and place, method of reflection, and level of reflection. As a result, it was revealed that there were a lot of abstract and general reflections in the journals and many notes had not reached the level of "critical reflection". As a result, it became clear that the training program should be modified to help the student teachers to reflect on their practice more deeply and to explore their own solutions. Therefore, in this study the training program was renewed and evaluated to determine whether the training program renewal was effective.

Purpose

The training program should be modified based on the reflection of past conduct. The mapping out of the renewal was as follows. First of all, the concrete abilities should be established. Until last training program, it was only shown that practical instructional competence was formed with subject teaching competence, student guidance competence and management competence. In this study, concrete

abilities of each practical instructional competence were clarified. Secondly, the lesson contents of the training program should be changed. Once the concrete abilities were shown, the objectives of each lesson became obvious. The lessons were changed to achieve the objectives to improve the concrete abilities. Thirdly, the journal format was modified. In the last training program, a lot of notes had not reached to the level of "critical reflection". The journal format was devised to help the student teachers to reflect on their practice more deeply. Fourthly, the evaluation method was enriched to assess the competence growth. Until last training program, analysis of the journal notes was only used to evaluate the effectiveness of the program. In this study, a questionnaire was introduced as a new method in addition to analyzing the journals. Thus far, the training program has been changed and was pursued from April to July 2015 in this study.

Therefore the purpose of this study was to change the faculty student teacher training program and to examine whether the training program renewal could facilitate the competence of student teachers.

Program Renewal

Practical Instructional Competence

In the faculty student teacher training course, the objectives of the teaching practice was to improve practical instructional competence, which consisted of subject teaching competence, student guidance competence and management competence [5]. The concrete abilities were established as shown in table 1. Subject teaching competence included the broad knowledge and skills about subjects, making a teaching plan and teaching materials, and responding to students flexibly. Student guidance competence included the knowledge about the developmental background and communication skills with students. Management competence included the ability of reflection and consciousness of administration.

Lessons

In the last study, the training program consisted of the subject "A Study for Teaching Practice" and teaching practice of 4 weeks in the elementary schools. The training program consisted of 15 lessons and between the lessons there was the teaching practice. In this study, the lessons have been changed

Table 1 Practical Instructional Competence

Competence	Concrete Abilities
1 Subject Teaching Competence	<ul style="list-style-type: none"> • broad knowledge and skills about the subject matter • preparation to teach the subject teaching materials • broad knowledge and skills of a teaching plan depending on the actual situation based on reflection • flexibility to respond to students making full use of instruction methods
2 Student Guidance Competence	<ul style="list-style-type: none"> • broad knowledge about the developmental characteristics of the students based on development theory • skills to promote communication between the teacher and students, and between students • broad knowledge about the discipline based on student guidance theory
3 Management Competence	<ul style="list-style-type: none"> • preparation to speak about social events in the homeroom • reflection on one's lesson and finding something to improve • control of one's emotion and behavior • consciousness of “Plan - Do - Check – Action” • smooth administration of one's homeroom

Table 2 Training Program

No.	CONTENTS
1	<ul style="list-style-type: none"> • Objectives of teaching practice • Three kind of competence
2	<ul style="list-style-type: none"> • Reflective practitioner • Journal notes
3-5	<ul style="list-style-type: none"> • Teaching skill and knowledge • Writing on the blackboard
6-8	<ul style="list-style-type: none"> • Teaching plan
9-11	<ul style="list-style-type: none"> • Mock lessons
	<ul style="list-style-type: none"> • Teaching practice for four weeks
12	<ul style="list-style-type: none"> • Thank-you letter
13-14	<ul style="list-style-type: none"> • Reflection of teaching practice
15	<ul style="list-style-type: none"> • Summary

as shown in table 2. At a glance, the training program looks ordinary and inevitable. However the contents were changed, for example, in the second lesson, the staff member taught what a reflective practitioner was and how a student teacher wrote journal note. In the mock lessons, the staff member explained how to reflect on their practice of mock lessons.

Journal Format

At first, a journal header was changed as shown in Fig. 1. That is, “the record of the lessons,

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

.....

Fig. 1 A change of the journal header

describe what you became aware of, what you were impressed with, and any questions you may have had” was changed to “the record of reflection from the viewpoints of subject teaching, student guidance and management”. Secondly, what made a reflective practitioner was emphasized even more in the lessons. Thirdly, learning how to describe the reflection in the journal was stressed in the lessons.

Evaluation Method

Two evaluation methods were used to evaluate whether the training program was effective. One was a questionnaire and the other was analysis of the journals which was the same as in the last study. Targets were twenty-nine 3rd and 4th grade undergraduate student teachers who experienced four weeks of student teaching at elementary schools from May to June 2015. Twenty-three were 3rd graders and six 4th graders.



Picture 1 Mock Lesson



Picture 2 Teaching Practice (1)

Questionnaire

- Purpose: Comparison of the answers of the questionnaire between before and after the training program.
- Date of questionnaire: Pre-questionnaire in April: Post-questionnaire in June 2015
- Questions: Questions were made according to three kind of competence: subject teaching, student guidance, management.

Journal Analysis

- Purpose: Classification of the notes into categories and comparison with the last study in 2014
- Period of analysis: August 2015 to March 2015
- Method: At first, the episode which included reflection was chosen from all journal notes of 29 student teachers. Secondly, the episodes were sorted based on three categories that were also used in 2014. The numbers of each classification were compared.

Practice of the Training Program

Period: May to June 2015

Practice: In the lesson to teach teaching skills, the staff member taught from the first step. For example, how to grip the chalk, where to stand in front of the blackboard, and what the stroke order of Japanese characters was. Of course, the staff member taught about “a teacher as a reflective practitioner” in detail and how to write reflection in the journal. Picture 1 shows a science mock lesson,



Picture 3 Teaching Practice (2)

in which this student teacher is teaching a chemistry experiment. The student teachers went to each elementary school for teaching practice in the middle of May. Picture 2 shows the physical education lesson, and Picture 3 shows the mathematics lesson. During 4 weeks of teaching practice, student teachers had to write in the journal every day. After the teaching practice, they came back to the university and reflected on the teaching practice in the lesson.

Results and Discussion

Questionnaire

The results of the questionnaire are shown in table 3.

The average scores of all questions except

questions No. 10 and 11 were significantly different. For question No. 10, the average score was 4.0, which was the highest in the pre-questionnaire. This meant student teachers already had the competence to control their emotions and behavior before the teaching practice. Therefore it was considered that a significant difference hadn't been observed in the post-questionnaire. However, almost all the answers had increased significantly.

Journal

The procedure of analyzing the journal was same as in 2014. At first, the episode which included reflection was chosen from all journal notes. All the notes were read in detail and the episode was chosen. It didn't mean one sentence. If a series of sentences of the note showed one story, it was regarded as one

Table 3 Questionnaire results

Question		Pre		Post		T-test	
		Mean	SD	Mean	SD	t	Results
<i>Subject Teaching Competence</i>							
1	I acquire broad knowledge and skills about the subject matter of teaching practice in elementary school.	2.25	0.75	3.29	1.08	4.16	**
2	I am ready to teach the subject matter of teaching practice.	2.64	0.99	4.00	0.94	4.51	*
3	I can make a teaching plan depending on the actual situation based on the previous learning situation of the students,	2.61	0.74	3.71	0.90	4.77	*
4	I can make a practice lesson while responding to the students flexibly and making full use of instruction methods.	2.82	1.06	3.61	1.10	2.77	**
<i>Studence Guidance Competence</i>							
5	I can explain the developmental characteristics of the students in one's school based on development theory.	2.18	0.86	2.89	0.83	2.59	*
6	I can devise the method to promote the communication between the teacher and students, and between students.	3.46	0.79	4.18	0.77	2.23	*
7	I can explain the discipline of one's school based on the student guidance theory.	2.14	0.85	3.50	0.88	5.87	**
<i>Management Competence</i>							
8	I am ready to speak about social events at the homeroom in introduction and conclusion everyday.	2.50	1.07	3.68	1.02	3.71	**
9	After a practice lesson, I can look back on one's lesson and find something to improve.	3.43	0.84	4.14	0.71	2.63	*
10	During a teaching practice I can control one's emotion and behavior.	4.00	0.72	4.43	0.69	1.42	
11	During a teaching practice, I can carry out one's teaching practice with a conscious process of "Plan - Do - Check - Action".	3.54	0.69	3.96	0.64	1.69	
12	I can administrate one's homeroom smoothly everyday based on the understanding of the objective of the homeroom.	2.61	0.92	3.46	0.79	3.96	**

Notes. ** $p < 0.01$ * $p < 0.05$

Table 4 Examples of Episodes

Episode 1

In the arithmetic lesson, the homeroom teacher taught multiplication of a two digit number. He prepared the multiplication table to stick on the blackboard and let the students practice it.

Episode 2

The teacher was not only teaching in the lesson, but also paying attention to the students, for example, she checks whether he/she uses a celluloid sheet laid under writing paper and whether there are unnecessary things on his/her desk except a notebook and a textbook., therefore I also thought that it's important to pay attention to their behavior from now on.

Table 5 Category 1

-lesson school	-meeting -sports festival	-break time -others	-lunch time	-sweeping time	-out of school	-after
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Table 6 Category 2

Method	Criteria
Thought	Note of a student teacher's reflection based on his/her thought(ideal and goal) without identifying time and place
Observation	Note of a student's reflection based on observation of teachers' responding to the incident with identifying time and place
Experience	Note of a student's reflection based on experience of his/her responding to the incident with identifying time and place

episode.

Here is an example "episode 1" as shown in Table 4. In this case, the student described only what he/she observed in the lesson. There were no reflections there but fact only. Therefore the episode was thrown away. Only the episode which included reflection was chosen. On the other hand, in the case of "episode 2" as shown in Table 4, the first half was what the student teacher observed. In the second half he/she reflected how his/her instruction was and he/she thought how he/she should pay attention to children's behavior. Therefore the episode 2 was chosen because reflection was included. The episode which included reflection was called "a reflection episode". A lot of reflection episodes were chose and typed in the spreadsheet software.

Next, the reflection episodes were classified from the viewpoints of three categories. Category 1 was time and place as shown in Table 5, which showed when and where the reflection episode happened. If the reflection episode happened in the lesson, we classified it into the group named "lesson", and

counted 1.

Next, Category 2 was method of reflection as shown in Table 6. The first group named "thought" meant the notes of a student teacher's reflection based on his/her thought (ideal and goal) without identifying time and place. The second group named "observation" meant the note of a student's reflection based on observation of teachers' response to the incident with identifying time and place. The third group named "experience" meant note of a student's reflection based on experience of his/her response to the incident with identifying time and place.

Next, Category 3 was the level of reflection as shown in Table 7. Three levels were introduced. The terms were quoted from those of Van Manen (1977), therefore the meaning was different from them [6]. At first, the group named "technical reflection" meant reflection in the level of strategy responding toward the incident technically. Secondly, the group named "practical reflection" meant reflection in the level of verifying the validity of his/her practical strategy and revising them. Thirdly, the

group named “critical reflection” meant reflection in the level grasping strategy from different viewpoints and reconstructing his/her frame of thinking.

Next, here is an example of classification as shown in Table 8. It explained how to classify and count the reflection episode using the example. At first, according to the category 1, episode A was classified into “lessons”. For category 2, this episode was based on his/her observation, so it was classified into “observation”. Concerning category 3, this was only the technical level reflection, so it was classified into “technical reflection”. In the same way, the reflection episodes were classified using three categories.

The results are shown in Table 9. Table 9 shows the comparison of the cross totaling between category 1(time and place) and category 2 (method) in this study

(left) and the last study (right). At first, there were 617 reflection episodes in total (21.3 episodes per student). The number per student increased compared to the last study. As the period of teaching practice was 20 days, a student teacher faced approximately

Table 7 Category 3

Level	Criteria
Technical Reflection	Reflection in the level of strategy responding toward the incident technically
Practical Reflection	Reflection in the level of verifying the validity of his/her practical strategy and revising them
Critical Reflection	Reflection in the level grasping strategy from different viewpoints and reconstructing his/her frame of thinking

Table 8 Example of Classification

	Example of Description	1 Time&Place	2 Method	3 Level
A	The teacher was not only teaching in the lesson, but also paying attention to the students, for example, whether he/she uses a celluloid sheet laid under writing paper and whether there is unnecessary thing on his/her desk except a notebook and a textbook. (snip),therefore I also have to pay attention such as their behavior.	Lessons	Observation	Technical Reflection
B	Today in break time, “Ms...Ms..I say, my friend ** is....”.There were a lot of students to speak to me about their troubles. I tried to listen to them as many as possible, but I said “Wait a moment. Wait a minute.” and I couldn’t respond all of them and left them as they were.(snip) I don’t like to leave them behind. So I would like to keep in touch them with aware to speak to them and to tell them something important.	Break time	Experience	Practical Reflection
C	Today I tried to speak to the students who I didn’t speak to positively. Because I was aware that I didn’t find and I couldn’t find the good point of individual students even though the teaching practice has come close to the end.(snip) I am desire to know about students more. Although only four days remains, I would like to speak to students positively.	Others	Thought	Critical Reflection

Table 9 Cross Totaling between Category 1 (Time&Place) and Category 2 (Method)

(2015)

2 Method 1 Time&Place	Thought	Observation	Experience	Total
Lessons	22	160	108	290
Meeting	0	23	10	33
Break time	2	19	5	26
Lunch time	1	10	3	14
Sweeping time	0	8	4	12
Out of school	0	8	2	10
After school	0	3	0	3
Sports Festival	3	15	12	30
Others	158	34	7	199
Total	186 (6.4)	280 (9.7)	151 (5.2)	617 (21.3)

Number of the student teachers: 29

(2014)

2 Method 1 Time&Place	Thought	Observation	Experience	Total
Lessons	5	101	46	152
Meeting	1	12	17	30
Break time	1	8	11	20
Lunch time	0	5	6	11
Sweeping time	0	2	5	7
Out of school	0	3	8	11
After school	0	0	0	0
Sports Festival	2	0	7	9
Others	207	11	12	230
Total	216 (7.7)	142 (5.1)	112 (4.0)	470 (16.8)

Number of the student teachers: 28

Table 10 Cross Totaling between category 3 (Level) and Category 2 (Method)

(2015)

2 Method 3 Level	Thought	Observation	Experience	Total
Technical	19 (0.7)	148 (5.1)	56 (1.9)	223 (7.7)
Practical	103 (3.6)	106 (3.7)	67 (2.3)	276 (9.5)
Critical	64 (2.2)	26 (0.9)	28 (1.0)	118 (4.1)
Total	186 (6.4)	280 (9.7)	151 (5.2)	617 (21.3)

Number of the student teachers: 29

(2014)

2 Method 3 Level	Thought	Observation	Experience	Total
Technical	54 (1.9)	104 (3.7)	39 (1.4)	197 (7.0)
Practical	106 (3.8)	34 (1.2)	67 (2.4)	207 (7.4)
Critical	56 (2.0)	4 (0.19)	6 (0.2)	66 (2.4)
Total	216 (7.7)	142 (5.1)	112 (4.0)	470 (16.8)

Number of the student teachers: 28

more than one reflection episode per day. It was suggested that the student teachers reflected on their practice more frequently than last year. Secondly for category 1, the group named “lessons” was 290 which were the highest, because they reflected most frequently on the lessons. It was natural because almost of the school life was lesson. The journal header was changed, however, about half of the reflection episodes were written about lessons same as the last study. Thirdly for category 2, the notes based on thought were 186 (6.4 per student), and observation was 280 (9.7 per student), experience was 151 (5.2 per student). The number per student of thought decreased, and the numbers per student of observation and experience increased compared to those of 2014. One of the program goals was to help student teachers to reflect deeply based on their experience. Therefore it was suggested that the student teachers reflected on their practice more deeply than last year.

Table 10 shows the comparison of the cross totaling between category 3 (level) and category 2 (method) in this study (left) and the last study (right). The episodes of practical reflection were 276 (9.5 per student), which was the highest number. Technical reflections were 223 (7.7 per student) and critical reflections were 118 (4.1 per student). The numbers per student of practical reflection and critical reflection increased especially compared to those of 2014. One of the program goals was to help student teachers to reflect critically based on his/her concrete experience. Therefore it was suggested that the student teachers reflected on their practice more

critically than last year.

Conclusion

As a result of the questionnaire, all of the average scores concerning subject teaching competence and student guidance competence had been increased significantly. As a result of analysis of the journal notes, it was revealed that student teachers became to reflect on their practice more deeply and more critically based on their experience. Finally, it was suggested that the training program renewal helped the student teachers to reflect more effectively and was effective to improve practical instructional competence of the student teachers.

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