

## Chapter Five

### Data Analyses: Observation of the Seven Cases

#### Introduction to chapter 5 and 6.

The fifth chapter is organized in seven parts according to the seven cases, order to analyze the videotapes, the questionnaires, the interviews, and the self-reports. We will start our analysis by summarizing the main findings from each case study through the discussion. And then in chapter six we will analyze in more general terms what results and conclusions can be drawn from the cases as a result of the research questions.

The following figure show us the two directions of analysis: the first direction is to analysis the cases themselves, such that the tools of data separate into two categories: the first one is centered on the research including videos, interviews and questionnaires and the second one is centered on the student teachers. While the second direction is characterized by the perspectives of the co-operating teachers, in addition to the videos which generally closer to the teacher profession, so that the questionnaires and self-reports represent the perspectives of the trainees, which gave the researcher the chance to make a comparison between each perspective of them.

As one can see in figure-2, the numbers 1, 2, ...7 denote the seven cases, while V is the video, I is the interview, Q is the questionnaire, and S-R is the self-report. The sign question marks denotes the outcome that is expected from the case(s), and from the comparison between the tools as a group of three versus one (1<sup>st</sup> direction of analyses) and a group of two versus two (2<sup>nd</sup> direction of analyses).

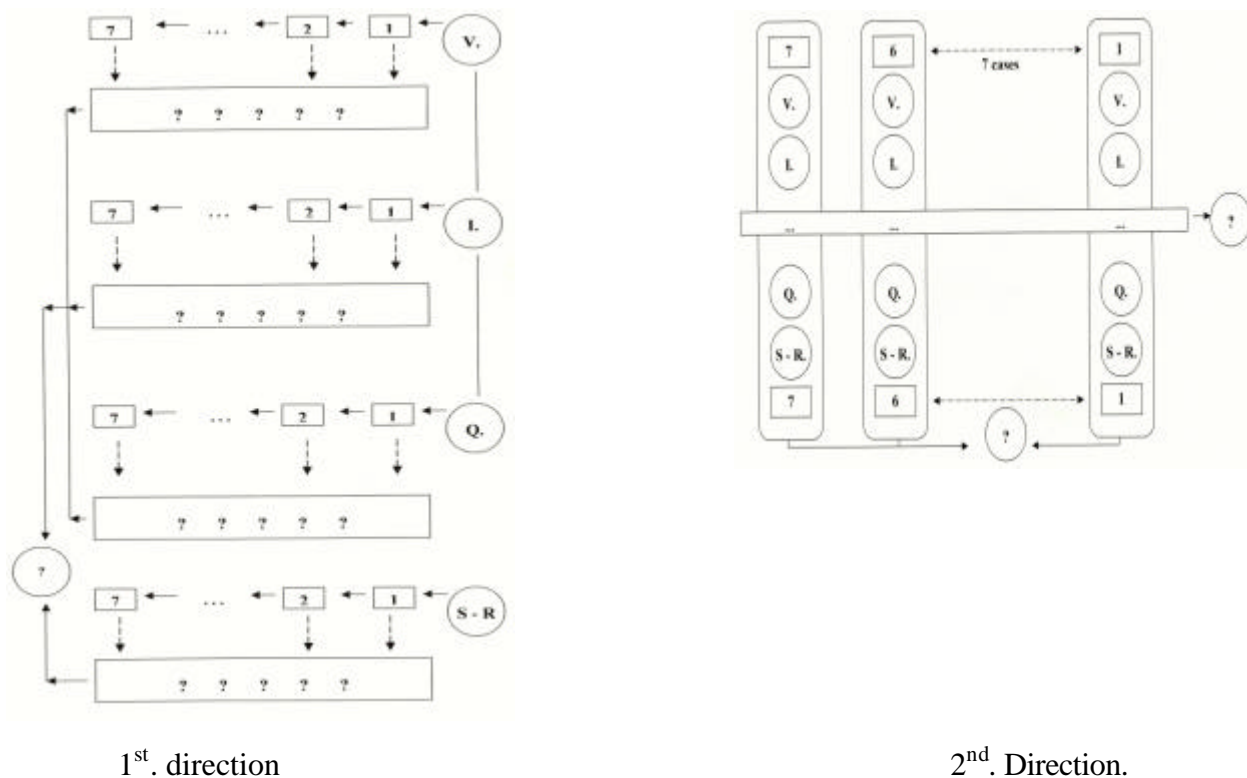


Figure-2: The flowchart of two directions of analyses

## 5.1 The case of Samer 1

The first video (Discount in sell operations) shows us teaching by presentation without a lesson plan and the student teacher sometimes uses a dialog technique with one pupil and/or some pupils without taking care of the others. The time management was not suitable. He gave a chance the pupils when they started the lesson by using some individual activities without any type of follow up, thus, the outcome of this lesson was very clear especially when the pupils could not do the textbook tasks. Moreover, the trainee said that “I have failed to meet the goals of the lesson. I will try again with a new strategy”. We think, this was a natural result of having no concerns about the lesson plan. He made his lesson without thinking of the lesson’s objectives, pupils’ learning, and learners’ needs.

The second video (The Scale) shows us the changes in the methods of teaching that were used. He extended the dialog to have a discussion which involved all the pupils’ participation and he used the presentation at low level, just when it was necessary. He managed the time of teacher’s activities to the time of pupils’ activities as shown in the following ratio: 14:16, which was very bad. The structure of the lesson was as follows:

Dialog: Is it possible to draw a city on a piece of paper? One of the immediate responses was “that is impossible, a city is bigger than a piece of paper”.

Another response was “Maybe but we need tools”. While one commented “How did they draw a map of the world?”.

Discussion: Suppose that the distance between two cities is 100 km but the distance between them on the map is just 5 cm.

What is the scale in this case? The discussion led to each 1 cm on map representing 2000000 cm on the earth.

Individual work: Distance between two cities is 2000 km, but the distance on the map just 4 cm, what is the scale?

Assignment of homework: Solve problem number one, and complete the third and fifth as a piece of homework.

As one can see the structure of the lesson changed to the situation better than the situation of V1. He was concerned with many responses to one question (variations), which was a new trend as a student teacher. At the same time, he gave the pupils the chance to correct the wrong answers and to take a decision on two answers to one question (which one is the correct?). Sometimes he did not give enough thought to the amount of time- thinking that he gave to the pupils to think about the task. He left three minutes for two tasks, which was not enough to think about the task. He was concerned about homework being a part of continuous assessment.

The mark for this video was 68. (See the first evaluation form on the next two pages).

The third video (Congruent Triangles) confirms that many aspects of his performance are changed. One can notice from the two evaluation forms that follow these paragraphs. There were positive changes that occurred which were better than the previous phase of practice teaching. He gave the pupil’s opportunity to learn by doing from the outset of the lesson. Moreover, he started manipulate the roles of the pupils during the lesson to coincide with the lesson’s goals. At the same time, we noticed two things: firstly, he did not classify the problem solving activities, all of them were of one type, secondly, he took the role of the pupil a way from them especially when he stated the final conclusion during the teaching/learning process.

The pattern of the lesson in the last video were as follows:

Questions, Individual work, Presentation, Discussion, Individual work, Discussion, Individual work. The following details show the structures of these parts of the pattern.

Questions:

How many elements of a triangle?

Draw two triangles ABC with 9,8,7 cm and EFG with 9,8,7 cm. By using protractor, find the corresponding angles?

Individual work:

The pupils started drawing two triangles and measuring the corresponding triangles in their notebooks. After that the teacher asked them about their results.

Presentation:

The teacher generalized the results in the following way:

ABC, EFG are congruent triangles with three correspondence equal sides, while correspondence angles are equal in the two triangles.

$AB = EF = 9 \text{ cm}$

$BC = FG = 8 \text{ cm}$

$AC = EG = 7 \text{ cm}$ .

Angle C = angle G,

angle A = angle E,

And angle B = angle F.

Discussion:

What are your results?

Angle B = angle F =  $50^\circ$ .

Angle G = angle C =  $70^\circ$ .

Angle A = angle E =  $60^\circ$ .

Thus, ABC, and EFG are congruent triangles with three sides. And the three correspondence angles are equal.

Individual work:

Given that ABC, and XYZ are congruent triangles, angle B = Y =  $30^\circ$ ,  $AB = XY = 7 \text{ cm}$ ,

$BC = YZ = 5 \text{ cm}$ .

Discussion:

They organized a discussion about the results;

The responses were:  $XZ = AC$ , angle A = angle X, and angle C = angle Z,

Two correspondence sides are equal in length,

Two correspondence angles are equal.

Individual work at the end of the lesson was solving the problems in the textbook.

The time used by the student teacher versus the time of the pupils' activities was represented by the ratio 10:35, which was a good indicator pointing out that the student teacher gave the pupils an opportunity to express their ideas, and this indicator reflected the change that occurred in the teaching method, which was used in the final lesson. Looking at the pupil's behavior one can see a change in the way that they responded to the questions that were used to stimulate them. They played a bigger role in the classroom tasks. Thus, the rating scale of the lesson evaluation shows us that there was a progression in the majority of performance areas with the exception of the questioning technique. This remained unchanged. The development of the teacher's competency became clear through the comparison of the two evaluation forms. (See the evaluation forms next two pages).

The final mark was (81) which estimated by three evaluators. One can see the evaluation form on the next two pages.

# Lesson Evaluation Form

## Case 1 Video 2

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1 2 3 4 5 6	
2. Pre learning is adequate:	1 2 3 4 5 6	
3. Lesson concerning content: correct and specific	1 2 3 4 5 6	
4. Helping pupils in performing their tasks is related to the learning situation	1 2 3 4 5 6	
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 2 3 4 5 6	
6. Teaching/learning media are effective concerning learning achievement.	1 2 3 4 5 6	
7. Learning activities are used in a meaningful way.	1 2 3 4 5 6	
8. Achievement of learning objectives is assessed.	1 2 3 4 5 6	
9. Mistakes (content, methods, teacher-behavior, media)	1 2 3 4 5 6	
10. Guidance of the class	1 2 3 4 5 6	
11. Contact with pupils	1 2 3 4 5 6	
12. Reaction/interactions	1 2 3 4 5 6	
13. Motivation & Feedback	1 2 3 4 5 6	
14. Use questioning technique	1 2 3 4 5 6	
15. Reinforcement	1 2 3 4 5 6	

The level of satisfaction: 68

## Lesson Evaluation Form

### Case 1 Video 3

	Satisfied	2	3	4	5	unsatisfied	6
1. Objectives are: organized as learning sequence; explained; measurable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Pre learning is adequate:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Lesson concerning content: correct and specific	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Helping pupils in performing their tasks is related to the learning situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Teaching/learning media are effective concerning learning achievement.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Learning activities are used in a meaningful way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Achievement of learning objectives is assessed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Mistakes (content, methods, teacher-behavior, media)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Guidance of the class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Contact with pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Reaction/interactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Motivation & Feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Use questioning technique	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Reinforcement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The level of satisfaction: 81.

## 5.2 The case of Dana 2

The first video (Pythagorean Theorem) shows the both methods of teaching as being very traditional (that means the teacher speaks a lot and the pupils listen) as well as the lesson plan. She likes to cover a lot of material on a topic, thus she talked too much and she did not give the pupils many opportunities to do their own work. She needs guidance in how to be a teacher; because she does not understand the role of a teacher. This is what you can see from the first performance of the student teacher.

We think that the pupils can't interact during the lesson when their responses to the last two tasks were very poor, but this is due to the fact that the teaching methods were characterized by too much talking by the teacher.

The second video (Real Numbers) shows that the questions posed during this lesson were closed and only required one or two word answers. She did not look at the positive and negative aspects during the explanation of some concepts, and she told the pupils the answers to simple questions. The pupils questions were not listened to see or simply ignored. If we make a comparison between the objectives that are described in the lesson plan and what was put into practice, we actually will find a big gap between them. The carrying out of the lesson was not an appropriate reflection of the lesson plan.

The student teacher had a problem in implementations the lesson plan as it was written or prepared. The problem could be seen when she started the lesson.

The time of the teacher's activities to the time of pupils' activities can be represented by the following ratio; 13:18. The structure of the lesson was as follows:

Dialogue: Who has an opinion on real numbers? We need a comprehensive definition for real numbers.

Questioning: what are irrational numbers?

Presentation: these numbers can't be written as a fraction at all. For example;  $\sqrt[4]{4}$ .

A positive real number is greater than zero, while a negative is less than zero.

Discussion: give examples of rational numbers?

Individual work: worksheet containing some activities, the pupils didn't understand how to perform these activities because the paper was not clear. It is written in her hand-writing, and is unreadable.

The mark for this lesson was 39% which was decided by the evaluators following some disagreement amongst them. We can see these aspects from the lesson by lesson evaluation form.

In the third video (Liner Inequality(s) in two variables), she improved her question technique. She asked meaningful open questions, and made the pupils into mathematical thinkers. She tried many times to give the pupils the chance to participate in the lesson. She built up a good relationship with the pupils through an individual follow up. After that many pupils participated in the group activities, which were held on the board. There was a big change in the role of the student teacher as a teacher, who was more present and then became vacillator and guide doing the process of teaching/learning inside the classroom.

If we focused on the last curve of the performance, we said that: She had made progress in seven areas at a high level, five of them were changed from a very bad level in V2 to an excellent level in V3 while one area remained the same, it's reaction and interaction. The last area had jumped just one level on the scale, which was term number eight that related to the achievement of learning objectives, she did not work in order to assess.

The development of the teacher's competency becomes clear by comparing the two evaluation forms.

The pattern of the lesson was as follows:

Dialogue, individual work, presentation, group work, discussion.

The structure of the pattern was as follows:

Dialogue:

What type is this inequality:  $2x - 10 < 7y$ .

Who can solve this? And represent the solution in XY-plan.

Response,  $2x - 10 > 7y$  and then.  $2x - 7y = 10$ .

We take  $2x - 7y = 10$

If  $x = 0$  then  $y = -10/7$ , and if  $y = 0$  then  $x = 5$ .

Is the point  $(5, 0)$  belongs to the solution set?

Leave it now.

Individual work:

Find the solution of  $x - 2y = 2$ .

Show us the region of the solution in XY-plan.

Presentation:

The student teacher commented on their solutions and told them directly how to treat the two inequalities. But she organized the following group work.

Group work:

Find the solution set of the following inequalities:

$$8y - x \leq 3,$$

$$7x - 2y \leq 3.$$

The pupils worked in three groups and carried out this task as a team.

Discussion:

This discussion was organized about the results of the group work. Some comments about the performance of the pupils, how to deal with this form of inequalities?

$$-1 \leq x \leq 2.$$

Which was a problem for the pupils to know that it consists of two inequalities:

$$x \leq -1, \text{ and } x \leq 2.$$

While the time that used by the student teacher versus the time used by the pupils represented by the ratio; 18: 27.

The final mark was 76 which was decided upon by three evaluators.

# Lesson Evaluation Form

## Case 2 Video 2

1. Objectives are:  
organized as learning sequence;  
explained;  
measurable.
2. Pre learning is adequate:
3. Lesson concerning content: correct and specific
4. Helping pupils in performing their tasks is related to  
the learning situation
5. Use of learning /teaching methods is pupil centered  
and adequate to the topic.
6. Teaching/learning media are effective concerning  
learning achievement.
7. Learning activities are used in a meaningful way.
8. Achievement of learning objectives is assessed.
9. Mistakes (content, methods, teacher-behavior, media)
10. Guidance of the class
11. Contact with pupils
12. Reaction/interactions
13. Motivation & Feedback
14. Use questioning technique
15. Reinforcement

**Satisfied** **unsatisfied**

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

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1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

1 2 3 4 5 6

The level of satisfaction: 39.



**Lesson Evaluation Form**  
**Case 2 Video 3**

	<b>Satisfied</b>	<b>unsatisfied</b>
1. Objectives are: organized as learning sequence; explained; measurable.	1 2 3 4 5 6	
2. Pre learning is adequate:	1 2 3 4 5 6	
3. Lesson concerning content: correct and specific	1 2 3 4 5 6	
4. Helping pupils in performing their tasks is related to the learning situation	1 2 3 4 5 6	
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 2 3 4 5 6	
6. Teaching/learning media are effective concerning learning achievement.	1 2 3 4 5 6	
7. Learning activities are used in a meaningful way.	1 2 3 4 5 6	
8. Achievement of learning objectives is assessed.	1 2 3 4 5 6	
9. Mistakes (content, methods, teacher-behavior, media)	1 2 3 4 5 6	
10. Guidance of the class	1 2 3 4 5 6	
11. Contact with pupils	1 2 3 4 5 6	
12. Reaction/interactions	1 2 3 4 5 6	
13. Motivation & Feedback	1 2 3 4 5 6	
14. Use questioning technique	1 2 3 4 5 6	
15. Reinforcement	1 2 3 4 5 6	

The level of satisfaction: 76.

### 5.3 The case of Fuad 3

The first video (Drawing circles by using compass) shows that the lesson plan was very clear, it's objective was written in a measurable way. He started the lesson by using the question technique and did not give the pupils any time. He was very fast, so that he went through the lesson very quickly. He sometimes started the response by answering with the first word of the answer. The pupils were not given the opportunity to be mathematical thinkers. finally he tried to achieve the goals of the lesson. However, he failed to achieve the last objective, which were related to interaction in the classroom.

The second video(Drawing Parallelogram) was better than the previous one (V1). He concerns with the pupils and the situation of their learning activities, which he used in a meaningful way.

The interaction however was not adequate. Maybe the task was not designed for individual work, while the situation of one group work on the board was not addressed at all. The concern with the pupils was concentrated on their individual work.

Moreover, achievement of learning objectives was not assessed in a clear way, it was not satisfactory. Although we had seen many changes, new aspects of performance were improved: lesson planning, lesson content, helping pupils in performing their tasks, class guidance, the use of motivation, and sometimes the positive feedback. The student teacher's performance was better than the previous one.

The structure of the lesson was as follows:

Revision (as a presentation): Last time we explained drawing parallelogram. Do you remember that?

Class work: draw the parallelogram ABCD,  $AB = 3$  cm,  $BC = 4$  cm, and the diagonal  $AC = 5$  cm, using your compass.

Presentation: listen to me again open compass 5 cm .....and .....we construct a triangle, and the same process to get the parallelogram

Individual work: solving the first problem, ABCD parallelogram such that  $AB = 4$  cm,  $BC = 5$  cm,  $BD = 5$  cm.

The time of teacher's activities to the time of pupils' activities was represented by the following ratio, 10:20, which was very good indicator for the management of the lesson, and the consequences due the pupils' learning.

The mark for this performance was 60, which was calculated by three evaluators.

The third video (Quadratic Equation and its Factors) shows us the progress made in many aspects of the performance of the student teacher, especially the lesson plan, pre-learning, lesson content, class guidance, contact with pupils, motivation and feedback, and no content knowledge mistakes were made at all. At the same time, there were some areas still representing obstacles towards any progress during the third video. Those obstacles were: teaching/learning media were not adequate and were not effective concerning learning achievement, and there was no use of the reinforcement at all.

What we have to say: Three areas out of five have changed at high level through the last two videos. They were: pre-learning, reaction / interaction, and using of the questioning technique.

The pattern of the lesson was as follows:

Discussion:

Find the multiple of  $x$  and  $(x - 3)$ . Two responses:  $x^2 - 3x$ ,  $x^2 + 4x + 4$ .

Find  $(x+3)(x+3)$ , one response,  $x^2 + 6x + 9$ . find  $(x + a)^2$ ? And  $(x+5)^2$ ,  $(x-4)^2$ .

Presentation: the teacher explain the complete square.

Group work: factorize  $x^2 + 16 - 8x$ . if the area of a square is  $x^2 + 10x + 25$  cm<sup>2</sup>, find its side?

Test whether the following are complete squares or not:  $x^2 + 4$ ,  $x^2 - 4$ ,  $x^2 - 1$ ,  $x^2 - 2x + 1$ .

Individual work involved solving textbook problems.

presentation, group work, individual work.

The development of the student teacher's competency becomes clear through the comparison of the two evaluation forms.

The time used by the student teacher versus to the time used by the pupils is represented by the ratio: 16:29.

The final mark was (73) which was decided upon by three evaluators. One can see the level of satisfaction or the mark on the next two pages by looking at the lesson evaluation form.

**Lesson Evaluation Form**  
**Case 3 Video 2**

	<b>Satisfied</b>		<b>unsatisfied</b>
1. Objectives are: organized as learning sequence; explained; measurable.	1	2	3 4 5 6
2. Pre learning is adequate:	1	2	3 4 5 6
3. Lesson concerning content: correct and specific	1	2	3 4 5 6
4. Helping pupils in performing their tasks is related to the learning situation	1	2	3 4 5 6
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1	2	3 4 5 6
6. Teaching/learning media are effective concerning learning achievement.	1	2	3 4 5 6
7. Learning activities are used in a meaningful way.	1	2	3 4 5 6
8. Achievement of learning objectives is assessed.	1	2	3 4 5 6
9. Mistakes (content, methods, teacher-behavior, media)	1	2	3 4 5 6
10. Guidance of the class	1	2	3 4 5 6
11. Contact with pupils	1	2	3 4 5 6
12. Reaction/interactions	1	2	3 4 5 6
13. Motivation & Feedback	1	2	3 4 5 6
14. Use questioning technique	1	2	3 4 5 6
15. Reinforcement	1	2	3 4 5 6

The level of satisfaction: 60.

## Lesson Evaluation Form

### Case 3 Video 3

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1	2 3 4 5 6
2. Pre learning is adequate:	1	2 3 4 5 6
3. Lesson concerning content: correct and specific	1	2 3 4 5 6
4. Helping pupils in performing their tasks is related to the learning situation	1	2 3 4 5 6
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1	2 3 4 5 6
6. Teaching/learning media are effective concerning learning achievement.	1	2 3 4 5 6
7. Learning activities are used in a meaningful way.	1	2 3 4 5 6
8. Achievement of learning objectives is assessed.	1	2 3 4 5 6
9. Mistakes (content, methods, teacher-behavior, media)	1	2 3 4 5 6
10. Guidance of the class	1	2 3 4 5 6
11. Contact with pupils	1	2 3 4 5 6
12. Reaction/interactions	1	2 3 4 5 6
13. Motivation & Feedback	1	2 3 4 5 6
14. Use questioning technique	1	2 3 4 5 6
15. Reinforcement	1	2 3 4 5 6

The level of satisfaction: 73.

## 5.4 The case of Ibteham 4

The first video (Drawing Square and Rectangle by using Compass and Protractor) was interesting for the pupils because the lesson was started with a discussion, clear questions, and suitable movement among the pupils in the classroom. The video showed this in a clear way. In addition the interaction among the pupils through several activities made the pupils very happy. One thing was not suitable: There was no individual work at all. All the activities were designed to be class work, which was very weak and not ordered.

The second video (Metric System Applications in Area and Volume) shows many areas of improvement in the practice teaching, which were about 12 out of 15 aspects of the performance, while the other three areas were weak. We want to highlight those areas, which were: helping pupils in performing their task was not related to the learning situation, learning activities were not used in a meaningful way, and achievement of learning objectives was not assessed. She used a good visual aid to express the concepts of the metric system in Area and Volume by using the stairs. They were very efficient for the pupils' learning the topic "Area" but not the topic "Volume" because the student teacher did not use the visual aids perfectly.

The structure of the lesson was as follows:

Revision: (as questions): what are units of area? How we can find the area of ...?

Presentation: you have to know each small square is one square unit, now the units of volume take the same system.

Class work: construct a new cube and find its volume.

Questioning: who can define the volume? Who can write the units of area?

Class work: find the volume of a cub with 1 m a side?

Find the volume of the previous cube in cubic decimeters?

Find the following:  $15 \text{ m}^3 = \dots \text{ cm}^3$  and  $12 \text{ cm}^3 = \dots$  cubic decimeter.

The time of the teacher's activities to the time of the pupils' activities is represented by the following ratio: 18: 20, which was not so good for the pupils' learning. However, the co-operating teachers immediately made an exam for the purpose of evaluating the pupils' learning, the results were very good (11 pupils out of 39 received full marks, and three of the class failed). It could be that the visual aids were very efficient for the pupils' learning.

The mark for this performance was 73, which was decided upon by three evaluators.

In the third video (Area of Trapezoid) the student teacher was really a teacher, especially when she used visual aids at appropriate time, which helped the pupils to achieve their goals and to perform their tasks, which influenced the learning situation.

If you look at the performance curve, you will see many areas of performance were performed excellently (10 out of 15 achieving perfect marks), while the other five aspects were performed well. The pattern of the lesson was as follows:

Discussion:

What is the area of a parallelogram? Who could draw a parallelogram? Who could give me a definition of a parallelogram? One response: quadrilateral with each two-sides parallel and equal. Suppose that we split parallelogram into two parts, name each part. One response was two triangles.

What is the relation between each triangle and the parallelogram?

Demonstration: ABCD, and ABZH are two congruent trapezoids,

Area of rectangle = 2(area of trapezoid),

Area of trapezoid =  $\frac{1}{2}$  (AE) (CZ) =  $\frac{1}{2}$  AE (BZ +AH),

Then, area =  $\frac{1}{2}$  (height) (sum of parallel bases).

Individual work: solving question number four from the text: “find the area of a trapezoid that has the sum of parallel bases of 24 cm, and a height 12 cm?”

The ratio of the time of the student teacher used versus to the time of the pupils used in the lesson is represented by the form 15:30, which was reasonable, because the student teacher took the main role of teaching to explain some new aspects of the topic by using visual aids.

The behavior of the pupils was very natural and came to notice in a good manner as a result of the efficient teaching methods.

The development of the teacher’s competency becomes clear through the comparison of the two evaluation forms.

The final mark was (80) which was decided upon by three evaluators.

## Lesson Evaluation Form

### Case 4 Video 2

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
2. Pre learning is adequate:	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
3. Lesson concerning content: correct and specific	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
4. Helping pupils in performing their tasks is related to the learning situation	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
6. Teaching/learning media are effective concerning learning achievement.	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
7. Learning activities are used in a meaningful way.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
8. Achievement of learning objectives is assessed.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
9. Mistakes (content, methods, teacher-behavior, media)	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
10. Guidance of the class	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
11. Contact with pupils	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
12. Reaction/interactions	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
13. Motivation & Feedback	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
14. Use questioning technique	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
15. Reinforcement	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	

The level of satisfaction: 73.



## Lesson Evaluation Form

### Case 4 Video 3

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1	2 3 4 5 6
2. Pre learning is adequate:	1	2 3 4 5 6
3. Lesson concerning content: correct and specific	1	2 3 4 5 6
4. Helping pupils in performing their tasks is related to the learning situation	1	2 3 4 5 6
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1	2 3 4 5 6
6. Teaching/learning media are effective concerning learning achievement.	1	2 3 4 5 6
7. Learning activities are used in a meaningful way.	1	2 3 4 5 6
8. Achievement of learning objectives is assessed.	1	2 3 4 5 6
9. Mistakes (content, methods, teacher-behavior, media)	1	2 3 4 5 6
10. Guidance of the class	1	2 3 4 5 6
11. Contact with pupils	1	2 3 4 5 6
12. Reaction/interactions	1	2 3 4 5 6
13. Motivation & Feedback	1	2 3 4 5 6
14. Use questioning technique	1	2 3 4 5 6
15. Reinforcement	1	2 3 4 5 6

The level of satisfaction: 80.

## 5.5 The case of Hyam 5

The first video (The line segment joining the center at the midpoint of a chord of a circle is perpendicular to the chord) shows the student teacher as being cleverer more than our expectations. She liked to carry out everything within short time frame. She used the materials and the visual aids but not in an effective way to verify the goals of the lesson. She needs much practice . Moreover she has to assess the pupils work from time to time and to practice the area of assessment teaching. She looked to the co-operating teacher to ask her permission to continue the lesson.

The second video (Factorize the quadratic equation) shows how the student teacher tried to improve her performance, especially in the use of media, lesson plans, methods of teaching, and classroom management skills. At the beginning of the lesson the pre-learning was very poor. It was directly centered on the learning objectives, and on the strategy of helping the pupils to perform the tasks was not centered on the pupils' learning. The performance was characterized by a lot of talking on her part although sometimes it was not related to the topic.

The structure of the lesson was as follows;

Discussion: meaning of square number.  $X^2$ ,  $Y^2$ , and  $(x + 2)^2$ .

Demonstration:

Now,

$$\begin{array}{c} x \\ \square \\ x \end{array} + \begin{array}{c} a \\ \square \\ a \end{array} + \left\{ \begin{array}{c} x \\ \square \\ a \\ \square \\ x \end{array} \right\} = \begin{array}{c} a + x \\ \square \\ \square \\ \square \\ \square \\ a + x \end{array}$$

$$x^2 + 2ax + a^2 = (x + a)(x + a) = (x + a)^2.$$

Class work: factorize  $x^2 - 8x + 16$ .

Individual: work: factorize  $x^2 + 10x + 25$ .

The time of the teacher's activities to the time of the pupils' activities is represented by the following ratio: 16:20, which was not bad, but was not so good because too much time was spent on the demonstration.

The mark for this performance was 73, which was decided upon by three evaluators. One can see the lesson evaluation form on the next two pages.

The third video (Area of the Circle) shows us a clear picture of: how pre-learning is relevant to new topic, and how the student teacher can help the pupils in performing their task within the related learning situations. The student teacher modified her teaching role in order to help the pupils achieve their learning goals. She improved her performance in all aspects of the teaching/learning process.

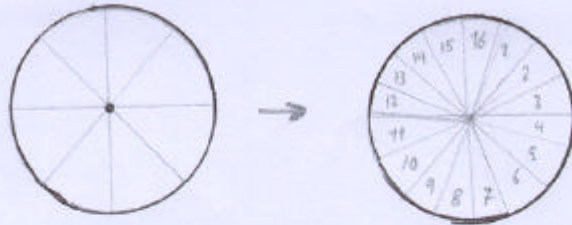
The social form of learning was satisfactory and pupil centered as we could see on the video. It was a natural result of the change that happened in all steps of preparing the lesson plan and its implementation in the classroom.

The pattern of the lesson was as follows:

Discussion: this discussion is going to be about the circumference, radius, diameter, and chord of a circle. After that, they discussed half, third, and fourth area of the circle as well as the half, third, fourth of circumference of the circle.

Demonstration: how can derive the formula of area? By cutting the circle into many sectors, and then rearranging them into the form of a parallelogram,

Here is a circle; we split into eight equal parts; each one is split again into two equal parts ; you will have sixteen equal parts as shown in figure :



Rearrange those parts in the following order :



This order becomes to be parallelogram,

What is the Area of parallelogram ?P : base  $\times$  high.

So; Area of a circle = Area of a parallelogram .

=  $r \times (1/2)c$  ; where  $r$  : radius of circle & high of parallelogram,  $C$ : circumference of circle & base of parallelogram.

$$= r \times 1/2 \times 2\pi r.$$

$$= \pi r^2 \quad ; \pi = 3.14$$

To find Area of a circle with  $r = 5 \text{ cm}$  ?

Group work:

Find the area of a circle with  $r = 5 \text{ cm}$ ?

Find the area of a circle with circumference 12.56 cm?

Find the area of a circle with diameter 20 cm?

Individual work: solving the textbook problems as homework, which was started in the class.

The time of the student teacher's activities versus to the time of the pupils in doing activities was represented by the ratio 15:30, which was a good indicator of how much she talked. She talked very much but this situation now improved as the ratio clearly shows us.

We think that, when you talk too much as a teacher, your pupils are the ones who lose out.

You can not enable them to become mathematical thinkers and problem solvers.

The development of the teacher's competence becomes clear by comparing the two evaluation forms.

The final mark was (79), which was decided upon by three evaluators.

## Lesson Evaluation form

### Case 5 Video 2

	Satisfied			unsatisfied		
1. Objectives are: organized as learning sequence; explained; measurable.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
2. Pre learning is adequate:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
3. Lesson concerning content: correct and specific	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
4. Helping pupils in performing their tasks is related to the learning situation	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
6. Teaching/learning media are effective concerning learning achievement.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
7. Learning activities are used in a meaningful way.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
8. Achievement of learning objectives is assessed.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
9. Mistakes (content, methods, teacher-behavior, media)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
10. Guidance of the class	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
11. Contact with pupils	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
12. Reaction/interactions	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
13. Motivation & Feedback	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
14. Use questioning technique	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
15. Reinforcement	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

The level of satisfaction: 73.

## Lesson Evaluation form

### Case 5 Video 3

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1 2 3 4 5 6	
2. Pre learning is adequate:	1 2 3 4 5 6	
3. Lesson concerning content: correct and specific	1 2 3 4 5 6	
4. Helping pupils in performing their tasks is related to the learning situation	1 2 3 4 5 6	
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 2 3 4 5 6	
6. Teaching/learning media are effective concerning learning achievement.	1 2 3 4 5 6	
7. Learning activities are used in a meaningful way.	1 2 3 4 5 6	
8. Achievement of learning objectives is assessed.	1 2 3 4 5 6	
9. Mistakes (content, methods, teacher-behavior, media)	1 2 3 4 5 6	
10. Guidance of the class	1 2 3 4 5 6	
11. Contact with pupils	1 2 3 4 5 6	
12. Reaction/interactions	1 2 3 4 5 6	
13. Motivation & Feedback	1 2 3 4 5 6	
14. Use questioning technique	1 2 3 4 5 6	
15. Reinforcement	1 2 3 4 5 6	

The level of satisfaction: 79.

## 5.6 The case of Hayat 6

The first video (Trigonometry Function) shows us an exceptional case for a student teacher. She is clever, active, and is hard working. She performed well during this video in class ten. However, at the end of the lesson something went wrong. She made a mistake during the closure for the lesson. The mistake was connected to scientific language, not accurate language. In spite of this, she continued as a teacher without letting it influence her personality or her performance, which gave us the impression that her personality was very well adapted to the situation.

The second video (Trigonometry –Angles) shows the same group of pupils (grade ten) as in the last video. Appropriately she revised what was discussed in the last lesson by using the questioning technique, and she used appropriate methods to cover the last topic before the pupils started solving the textbook problems.

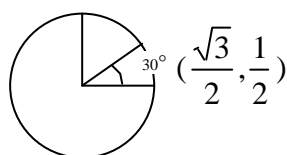
The process of learning/teaching was organized in a rigid way, which put the learning of the pupils into a restricted frame work, not allowing for creativity.

The structure of the lesson was as follows;

Revision: what is  $\text{Cos } 45^\circ$ ,  $\text{Sin } 45^\circ$ ,  $\text{Tan } 45^\circ$ , and what is  $\text{Sin } 30^\circ$  ? what is  $\text{Cos } 30^\circ$  ?

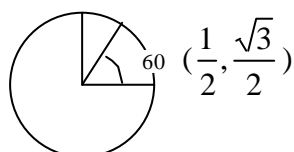
what is  $\text{Sin } 60^\circ$  ? what is  $\text{Cos } 60^\circ$  ?

Now; who can draw a sketch for a point that is related to an angle of  $30^\circ$  in a unity circle?.



The unity circle.

Who can draw the situation of angle  $60^\circ$  ?



Remember the positive signs of trigonometry into quarter of the XY-plane  
class work: start solving problem from the textbook.

The time of the teacher's activities to the time of the pupils' activities is represented by the following ratio; 13:22, which was not good, because the lesson should have been pupils centered as it was lesson where they were applying what they had learnt.

The mark for this performance was 64, which was decided upon by three evaluators.

In the third video (Congruent Triangles) we observed the performance of the student teacher in class seven (preferable grade for the student teacher; as she told us in the questionnaire). There were concerns about two issues: pre-learning, and the situation of the pupils learning, especially in their work, which centered on learning goals. However the rigid frame work of the lesson, which we talked about in V2 was also used during this lesson with new dimensions: the class, the topic, the time of experience of the student teacher from V2 to V3 (it's about one month), and her personal life. The psychological situation of the student teacher during this time was not good nor stable. These conditions added to the rigid way in which the student teacher restructured the pupil's creativity, and their motivation, as we have

seen in the video. This case study needs more depth to find out why her performance did not improve, rather sometimes sharply regressed. At this point in time, we do not know the reason for this depression. Maybe when we analyze the other types of data, we will discover the reason for this situation.

The pattern of the lesson was as follows:

Discussion: who can explain to me the first case of the congruent triangle?

Who tell the second case of the congruent? The third and the fourth?

Group work: solving problems from the textbook.

Discussion: the pupils and the teacher explain the answers of the problems into groups.

According to the ratio of the time of the lesson between student teacher and the pupils; it was 12:33; which is a good indicator of her role as a teacher, in addition to the concern about the pupil's activities, which was centered on the learning goals.

The development of the teacher's competence becomes clear by comparing of the two evaluation forms.

The final mark was (60) which was decided upon by three evaluators.

## Lesson Evaluation form

### Case 6 Video 2

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1 <input type="text" value="2"/> 3 4 5 6	
2. Pre learning is adequate:	<input type="text" value="1"/> 2 3 4 5 6	
3. Lesson concerning content: correct and specific	<input type="text" value="1"/> 2 3 4 5 6	
4. Helping pupils in performing their tasks is related to the learning situation	1 <input type="text" value="2"/> 3 4 5 6	
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 <input type="text" value="2"/> 3 4 5 6	
6. Teaching/learning media are effective concerning learning achievement.	1 2 3 <input type="text" value="4"/> 5 6	
7. Learning activities are used in a meaningful way.	1 <input type="text" value="2"/> 3 4 5 6	
8. Achievement of learning objectives is assessed.	1 2 3 <input type="text" value="4"/> 5 6	
9. Mistakes (content, methods, teacher-behavior, media)	<input type="text" value="1"/> 2 3 4 5 6	
10. Guidance of the class	1 <input type="text" value="2"/> 3 4 5 6	
11. Contact with pupils	1 2 <input type="text" value="3"/> 4 5 6	
12. Reaction/interactions	1 2 <input type="text" value="3"/> 4 5 6	
13. Motivation & Feedback	1 2 3 <input type="text" value="4"/> 5 6	
14. Use questioning technique	1 <input type="text" value="2"/> 3 4 5 6	
15. Reinforcement	1 2 <input type="text" value="3"/> 4 5 6	

The level of satisfaction: 64.



## Lesson Evaluation form

### Case 6 Video 3

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1	2 3 4 5 6
2. Pre learning is adequate:	1	2 3 4 5 6
3. Lesson concerning content: correct and specific	1 2	3 4 5 6
4. Helping pupils in performing their tasks is related to the learning situation	1 2	3 4 5 6
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 2 3	4 5 6
6. Teaching/learning media are effective concerning learning achievement.	1 2 3 4 5	6
7. Learning activities are used in a meaningful way.	1 2 3	4 5 6
8. Achievement of learning objectives is assessed.	1 2 3 4 5	6
9. Mistakes (content, methods, teacher-behavior, media)	1 2	3 4 5 6
10. Guidance of the class	1	2 3 4 5 6
11. Contact with pupils	1 2	3 4 5 6
12. Reaction/interactions	1 2 3	4 5 6
13. Motivation & Feedback	1 2 3 4	5 6
14. Use questioning technique	1 2 3	4 5 6
15. Reinforcement	1 2 3	4 5 6

The level of satisfaction: 60.

## 5.7 The case of Yassmeen 7

The first video (Pythagoras Theorem) shows the whole group of the pupils interacting, especially when the student teacher asked questions on sequences, which save the pupils active role and motivated them. She used the visual aids in an efficient way to forward the lesson goals. The visual aids pleased the pupils and made them active during the lesson. The activities used in the lesson were centered on the pupils learning and organized in a meaningful way. From this video, the reader might be think that the student teacher could improve her performance in a way that enabled her to become more aware of herself as a teacher.

The second video (The Multiple of Algebraic terms) shows us how the student teacher started the lesson very intelligently. However she covered the whole lesson without thinking about the assessment of the teaching /learning process. After that, she made an attempt for assessment. At this moment, she discovered that something wrong had happened, thus, her performance worsened when she felt some pupils did not understand the main concept of the topic. We think that it is more safe for the teacher to assess the process of teaching/learning gradually, not at the end of the lesson. Any way, the classroom reaction was very good when she tried to re-explain the topic with more attention to assessing each step.

At the same time, the lesson had some strong points, which made the observer seen to follow to the end of the lesson.

The structure of the lesson was as follows;

Discussion: about algebraic terms,  $y = y \cdot y = y^2$ ,  $(x + 5)^2 = (x + 5)(x + 5)$ .

Class work: Find  $(x + 5)(x^2 - 4x + 5)$ .

Individual work: Open your book page and solve first question, Find  $(2x + 2)(4x^2 + 2x + 2)$ .

Presentation: : Look at me, close your textbook, find  $(x^2 - 4x + 5)(x + 5)$ ?

Step1:

$$x^2 - 4x + 5$$

$$x + 5$$

$$x^3 - 4x^2 + 5x$$

step2:

$$x^2 - 4x + 5$$

$$x + 5$$

$$x^3 - 4x^2 + 5x$$

$$5x^2 - 20x + 25$$

step3:

add the results in steps 1 & 2 to get the answer,  $x^3 + x^2 - 15x + 25$ .

They found some difficulties in  $-4x^2 + 5x^2 = x^2$  and  $5x - 20x = -15x$ .

And this took a lot of time to explained to some pupils.

The time of the teacher's activities to the time of the pupils' activities can be represented by the following ratio, 14:16, which was very bad indicator for the pupils' learning. The mark of this performance was 70, which was decided upon by three evaluators. (see on the next two pages).

The third video (Volume, Surface Area, and the Whole Area of the Cone) shows us a good teacher who had the ability to deal with many factors in the lesson. She used the questioning

technique in way which allowed the pupils to be creative, beside that she used efficient visual aids at appropriate moment, which made the pupils think more and more interested in the topic.

We think that her performance was different from the others in the group of trainees. Maybe she and another trainee (first case) had their best performance during the third video.

The pattern of the lesson was as follows:

Dialogue: Determine the head, radius, and hypotenuse of the cone? What is the volume of the cone?

Discussion: suppose that we split the cone into two parts, what is the volume of each part?

Individual work: find the surface area of a cone, which has  $L= 10$  cm,  $r = 7$  cm.

Dialogue: about the whole area of a cone.

Individual work: a cone with 6 cm high and 3 cm radius, find the whole area of this cone?

Group work: solving one problem of the textbook.

The teacher's time used versus the pupils' time was represented in the ratio 10:35; which was accepted for the pre-service teacher training as a trainee. This ratio was not the best among this group of trainees; the best was 5:40 in case two.

The development of the teacher's competence becomes clear by comparing the two evaluation forms.

The final mark was (78) which was decided upon by three evaluators. One can see this mark on the next two pages by looking at the lesson evaluation form.

## Lesson Evaluation form

### Case 7 Video 2

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1 2 3 4 5 6	
2. Pre learning is adequate:	1 2 3 4 5 6	
3. Lesson concerning content: correct and specific	1 2 3 4 5 6	
4. Helping pupils in performing their tasks is related to the learning situation	1 2 3 4 5 6	
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 2 3 4 5 6	
6. Teaching/learning media are effective concerning learning achievement.	1 2 3 4 5 6	
7. Learning activities are used in a meaningful way.	1 2 3 4 5 6	
8. Achievement of learning objectives is assessed.	1 2 3 4 5 6	
9. Mistakes (content, methods, teacher-behavior, media)	1 2 3 4 5 6	
10. Guidance of the class	1 2 3 4 5 6	
11. Contact with pupils	1 2 3 4 5 6	
12. Reaction/interactions	1 2 3 4 5 6	
13. Motivation & Feedback	1 2 3 4 5 6	
14. Use questioning technique	1 2 3 4 5 6	
15. Reinforcement	1 2 3 4 5 6	

The level of satisfaction: 70.

## Lesson Evaluation form

### Case 7 Video 3

	Satisfied	unsatisfied
1. Objectives are: organized as learning sequence; explained; measurable.	1 2 3 4 5 6	
2. Pre learning is adequate:	1 2 3 4 5 6	
3. Lesson concerning content: correct and specific	1 2 3 4 5 6	
4. Helping pupils in performing their tasks is related to the learning situation	1 2 3 4 5 6	
5. Use of learning /teaching methods is pupil centered and adequate to the topic.	1 2 3 4 5 6	
6. Teaching/learning media are effective concerning learning achievement.	1 2 3 4 5 6	
7. Learning activities are used in a meaningful way.	1 2 3 4 5 6	
8. Achievement of learning objectives is assessed.	1 2 3 4 5 6	
9. Mistakes (content, methods, teacher-behavior, media)	1 2 3 4 5 6	
10. Guidance of the class	1 2 3 4 5 6	
11. Contact with pupils	1 2 3 4 5 6	
12. Reaction/interactions	1 2 3 4 5 6	
13. Motivation & Feedback	1 2 3 4 5 6	
14. Use questioning technique	1 2 3 4 5 6	
15. Reinforcement	1 2 3 4 5 6	

The level of satisfaction: 78.