# Petr Mach

# Analysis of the case studies

2010

MUZEUM HISTORII POLSKI

**Petr MACH**
Západočeská Univerzita v Plzni, Česká Republika

# Analysis of the case studies

## Introduction

Present educational system imposes high requirements on teachers of all levels. Personality development is marginalized in teacher training, mainly the development of creative abilities and skills to solve conceptual matters and dynamic changes in the educational process. One of the ways of improvement the personality and professional development is to include the case study method. The case study is basically a complex and creative solution of a given didactic situation in simulated didactic environment. It is based on interactive and situational learning and deciding.

## 1. Theoretical outcomes

Case study as a teaching method has its roots in the USA around the middle of the last century. It was used at Law faculties for reconstruction of completed trials. Later it became popular for training of managers, businessmen, politicians, physicians etc.

Case study exists in the form of descriptive or research (problem) document. The content is formed by a thorough multi-dimensional analysis of connections, elements and reality of the situation. The focus is on explicit discussion with the sense of detail and various suggestions of the solution [Merseth 1991: 243–249].

The case study concept that I use for subject methodologies has a wider and more complex notion. It can be understood as a broader participation method. Positive cooperation of all participants is vital. From the psychology of learning point of view a case study is a concrete tool of interactive and situational learning. Students are taught to solve complex interactions mainly in the realization phase of the study. Interactive learning is applied in the analytical phase, in reflection from the peers. From the point of view of situational learning it is necessary for the case studies to meet the following requirements:
– The study topic should draw on didactic reality (real subject, school).
– Should aim at a specific goal, but in multiple ways, and with creativity.
– The course and the results should have a divergent character, search for multiple solution.
– The Study should develop an entire, synthetic and contextual approach to the given topic. To process the topic from the viewpoint of subject, didactics, pedagogy, psychology, economy, ethics etc.

- In should develop in students professional individuality, teacher personality.
- The study should be held in a positive, open and constructively creative environment.

From the given requirements the basic structure of case studies results that is applied in subject methodologies. Every study must comprise:

1. Social communicative component. Participants learn to design a common activity, accept various options of behavior, seek and from contacts in the family, control cooperation, show praising feelings, analyze barriers and failures of cooperation, play different social roles, influence social-cultural values, revise mutual behavior in the group, set the social climate, use a wide range of communication tools and other factors.
2. Meta-cognitive component. It is a psycho-didactic application of meta-cognitive training. The training focuses on the area of changes in personality and cognitive preconditions of the participant – the so called inner area. Then the training focuses on the outer area – contextuality of didactic situations, influencing the conditions, choice of concepts, methods, forms, means etc.
3. Profession component. It is the development of main teacher competencies, ability to create conceptual documents, choose learning strategies. In this component the link to framework and school educational programs is important.

Case studies in this form are based on the solution of specific didactic situations. A didactic situation means a short term, finished interaction between the teacher and a pupil or pupils, or between pupils.

## 2. Complex analysis

At present there are about one hundred of video recorded case studies that have been made since 2004. It represents a sufficient database for complex analysis. Basic methods of the research were the followings – observation, transcription, analysis of video-recording, questionnaire method (mainly with scaled items), controlled interview and spontaneous account.

First I will focus on the third analytical reflective phase of the study. It is a micro-analytical activity when the system activity of the „educator" (defined in the pre-concept) is compared with the dynamic situational activity. The aim of this self-reflection is (it can be also called auto-diagnosing) is for the teacher to manage to process all the feedback information about his activity and learners activities from the course of the case study. Here processing means analysis, evaluation, identification or rejection, search for other solution and the following generalization. By the term feedback information we understand one´s own reflection, views, attitudes, and evaluation of the peers. Self-reflection is very valuable when gained through the project method, when „the teacher" carries on conversation with his image in the video-recording of the situation. For students it is usually very difficult to confront their often self-confident ideal ego with the faulty ego in the recording. When analyzing personal responses I often come across utterances such as „Did I say this?", „I never behave like that", „I would

238

never do that". In most cases these conclusions refer to the analysis of used communicative tools (verbal and non-verbal). The most frequent drawbacks are the followings: overusing parasite expressions, anacoluts, unfinished statements, wrong word order (putting interrogative pronouns at the end of the sentence), inapt gestures, etc. There are also content errors, wrong interpretation of notions, factual mistakes, grammar and spelling mistakes in writing.

It is evident from the statistics that 89% of respondents in the course of the realization phase do not check and correct their language, 60% of respondents are not able to control their activity – behavior, moving around the classroom, gestures, miming, clothes, are not able to react to the failure of teaching aids (laboratory equipment, presentation technologies) etc. They focus mainly on the subject matter of interaction.

The analysis of conflict elements solving implanted in the course of situation brought some interesting result. Almost 5% of respondents did not realize the existence of conflict elements. 20% of respondents notice the conflict situation, but did not try to solve it. They used the sublimation method risking the escalation of the conflict. Only 12% of respondents managed to aptly assess the causes of the developing conflict, articulate the attitudes and opinions of all parties and suggest and put through a procedure leading to the solution of the conflict. Others used the given rules and atmosphere in the environment and were able to get support from other participants of the study.

To describe here all the pedagogical and psychological phenomena of microanalysis is beyond the scope of this paper.

Le us focus on some of the conclusions of the macro-analysis of case studies. The most important methods in this part are observation and transcription of the video-recording of the study. The transcript of the content must be carried out manually. For the transcription the simplified Pauli, Reusser system is used [Pauli, Reusser 2002].

Only the three most important categories that were observed are given here:
- Contribution of doing case study for professional competences development;
- Choice of lesson phase (into which the didactic situation is incorporated);
- Choice of predominant form of teaching; Choice of predominant method of teaching; Using technical teaching aids (presenting and interactive technologies); Using other aids, equipment and other teaching tools; Work with time dimension; Work with the aim; Subject matter level; Language level; Motivation; Work with Error and some other less important ones.

## 3. Evaluation of some categories

First category – contribution of the case study to the professional development of the students was evaluated with a scaled questionnaire twice during the teaching period. For the first time at the beginning of the semester, when student started preparing the pre-concepts of didactical situation. 72% of respondents stated high contribution of the case study to their professional development. 5% of them expressed essential disagreement with the contribution and 9% did not have any opinion (they

could not assess the observed phenomenon). When comparing results according to gender – female students had more positive attitude (89%).

Second evaluation of the same questionnaire took place after finishing the teaching period, when all students did case studies.

Another category was the choice of the phase of a lesson – where the students put deliberately the didactic situation. It was evident from the transcription that 87% of respondents chose the exposition phase it is when creating new knowledge and skills. It From further analysis it is possible to derive that most respondents perceive teachers as providers of new knowledge. Even the results of the following category – methods used – agree with these conclusions.

The most frequent method is presentation. The frequency of choice in this method is 72%. From the following analysis is it evident that students only exceptionally accomplished this method with other supplementary methods – visualization or demonstration. Only in 5% the presentation method was extended by controlled discovery and certain problem elements. The lowest measurable frequency was shown in the problem method group. In this group brainstorming prevails (60% out of all problem methods). Summary results are in fig. 1.

From the wide scale of methods students limited their choice to the followings: presentation, problem presentation, explanation, dramatization, and didactic games, problem methods. Verbal methods prevail suitable for trans-missive teaching style.
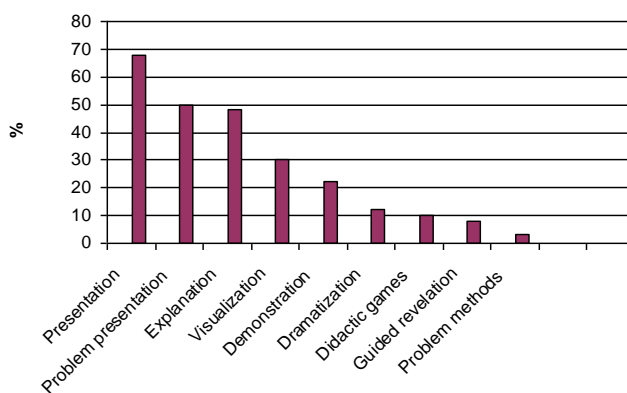


**Fig. 1. Frequency of used methods**

This fact is supported by student J.S. statements. „Until the end of the study I believed that the teacher who can speak well can teach well too. The experiencing case studies at the faculty (mine and those of other students) and some days of teaching practice I think, that it should be rather the learners who should speak and work" (record sheet no. 56). It is necessary to admit that didactic situations do not provide enough space for a wide choice of methods in when compared to teaching whole didactic units.

Choice of didactic forms. In this category there is bigger variety. Frontal forms of teaching were most frequent (68%). Others such as group work (24%), cooperative learning, pair work were also often used (fig. 2). 39% of students could radically change the arrangement of conditions – reordering desks, move to a more suitable classroom etc. Only 3% of students did not change the arrangement despite the unsuitability to the aims of the study.
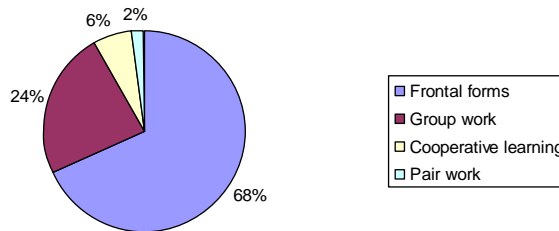


**Fig. 2. Frequency of used forms**

Using technical didactic means will be presented here. Latest presentation technology, such as PC, Data projector, audio equipment, interactive boards from various providers were available for the students. Only 23% of respondents used there technologies, mainly PowerPoint presentation. Only one student prepared a short program for interactive board. These conclusions correspond with the table of used methods (prevailing verbal methods). When observing the correlation between using didactic technologies and gender it was not proved that girls felt more negative about these technologies.

Time dimension parameter results were also interesting. Only 5% of respondents were able to estimate time properly (with regard to aims and content of the didactic situation) in the pre-concept study. They managed to keep this time also during the realization phase of the study. The others needed more time. 12% of students exceeded the given time by twice as much. These conclusions correspond with the results of the micro-analysis. 60% of students are not able to diagnose and revise their activities during the study. They do not perceive the remaining time for the planned activities.

I would like to mention here evaluation of the last phase of the case study – the phase of deferred reflection. This phase takes place more than six months after completing the case studies. Students then have their final teaching practice. After completing it I meet them once again to analyze the contribution of case studies to their professional development and development of didactic competences now with the reflection of their real pedagogic activity. I go back to the category of contribution of case studies to their practice. At the beginning of their teaching practice, 72% of students claimed case studies are very likely to

contribute to their professional development. From the analysis of responses it is evident that almost 100% of them changed their statement and claimed that completing case studies (their own or participating in those of other students) considerably helped them manage the role of the teacher and cope with various problems of teaching Only one student stated that case study did not help her.

## Conclusion

The number of respondents of my research does not allow to provide any generalizing conclusions. Also the methodology of verifying the validity of questionnaires was not perfect. Nevertheless the results provide some information. Case studies definitely contribute to creating key pedagogical habitudes in students. Students often fail to use modern methods and approaches in teaching. They know these theories only theoretically. Being exposed to the specific pedagogical reality they easily adopt traditional pragmatism and classical style of teaching.

When searching for similar attempts of modern approach to teaching subject methodologies, I appreciate a very inspiring research in the field of Teaching Technical Subjects at Technical University in Ostrava. Teaching and research is more focused on development of creativity in teacher trainees using microteaching and case studies. Results and conclusions obtained by M. Miklošíková [2009] within the „CR program" (program for support and development of creativity in students of Teaching Technical Subjects program) are in many respects similar.

## Literature

Merseth K.K. (1991), *The early history of case-based instruction: Insights for teacher education today*, „Journal of Teacher Education", 42(4), 243–249, EJ 438 532.

Miklošíková M. (2009), *Kreativita a učitelství odborných předmětů*, Ostrava: Technická univerzita Ostrava, ISBN 978-80-248-1952-5.

Pauli Ch., Reusser K. (2002), *Transkriptionsmanual für das Videoprojekt Mathematiklernen und und Mathematikleistungen in unterschiedlichen Unterrchtskulturen*, Zürich: Universität Zürich.

## Abstract

This paper described one of the ways of teacher's improvement the personality and professional development is to include the case study method. The case study is basically a complex and creative solution of a given didactic situation in simulated didactic environment. It is based on interactive and situational learning and deciding.

**Key words:** case study method, teacher's education

# Analiza przypadków w kształceniu nauczycieli

**Streszczenie**

W tym artykule opisano jeden ze sposobów badania osobowości nauczyciela i jego rozwoju zawodowego na podstawie metody analizy przypadków. Badania te są w istocie kompleksem i twórczym rozwiązaniem danej dydaktycznej sytuacji w zadanym środowisku dydaktycznym. Ich istotą jest interakcja i konkretna sytuacja związana z nauczaniem i podejmowaniem decyzji.

**Słowa kluczowe:** analiza przypadków, kształcenie nauczycieli.