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TEACHING COMPETENCES AND THEIR DEVELOPMENT VIA VIDEO-RECORDING

Abstract. Mach Petr, Krotký Jan, *Teaching Competences and their Development Via Video-Recording* [Rozwój kompetencji nauczycieli poprzez wideo]. Studia Edukacyjne nr 28, 2013, Poznań 2013, pp. 345-362. Adam Mickiewicz University Press. ISBN 978-83-232-2731-1. ISSN 1233-6688

The article deals with use of case studies for professional preparation of teachers to be. One of the suitable ways to develop professional teaching competences is to apply the method of a case study. A case study means a complex and creative solution for a given teaching situation in simulated teaching conditions. It is based on interactive and situational education and decision taking. A case study improves not only professional and teaching competences for becoming teachers – it also fulfils the task to develop at students their auto-evaluating and auto-reflexing skills. To increase professional competences it is mandatory to do a complex analysis of the video-record for the implemented study. A complex analysis is a subject of the research project of a student grant agency at the University of West Bohemia in Pilsen.

Key words: case study, teaching competences, auto-reflexion, education research, complex analysis

Introduction

From the middle of the last century, European education undergoes significant changes. This evolution is a result of society-wide changes of European even global character. Processes of integration and economical globalisation, migration, mixing cultures and religions, alterations in social value systems etc. evoke needs to innovate the area of professional preparation of teachers-to-be during their pre-gradual studies beside other needs. A process to prepare future teachers for their career has got a three-level system. First, professional teaching competences are to be gained during bachelor studies. Then students develop their knowledge, learning and skills especially from pedagogical and psychological disciplines in follow up master studies. These

follow up master studies include all subjects to complete a profile of future teachers. Therefore there is only a certain amount of lessons left to develop required didactical competences.

One of the ways to improve professional and personality traits of students of education is to use a case study method. The case study method referring to didactical / teaching situations and the method of video-studying teaching units were implemented at the department of mathematics, physics and physical education. The mentioned innovative processes are solved as a part of a research work at the department. Effects of the case study method to the development of teaching competences were included into a solution of the project from GACZ no. 406/07/0109. The video-study method is a subject of a student grant system at the West Bohemian University in Pilsen. The project no. SGS 2012 – 074 is called: "*The ways of communication in education and their psycho-didactical aspects*". The project was done by academicians and students during their lessons of subject didactic sand it was a part of the result of teaching practice too. We will try to clarify both of the methods and their use for developing teaching competences.

A Case Study of Didactical Situation

Case studies as a teaching method started to be used in the USA in the middle of last century. Law faculty students were discussing reconstructions of closed cases and trials. Later on, this method was transferred to the area of professional preparations of managers, salesmen, politicians, doctors etc.

A case study was in a form of a descriptive or problem document. Its content consisted of a detail poly-dimensional analysis of connections, items and reality of the situation. The emphasis was put on an explicit discussion with a sense for details and various proposals to reach a solution.[1]

The main rules of a case study were defined and can be used in other areas too, for example in education:

a) commitment of participants – active involvement of all potential participants

b) support – finding and eliminating all barriers to cooperation

c) planning – gathering sources, information, schedule creation

d) suitable methodology – using wide range of methods

e) information transfer – optimal share of information among participants

[1] K.K. Merseth, *The early history of case-based instruction: Insights for teacher education today*, Journal of Teacher Education, 1991, 42 (4), p. 243-249.

f) cooperation – effective collaboration and cooperation among participants

g) application – developing skills, knowledge and self-confidence at all participants

h) feedback – evaluating the result and cooperation of committed participants

i) monitoring and evaluation – checking and evaluating the outputs according to the requests, standards etc[2].

The concept of case studies, used during the subject didactic lessons, has got a larger and more complex approach. We interpret it as a larger participating method. From the point of psychological view, a case study is a specific tool for an interactive and situational teaching. The students learn how to solve complicated interactions which appear especially during the implementing stage of the case study. An interactive teaching is significantly applied in analytical stage too, at the moment of reflexion from class mates. From the point of situational teaching view, for a case study is necessary to meet the following requests:

– a subject of a study should be based on didactical/educational reality (a real subject, a school)

– it should fulfil a specific goal, but in a certain diversity, creativity

– its process and results should be a divergent character, researchers should not look for any unique absolute right solution

– a study should develop a holistic, synthetic and contextual approach for the given topic, it should handle the topic from all sides: professional, didactical, educational-psychological, economical, ethical etc.

– the professional individuality and teachers personality should be developed

– a study should run through all the three stages in a positive creative climate, conditions.

Based on the above mentioned requests follows the revised structure of case studies. Each study must include three basic components, see bellow:

1. A social communicative component. Participants learn to propose common activities, to accept different ways of dealing, to find and make contacts in a group, to cooperate, to manage the cooperation, to explicit positive feelings, to analyse obstacles and barriers in cooperation, to play different social roles, to influence social cultural values, to alter behaviour and relations within a group, to regulate social climate, to use a wide range of communication tools and many other factors.

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[2] C.F. Herried, *What Makes a Good Case?* Dostupné na http://ublib.buffalo.edu/libraries/projects/cases/teaching/good-case.html.

2. A metacognitive item. It is actually a psycho-didactical application of a metacognitive training. The training is focused on the area of personality changes and cognitive abilities of a researcher – so called internal area. The training is focused on an external area too – the context of teaching situations, influence on conditions, choice of conceptions, methodology, forms, tools etc. While working on a case study, it is mandatory to follow the principles of a metacognitive training as stated below:

– A principle of processuality (better focus on the process itself than on its result).

– A principle of reflexivity (development of own cognition, learning, thinking, auto-instructing, self-strengthening, self-evaluating, using the processes of interiorization and exteriorization on the first place).

– A principle of generativity (to develop skills of elaborating, sorting, categorizing, transforming, doing all of that according to the aim of the research).

– A principle of affection (empathy and motivation preparedness, combination of a cognitive and an attitudinal item).

– A principle of regulation (to alter the processes according to given goals and conditions and according to its reflexion).

3. A professional item. It means developing the main teaching competences, abilities to create conception documents, to choose teaching strategies. It is about to formulate and create tools, forms and teaching aids for a lesson and its study. Framework educational programme relations and school educational programme relations play a significant role for this item.

A case study of a teaching situation is understood as a complex and creative solution of given (or selected) teaching situation in a simulated teaching circumstances. It is actually a short-term interaction between a teacher and pupils (or between own pupils). A teaching (didactical) situation must fulfil basic characteristics:

– its content must be closed, it must have a logical structure,

– its process must be closed, the study shall take only several minutes to fill its content (about 10 minutes),

– its ways of solutions must be obvious, it must use a proper methodology and teaching forms,

– each student must provide or create all material tools and equipment needed.

A Case Study Implementation

This way approached case studies are based on solving specific teaching situations. A teaching situation is understood as a short-term and closed interaction between a teacher and a pupil (pupils) or between pupils. It takes

place in the defined conditions which have a positive effect on the interaction. The conditions are usually simulated. Case studies are usually set in general or specialized classrooms of the faculty. Only on extraordinary occasions, the implementation part is situated into a natural area – a real school, on location, in a laboratory etc. A content character of a teaching situation can be either cognitive or affective or sensorimotor (psychomotor). The subject of the situation can be either chosen by a student or given by his educator. Each student then continues his way, modifies conditions, he selects methodology, forms and tools needed for finding a solution to the situation and to all the case study.

A case study is managed by an educator (a faculty teacher). Its progress consists of four basic stages. The stages are:

a) Choosing and preparing the teaching situation. Creating a pre-concept – expected flow of the teaching situation and of all the case study. The student writes down definitions of conditions, teaching tools, methodology, communication tools. He estimates behaviour and reactions of his pupils and of himself as well, he thinks through the ways to achieve required conditions. This way his main professional, teaching and psychological competences are improved and developed.

b) The second stage is implementing. It is based on teaching via experience. Colleagues of the student ("teacher") play the role of "pupils" of the school, class. They have to identify with their psychic, mental level, behaviour and expert knowledge. The lesson flow is recorded by a video-camera. The point is a type of video-stimulation. The camera does not make a passive recording only. It is necessary to record all important moments of student's activities acting "*the teacher*" as well as of other students "*pupils*". It is needed to catch the details of positive and negative activities and behaviour of all participants. HONZA The implementation stage takes about ten minutes. Some disturbing elements can be on purpose inserted (stage managed by the educator) into the situation. Ordinarily those are the elements of extraordinary behaving pupils (back talking, arrogance). These non-standard elements in the teaching situation must be solved by "the teacher" through his decisions. The success of all the case study is directly dependent on the true identification with roles of "the pupils". The better "the pupils" manage to make up conditions really close to a real classroom, real lesson and a real subject of a school, the more they press "the teacher" to perform and behave more realistic and lifelike.

c) The third stage is analytical. Especially metacognitive items are utilised in this stage. Based on the auto-evaluation, the students try to cover all important moments of their role as a teacher (in both, positive and negative, senses). This is followed with a reflexion and evaluation of the other participants in

the study case – colleagues in roles of pupils. The results are then analytically compared and confronted with the taken video-record. This stage is very demanding not only for the students but for the educator too. Its results effect success of all the case study.

d) The fourth stage is auto-reflexion. Auto- or self-reflection is an issue of each individual student. Coming out of the results from the previous stage, the student alters and changes the original study concept. Based on the total analysis, self-reflexion and expression of the educator, the student completes his original pre-concept. This way is created a post-concept of the case study. The most important part of the post-concept is a written expression of self-reflexion evaluation by the student. The student expresses through his written words the self-awareness of his didactical performance and the analytical interpretation of projection of his experience, activities and gained practice.

Case studies are used not only as a method to develop teaching competences. It is also a subject of research activities at the Faculty of Education in Pilsen, technical education department. The initial research of this issue of case studies was carried out as a part of solution of grant project no. 406/07/0109 called Nonverbal creativity at technical education.

Basic methods of research used in our case are observation, watching, transcription and analysis of video-records, questionnaire method, guided interview and spontaneous answers of respondents. Altogether a hundred of video-recorded case studies of teaching situations were included to a complex analysis. The analysis is made on two levels – on the level of macro analysis and on the level of micro analysis.

The subjects of macro-analysis are (below are listed only the major categories):

– choice of the part of the lesson (when is the teaching situation implemented),
– selection of the dominant form of teaching,
– use of technical teaching tools (presentation and interactive techniques),
– use of tools, machines, equipments and other aids for the lesson,
– work with time dimension,
– work with the goal,
– professional level,
– language level,
– motivation,
– work with error,
– contribution to professional competences development and several other less significant categories. The most important methods in this part of

analysis are observation and transcription of the video-record of the study. We use a very simplified system of the authors Pauli, Reusser for the transcription[3]. Detailed complex analyses can be found in a publication Mach, Janíková[4].

See below evaluated some of the major categories:

The first category – contribution of a case study to develop professional skills of the students was evaluated through a scale questionnaire twice during the lessons. For the first time the questionnaire was given in the beginning of the semester when the students started to prepare pre-concepts of the teaching situation. 72% of respondents mentioned a high probability of positive contribution of the case study to their professional increase. 5% fundamentally refused any contribution and 9% did not express themselves (they did not manage to assess the observed phenomenon). When comparing the results according to the sex – more positive approach came from student-females (89 %). The second time the same questionnaire was given after the students passed their teaching practice. The following evaluation showed that 95% of respondents found it high contributed for developing their teaching competences.

The next category was to select the right stage of the lesson –into which part of the lesson the students placed the teaching situation. The transcription demonstrated that 87% of probands elected exposition stage, which means teaching new knowledge and skills. From the further analysis it follows that most of respondents consider a teacher as a bearer of new knowledge. This conclusions correlate with the results of the following category – used methodology. Interpretation is the most frequent used method, which was selected by nearly 70% of participants. The analysis results that the students used other methods to add only by the exception – visualization or demonstration. Only 5% added to the method of interpretation a managed discovering and certain problematic elements. The smallest frequency appeared with the method group of problems. Brainstorming then dominates in this group (60% share from all problem methods). A wide range of various methods was limited and shortlisted by the students to: lecture, problem interpretation, explanation, dramatization and didactical games, problem methods. The verbal methods are on the top as they suit the transmissible teaching style.

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[3] C.H. Pauli, K. Reusser, *Transkriptionsmanual für das Videoprojekt Mathematiklernen und Mathematikleistungen in unterschiedlichen Unterrchtskulturen*, Zürich 2002.

[4] P. Mach, R. Janíková, *Analysis of the Case Studies Video Recordings*, Computer and Information Science, 2012, 5, 6, p. 98-104.

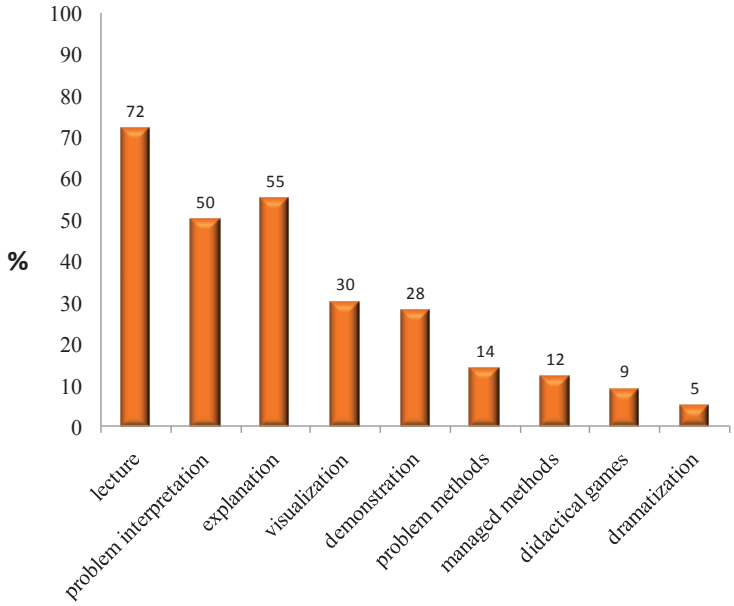

Fig. 1. Graph of frequency of the methods used

The selection of didactic forms. There is a more visible variety in the category. A frontal form of teaching appeared most often (68%). Quite frequent were also other forms – team cooperation (37%), cooperative lesson, pair work. 39% of students achieved to completely change the conditions preparation – school desk alteration, transfer of the lesson to a more suitable classroom etc. Only 3% of students left the working seat order in the classroom as it was, however it was unsuitable for the study goals.

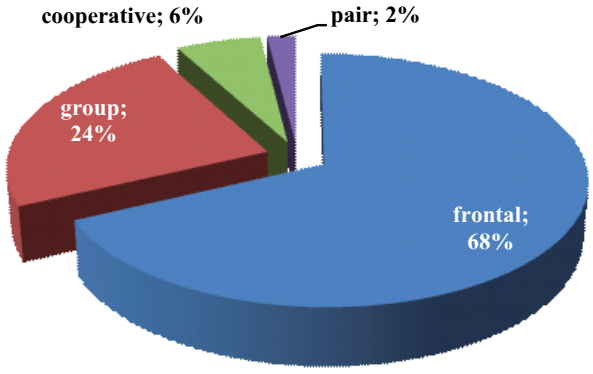

Fig. 2. Graph of frequency of the forms used

I would mention another category – use of technical teaching tools. The students got available the newest modern technology, a PC, a beamer, audio equipment, interactive board by various producers. Only 23% of respondents used this technology, most of the time just for the application of the teaching presentation in PowerPoint. There was just one female student who prepared a short teaching programme for the interactive board. These conclusions are aligned with the table of the used methods (prevailing verbal methods). While watching the correlation between the usage of didactical technology and sex, there was no proof that the females would have poorer relationship with this technique.

Another interesting thing was the parameter results of time dimension. Only 5% respondents succeeded while estimating the time demand (considering the aims and content of the teaching situation) in a pre-concept of the study. They were able to follow the timing in a stage of realization too. All others then overran the time given. 12% of students exceeded it by more than double time. These conclusions tally with micro-analytical results. 60% of students fail in diagnosing and managing their activities during the realization stage. They even do not take note of time left for making their planned activities.

Continuing, we will focus on a microanalysis of the studies records. We concentrate especially on interactions between "the teacher and "the pupils" (between "the pupils" as they change quickly. Social-psychological conditions can be seen during the implementation stage when there is an oscillation between a system and situation solutions, considering professional-subject, teaching/didactical and external contexts. Those get visible due to the way of communication and the choice of communication tools. An auto-diagnosis is an important part of microanalysis. We make effort to lead students to a role of "*the teacher*" and to make them able to use all feedback information about their activities and pupils´ activities from the case study. It means some analysis, evaluation, identification or rejection, searching an alternative solution followed with its generalization etc. Students are taught to use auto-reflexion this way. Special sources state several concepts of auto-reflexion regarding teaching profession. A conception described by J.Smyth is the most suitable one to meet our goal[5]. All four of his stages are used:

- description (pre-concept and study implementation)
- explanation (analytical part)
- confrontation (analysis and comparison with the video-record)
- reconstruction (post-concept)

[5] J. Smyth, *Teachers' work and the politics of reflection*, American Educational Research Journal, 1992, 29, p. 267-300.

In most cases, results of auto-reflexion are related to communication tools used (both-verbal and nonverbal). The most frequent non-conformances are:

- high use of fillers, anacoluthons
- incomplete messages
- incorrect syntax (placing interrogative pronouns on the end of sentences)
- inappropriate gestures and facial expression
- minimal use of class space (proxemics)
- imbalance between verbal and nonverbal expressions etc.

The auto-reflexion, gained via project method, is very valuable as "the teacher" makes a dialogue with his image from the recorded situation. It is usually very difficult for students to confront their oftentimes self-confident idealistic me with error-making me in the video-record. The analysis shows especially lacks in use of communication tools (both, verbal and non-verbal). The most frequent non-conformances are: high use of fillers, anacoluthons, incomplete messages, incorrect syntax (placing interrogative pronouns on the end of sentences), inappropriate gestures etc. Quite common are also errors in content of messages, incorrect use of terminology, factual and grammar errors in a written form. Statistics disclose that during the case study implementation 89% respondents do not control their language at all which means they do not even adjust their speech, 60% respondents cannot adapt their activities effectively – behaviour, moving in a classroom, gestures, facial expression, clothing, they are not able to react immediately to disorders of material teaching tools (laboratory and measuring techniques) etc. They focus primarily on a question of fact side of interaction.

Interesting results came from the analysis solving conflict elements implemented into the situation. Nearly 5% of respondents did not realize at all the existence of conflict elements. 20% respondents did notice conflict situations nevertheless they tried to avoid their solution. They used a sublimation method although despite the possible risk of further escalation of the conflict. Only 12% respondents managed to consider reasons of coming conflict, to define approach and attitudes of all participants and to propose and follow the steps to get the conflict solved. They used given rules and conditions and achieved support from all other study participants.

Dialogues and written responses were analysed and confirmed previous conclusions. Most of respondents (students) worry about a facilitated teaching style and that corresponds to their method of communication. They are worried about excessive empathy, about being too open to pupils. A contrary directive style is for 66% respondents certain protection from

their own imperfectness and from an inappropriate behaviour of pupils too. Only exceptional cases show students in self-reflexion to realise problematic of directive communication style.

Video-Studies of Teaching Unit

A case study of a teaching situation offers big opportunities for a high quality preparation of teachers-to-be. However, it also has its barriers. Each study works with a short stretch of time only. It is implemented in a simulated conditions and a direct contact to school conditions is missing. Social interaction with adult "pupils" varies significantly from a similar interaction with real pupils (pubescent). Positives of a case study of a teaching situation can be seen especially in its possibility of careful preparation (creation of a pre-concept). Other advantages can be found during a stage of analysis, reflexion and auto-reflexion. A detail analysis is used to discover both weak and strong points of "*teacher's*" activities, to improve key teaching competences. Comparison of the experienced activity with a video-record makes a strong emotional background. It is generally known that teaching connected to strong emotional experience (especially positive one) is maximally effective.

Let's focus more on a video-study method now. Video-studies have been used as a tool in an educational research since in the mid-nineties. International comparative researches from natural science (mathematics etc) became the most famous, so called TIMSS – Trends in International Mathematics and Science Study. Similar information about the methodology of research and results, conclusions can be found on a TIMSS web page[6]. Anyway, a video-record of a teaching unit may not be just a part of an educational research. We see a big potential in its implementation into teaching practices. There is a realistic application of a video-record of a real lesson during lectures of subject didactics. It can be used as a demonstration of all didactical phenomena – from a structure and lesson stages, through working with target categories to communication tools and types.

The idea of integrating student to take video-records as well as to their analysis became a solution for the above mentioned two-year project which was carried out within a student grant system at University of West Bohemia in Pilsen.

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[6] *Trends in International Mathematics and Science Study (TIMSS)*, Washington Q, Available from: http://nces.ed.gov/Timss/video.asp. [cit. 2013-02-14].

The investigation team was formed in 2012. The members were academic workers from Psychology and Mathematics, Physics and Technical Education departments and master programme students studying subjects of technical education and psychology. The project no. SGS 2012 – 074 is called Ways of communication in education and their psycho-didactical aspects. The project is focused comprehension of pupil's problematic with teaching processes and teacher's teaching strategies. Outputs of the project will lead firstly to a better comprehension of teaching processes for pupils (students of Teaching at the Faculty of Education) highlighting communication ways and tools. The second level of outputs is hidden in evaluation of psycho-didactical aspects of teaching, communication etc. in all stages of a teaching unit. Gained results will be included into innovation of subject didactics lectures.

Targets and Methods of Research

There were three major targets defined by the investigation team.

1. Check whether and how the teacher and his approach in lesson influences learning of pupils

2. Compare effects of directive or non-directive ways of communication on understanding the subject matter.

3. Find out whether open communication supports the constructive teaching conception, higher autonomy of a pupil,, creativity, the use of own experience and authentic activities of a pupil.

Targets were worked out into basic questions of the research:

– To what extent does a teacher use during lessons communication based on empathy, two-way in respect and tolerance?

– To what extent does a teacher develop creativity and curiosity of pupils?

– To what extent did a teacher allow pupils to use their own experience?

– To what extent did a teacher take advantage from a team cooperation of pupils?

– To what extent does a teacher support pupils´ autonomy in a teaching process?

The qualitative and quantitative analyses of the video-records taken are used as the main research methods. The academic part of the investigation team from the Psychology department worked out the first version of observation report. Students use the report to analyse video-studies. The articles of the observation report are divided into three groups based on the mentioned research questions:

1. Communication based on empathy, two-way respect and tolerance.
2. Communication supporting curiosity, creativity and cooperation of pupils.
3. Communication supporting pupils own experience and autonomy in the process of educating.

Altogether, there are 33 articles in the report. With a detail look at each item, there are visible similarities to a report by a Slovak educationalist P. Gavora[7]. His report is, however, primarily dedicated to analyse school conditions according to prevailing interactions. Another publication by this author – Teacher and pupils in communication[8] – could be a better source for arranging the observation protocol.

Selection of Respondents

The investigation team selected for the first stage of project students of subjects technical education and psychology. The choice was limited by rules of the student grant competition. Even more complicated was to choose suitable teachers to record their lessons. The shortlist included either experienced teachers with a long teaching practice or teachers beginners. Our effort was to persuade the teachers to let their lessons flow without any special alterations for recording. It was sometimes complicated to deal with legislation at some schools (obtaining agreements from legal representatives) because of taking video-records of minors. The aim of the investigation team was to get video-records with balance on both areas – technical and science subjects versus psychological and social subjects. We tried to do recording at primary, secondary and high schools. The trial consists at the moment made 15 video-records taken at twenty schools. The experience of teachers spreads from one to ten years. It was also intention of the project to unite it with a teaching practice. We expect that about ten students from the investigation team will allow recording their lessons. Students will absolve those lessons as a part of their output teaching practice in this summer semester. This way, students will play a double role – first as a respondent of the research (their lessons will be recorded) and as an investigator (with possibility to evaluate own lessons too). This auto-reflexion makes a promise to get a larger comparison of the results coming from its analysis. The final number of video-records can get up to fifty.

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[7] P. Gavora, *Výzkumné metody v pedagogice*, Brno 1996.
[8] P. Gavora, *Učitel a žáci v komunikaci*, Brno 2005.

Influence to Research and Video-Data Obtaining

Case studies implemented by students supported by teacher-educator in simulated teaching situations are to serve especially to evaluate lessons of a certain student. The project of a student is based on shooting a video-record of a real lesson at a participating school. Therefore the roles of researcher-observer and cameraman are separated. The foreign element presence in a form of cameraman and cam-recorders can cause several complications during a real lesson as behaviour of pupils and teachers can vary.

A transformation into so-called model lessons, which means lessons influenced by a special preparation of a teacher-to-be-recorded or cameraman and equipment presence, it is a general problem for all video studies. Stigler[9] states:

> The target is to record a real lesson the way that it would seem the same without video-recorders presence. The teacher is aware of recording however, "he cannot arrange any special preparations or try to perform the lesson before it is recorded.

Any presence of a video-cameraman or only a video-recorder may have a negative effect to the style of lesson management and reactions of all participants. Stigler describes this phenomenon as a "*camera effect*". The teacher either tends to demonstrate a model lesson or a lesson with no conflict or simple topic. Such a type of issue is often commented during the interpretation of video-research results. Research workers make efforts to recognize possible influence of the phenomenon to the research, adding a questionnaire for the recorded teacher. However, the results coming out of such a method show only a small percentage of the possibility that the lesson was adapted and influenced to be recorded. Most of teachers state that it is their classical lesson[9]. A CPV video-study from 2004 by Tomas Janik, Petr Najvar and their team confirms these results[10].

The teacher is aware of a stranger joining the lesson and is worried about potential critics as the stranger is often even a person with educating competences in the role of an observer or video-cameraman. It can sometimes happen already when the video-equipment is installed. That idea is confirmed by Zounek too, stating that "*an independent observer joining the lesson can be felt as risky*"[11]. Other teachers tend to justify themselves when at the feeling of failing

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[9] J.W. Stigler et al., *The TIMSS Videotape Classroom Study: Methods and Findings from an Exploratory Research Project on Eighth-Grade Mathematics Instruction in Germany, Japan, and the United States*, Washington DC 1999.

[10] T. Janík et al., *Pohledy na výuku fyziky na 2. stupni základní školy: souhrnné výsledky CPV videostudie fyziky. Orbis scholae*, Pedagogická fakulta, 2008, 2, 1, p. 54.

[11] J. Zounek, K. Šeďová, *Jak zkoumat ICT v každodenní práci učitele aneb videostudie jako kvalitativní metoda. Orbis scholae*, Pedagogická fakulta, 2008, 2, 1, p. 12.

the educating situation. It is worth to motivate the teacher before recording to avoid these effects and to make him sure that the recording will not be published anywhere, will stay anonymous and will be available only to certain research workers. Motivation could be selected in a form of financial refund too. Our experience confirms that this is an important fact for teachers too. Especially at this time, as also Stigler states[9]: "*It´s not easy to find a teacher who would let anybody record him…*"

Therefore we have selected for our project of video-recording the following type of people: no teachers but students of technical field, teachers of technical education with basic knowledge of education and minimal experience. That way the teachers are not in stressed by a professional educator who could "lecture them" later on. This was considered to be a good choice as our goal was to obtain a high quality records with a minimal disturbing at the lesson or taking attention of the teacher as a professional away. Each teacher gets his own records as a part of the project and it is only his decision whether he would use it for a self-evaluation. At this point we can rely on experience from a video-study of Zounek and Sedova[12] who recommend to persuade the teacher to take a researcher in the role of cameraman as "*an innocuous stranger who is interested in everything what he can see at school…*".

The presence of a cameraman or recording equipment can have some impact on teacher as well as on behaviour of students. The results of questionnaire to the CPV video-study from physics lesson highlight also the view of the teacher impacting pupils when the recording equipment is present. "74% of pupils behaved the same or similar way like during other ordinary lessons"[13].

Speaking from experience, pupils pay the most attention to a camera immediately after the lesson starts. As soon as a cameraman entries the classroom, pupils keep asking what will happen, what will be recorded, some of them can even refuse to be recorded etc. In this stage, it is good to make a contact with pupils and make them ready for recording. It is also technically important to get to a recording point in time. That is not only to prepare the equipment but especially to build a relation with the class and the teacher. Pupils, especially boys, are interested and show their interest in recording equipment. As soon as a video-camera is unpacked, they ask about parameters, want to try a tripod control etc. We met success when we introduced our goals at the beginning of the lesson and re-assured them that no shot will be published on any social networks or Youtube. There are recommendations

[12] Ibidem.

[13] T. Janík et al., *Pohledy na výuku fyziky*, p. 54.

for cameramen of video-study given by Western Carolina University[14]: "*share all information with your students, why you recorded them, and make them even available to see the video-record*".

It is always better to record more lessons with a class. Pupils will pay less attention to cameraman activities then[15]. A research implemented in Waikato "*did not prove that recording disturbs the lesson flow*"[16]. The writers of the CPV study of physics lesson come to the same conclusion too. They base it on results from their questionnaire research "*… a video-camera presence mostly did not affect the lesson*" [17]. However, we can say in general that any foreign element may disturb the lesson and it is important for a research worker to consider a certain level of influence. The right behaviour of experienced video-cameramen will provide video data with a minimal effect.

Intermediate Conclusions

Eight video-records were analyzed by a part of the investigation team according to the above mentioned report. Most of the report articles watched especially communication items between a teacher and pupils. Fewer articles were dedicated to teaching aspects (methods, forms, tools). No article was focused on content (goals and teaching material) or professional level of lessons. The report is completely missing quantitative indicators, e.g. frequency of phenomenon, time etc. Intermediate conclusions demonstrate that teachers of technical education use mostly directive, executive style of educating while teachers of psychology use more facilitated style of educating. An interpretation of intermediate conclusions gets then too much into division of teachers and students of technical education and psychology according to a typology given by Fenstermacher[18]. The interpretation of intermediate conclusions will need further review.

Therefore it is necessary to adapt the method of analytical part for other stages, at least to add a quantitative part into the observation report. Also expanding the analysis by participative observation methods would meet the request for source triangulation, which is one of the conditions to get a good

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[14] *Videotaping information for student teachers and interns*, Western Carolina University, 2012-20-07 [cit. 2013-01-10]. Dostupné z: http://www.wcu.edu/WebFiles/PDFs/OFE_Video_instructions.pdf; Available at*:* http://www.wcu.edu/WebFiles/PDFs/OFE_Video_instructions.pdf

[15] P. Najvar, T. Janík, *Videostudie ve výzkumu*, p. 21.

[16] K. Otrel-Cass, C. Bronwen, M. Maguire, *Taking video cameras into the classroom*, Waikato Journal of Education, 2010, 15, č. 2.

[17] T. Janík et al., *Pohledy na výuku fyziky*, p. 54.

[18] G.D. Fenstermacher, J.F. Soltis, *Vyučovací styly učitelů*, Praha 2008.

qualitative evaluation). It is mandatory to highlight level of pupils´ knowledge and skills as these can reflect the level of educating (teaching) style of the teacher. An additive method could be partially a structured interview with a teacher, alternatively with the students who helped to do video-recording. Results of the analysis could be later compared not only according to the Fenstermacher typology but also according to others, e.g. Schulman typology[19]. This altered method could be also applied on video-studies which will be recorded during the following stages of the project.

Conclusion

From the research follows that case studies are definitely contributing in the process of forming key teaching skills of students. Given conclusions are only partial and cannot be generalized. The research will be finalized in December of this year and will give space for final conclusions yet. While looking for similar efforts for modern approach to tutoring subject didactics, an inspiring research of education area was discovered at the Technical University in Ostrava. Though, there education and research are supporting more teachers-to-be creativity using micro-teaching and case studies. The results and conclusions found by M. Miklošíková[20] during "*CZ programme*" (programme for supporting and developing students creativity at Education of professional subjects) have got much in common.

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