Research Paper Education

Interaction Teacher – Pupil within Teaching Attempts of Physical Education Students

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ABSTRACT

A significant role in educating pre-service P.E. teachers plays instruction in special didactics of respective sport subjects. Within the framework of it students undergo their first teaching attempts. In order to evaluate didactic interaction "teaching student – pupil" in them the method "Analysis of Didactic Interaction" was adjusted by decreasing number of observed categories and by aiming the entire focus exclusively at the teaching student. The goal of this contribution is to demonstrate method „Modified Analysis of Didactic Interaction". Results proved the effective usability of method for purposes of students teaching attempts assessment under different conditions of individual and team sports, as, e.g., sports games, gymnastics, swimming and skiing and the possibility of successive influence upon quality of acquired didactic skills.

Keywords : analysis of didactic interaction, students teaching attempts, P.E. instruction

Introduction

The instruction of P.E. didactics at Charles University FTVS is broken down into bachelors as well as successive master studies. Students gradually acquire elements of skills in subjects as track and field, gymnastics, sports games, swimming, technical and combat sports as well as in three kinds of outdoor activities – skiing, canoeing and sport tourism. Backgrounds of these sports are then followed by instruction their didactics in which, beside other, students acquire teaching experiences during teachings attempts, lasting about 20 minutes usually. Given teaching subjects are then fostered by theory in the subject "School Physical Education Didactics," which tops the knowledge obtained from psychology, pedagogy and didactics of P.E. Students undergo also running teaching practices as well as a block pedagogic practice at primary and secondary schools, where they conduct P.E. lessons under the supervision of assigned lecturers.

There are various methods used to assess their teaching attempts. One of the evaluated factors is the teacher – pupil interaction. For the assessment of this interaction were used the method „Modified Analysis of Didactic Interaction"- MADI. The method itself was developed at the Department of Sports Games of FTVS, Charles University (Süss & Marvanová, 2009).

In the world, mainly from sixties decade last century up today, it would be possible to quote many references dealing with observation and analysis of P.E. teacher behaviour when in contact with pupils. It is possible to talk about systematic research effort to penetrate ways and operations in the P.E. instruction. Using permanently more and more elaborated methods and their combination enable to record and describe activity of teachers, their interactions with pupils, to discover specific features of physical education lessons comparing to lectures in science subjects, to collect information about verbal and nonverbal communication or to study relationships among various phenomena in teaching.

In the Czech Republic, following almost twenty years long effort the new standardized method of didactic interaction analysis – ADI (Dobrý, Svatoň, Šafaříková & Marvanová, 1997) was finalized and published. However also other methods were developed and used, like, e.g., systematic observation of an interaction – SPIN (Svoboda & Kocourek, 1987), categories assessable system of a video record - KPSV (Jansa, 1981), or systematic observation of an interaction with the use of PC (Mužík, Uhlíř, 1989).

Method ADI and its modified format MADI are used, beside practice, also for elaboration of concluding theses. A lot of this were compiled with the use of both methods. They dealt both with analysis of highly as well as less experienced teachers and coaches or future pedagogues.

Goal

The goal of the contribution is to present method MADI and its using for assessment of teaching attempts of FTVS students under different conditions of team and individual sports, as they are sports games, gymnastics, swimming and skiing.

Methodology

Observed samples

Sixteen students of a successive master program on FTVS UK voluntary took part in the study. In school year 2012/13 all of them completed didactic courses of sports games, gymnastics, swimming and skiing. Using completed records of their teaching attempts 4 students in each subject were randomly selected. Mere 10 minutes out of each full and finally analysed.

Methods

Every student was monitored by means of video camera and digital voice recorder. Records were transcribed in 5 seconds intervals into the MADI computer programme.

The study has character of descriptive research based on observation's quantification by the help of the categories system MADI. This system was developed on the basis of the method Analysis didactic interaction (ADI).

The first category aimed at the forms of teacher behaviour was kept without any change. Second and third categories were not included into this reduced version, for the role of pupil or group of pupils in a function is not used in students teaching attempts. The others categories were simplified to

facilitate a fast execution of record of students teaching attempts and to give actual feedback information them.

Description of categories

The first category deals with forms of teacher behaviour. It contains 10 subcategories: instruction, correction, feedback information, observation, announcement, inquiry, reception, judging/evaluation, participation and vague situation.

The fourth category follows teacher expressive means. They are: verbal, verbal and motor combined, motor and silence combined, nonverbal acoustic, silence and other subcategories to which we incorporate the other forms of a teacher's expression.

The fifth simplified category is divided into two subcategories. The first refers to recognition whether a teacher's expression possesses factual significance or not; the second one determines a teacher attitude activity by allocating it to either neutral or emotionally moved, the latter being integrative or dominant.

The sixth category related to a kind of activity being the subject of didactic interaction has three subcategories: learning activity, organizational activity and other activity containing all other without didactic significance.

Seventh and eighth categories deal with pupil or group of pupils activities; at the same time they clear up the teacher relationship within didactic interaction. They contain six subcategories: direct and indirect receptions, activity performed under direct supervision or without direct supervision, response and own initiative's manifestation.

The ninth category describes the teacher-class interaction and is recorded all the time, while the seventh and eighth categories in the case only, if there is direct interaction between a teacher on the one side and a pupil or a group of pupils on the other. The ninth category contains five subcategories: direct and indirect receptions, activity performed under direct supervision or without direct supervision and response.

Statistic elaboration

In order to describe results of didactic interaction was used analyses of frequencies by the help of absolute as well as relative frequencies. All fixed in percentages. For further comparisons were used descriptive characteristics as arithmetical means, standard deviations and coefficients of variances.

Example of results and interpretation

The very first part presents results of comparison among three teaching attempts with the content of basketball, handball and volleyball elementary learning of basic skills. Next part contains results of observation of students teaching attempts in individual sports didactics - cross-country skiing, gymnastic and swimming. When evaluating the sessions of student teaching attempts a university teacher can add numbered data from the tables by various illustrative examples and instructions explaining how to improve certain episodes from their practical teaching. He can also take advantage of till this time research results acquired with method ADI above all.

Table 1 Aggregate results in sport games

	Basketball	Handball	Volleyball		Basketball	Handball	Volleyball
1st category	%	%	%	6th category	%	%	%
Instruction	41.6	39.1	43.5	Tutoring activity	79.2	80.5	69.6
Correction	0.8	11.7	7.8	Organizational activity	15.6	17.2	16.5
Feedback	2.4	4.7	5.2	Other	5.2	2.3	13.9
Observation	50.4	36.7	29.6				
Announcement	0.0	0.0	0.0	7th category	%	%	%
Inquiry	0.8	0.8	0.0	Direct reception	2.4	0.8	0.9
Reception	0.8	0.8	0.0	Indirect reception	0.0	0.0	0.0
Assessment	0.0	0.0	0.0	Activity under direct supervision	0.0	8.6	2.6
Participation	0.0	3.9	0.0	Activity without direct supervision	0.0	0.0	0.0
Vague situation	3.2	2.3	13.9	Response	0.0	0.8	0.0
				Own initiative	1.6	0.0	0.0
4th category	%	%	%	8th category	%	%	%
Verbal communic.	33.3	15.6	19.1	Direct reception	0.0	3.1	0.0
Verbal & motor communication	7.2	39.1	36.5	Indirect reception	0.0	0.0	0.0
Motor communic. & silence combined	0.0	1.6	0.0	Activity under direct supervision	12.8	46.0	13.0
Nonverbal acoustic com.	6.1	3.9	0.9	Activity without direct supervision	0.0	0.0	0.0
Silence	50.2	37.5	33.0	Response	0.0	0.0	0.0
Other	3.2	2.3	10.5	Own initiative	0.0	0.0	0.0

5th category				9th category	%	%	%
Possess commun. factual significance?	%	%	%	Direct reception	20.0	22.7	21.7
yes	45.6	57.8	57.4	Indirect reception	4.0	3.1	1.7
no	54.4	42.2	42.6	Activity under direct supervision	56.8	15.6	47.8
				Activity without direct supervision	19.2	58.6	28.8
Communic. type	%	%	%	Response	0.0	0.0	0.0
Integrative	9.0	22.7	6.9				
Dominant	16.6	25.0	29.6				
Neutral	74.4	52.3	63.5				

Based upon the analysis of teaching attempts records it is possible to hand to observed students for their further preparation to the teaching job various recommendations:

- To try to decrease the ratio of instructions in favour of other forms of behaviour. Do not start teaching practice by verbal instruction and then repeat it again in the course of a demonstration - to break the instruction into a few intervals.
- In the teaching attempt a student to avoid situations of repeated viewing and reading written preparation (mainly in the teacher of volleyball – 13.9%). It is therefore a duty to be better prepared.
- While teaching basketball to focus more upon corrections and feedback information.
- To prefer combined verbal and motor communication to verbal communication only – this was seen more frequently in teaching handball (39.1%) and volleyball (36.5%). In this particular case there are expected changes in the teaching basketball (7.2%). Prevailing verbal instructions, minimal demonstration and roughly 50% of silence meant his teaching emotional attitude was in 74.4% neutral. Perhaps it was not too imaginative and beneficial for pupils.
- To try to limit neutral attitude in favour of emotive, and predominantly integrative ones.
- In all three teachers to keep at least a found ratio between learning and organizational activities (70-80%:16-17%). Should it happen to limit yet more the time devoted to organizational or other activities, the more time remains for teaching itself.
- In next students teaching attempts to adjust instruction activity by such a way in order the interaction teacher-class not to dominate significantly. To consider the possibility of more frequent establishing, contacts both with a single pupil and a group of pupils. The recommendation is addressed mainly to teachers practicing teaching in basketball and volleyball. Disregarding some small exceptions, the attention of both teachers was focused to a class (the entire occurrence of direct interaction T-C reached in basketball 76.8% and in volleyball 69.5%). If the interaction between teacher and pupil was seen, thus the impulse came, e.g., in basketball, from the pupil and not because of the initiative of the teacher (together 4%). The group of pupils activity under the direct control of the teacher (in both cases roughly 13%), meaning interaction T-G, cannot be considered as ideal, too. Although the interaction with the group in the handball teacher case prevailed, this was due to the class division into two groups, when one of them was systematically located behind him.

Similar results were found while observing students teaching attempts in the lessons of skiing, gymnastics and swimming. For better illustration are presented selected results in these sports in five categories only.

Table 2 Forms of a teacher's behavior

	Skiing	Gymnastics	Swimming
1st category	%	%	%
Instruction	64.0	52.9	44.7
Correction	5.0	12.6	5.3
Feedback	5.0	1.5	0.9
Observation	25.0	1.5	41.2
Announcement	0	0.7	0.9
Inquiry	2	0.0	0.0
Reception	0	0.7	0.0
Assessment	0	0.0	0.0
Participation	0	17.6	0.0
Vague situation	0	12.5	7.0

Dominance of two subcategories of forms of teacher behaviour occurred both in skiing and in swimming, they are instruction and observation. In the gymnastics, regarding to the topic of teaching attempt – conducting a gymnastic warm-up, the predominance of instruction was expected and necessary. Observation was substituted by the active participation of the teacher. Reason of the considerable occurrence of vague situations was the manipulation with equipment and search for the suitable music podcast. All teachers had shown only a small effort in providing correction and feedback information.

Table 3 Forms of a teacher's communication

	Skiing	Gymnastics	Swimming
4th category	%	%	%
Verbal communication	23	34.6	21.9
Verbal & motor communication combined	42	30.9	28.1
Motor communication & silence combined	18	16.9	1.8
Nonverbal acoustic communication	0	5.1	0.0
Silence	17	2.2	41.2
Other	0	10.3	7.0

Also in table-3 it is possible to find interindividual differences

in the using of expressive means. However, the dominance of verbal and verbal combined with motor communication is striking here, too. Comparing to swimming (1.8%) the motor combined with silence behaviour reaches in gymnastics 16.9% and 18.1% in skiing teachers. This statement results from the participation and at the same time from the motor instruction, too.

Table 4 Factual meaning of communication

	Skiing	Gymnastics	Swimming
5th category			
Possess the communication factual significance?	%	%	%
Yes	69.8	86.8	50.8
No	30.2	13.2	49.1

Table 5 Attitude activity

	Skiing	Gymnastics	Swimming
Communication type	%	%	%
Integrative	42.3	19.8	3.5
Dominant	18.1	58.8	20.1
Neutral	39.6	22.0	76.4

Watching the results of category 5 (tables-4 and -5) it is evident that factual content dominated particularly in the teacher of the gymnastics (86.8%). Attitude activity of teachers was different. Quite neutral attitude was presented by the teacher, who taught swimming (76.4%), students teaching attempts in skiing and gymnastics used significantly more emotive approach. Opposite to the integrative attitude of the skiing teacher (42.3%), the teacher of the gymnastics, using commanding didactic style, behaved significantly more dominant (58.8%).

Table 6 Type of activity being the subject of didactic interaction

	Skiing	Gymnastics	Swimming
6th category-	%	%	%
Tutoring activity	87.2	75.0	77.2
Organizational activity	12.8	11.8	15.8
Other	0.0	13.2	7.0

The prevailing amount of the learning over the organizational activities in the 6th category, similar to teaching practices in sports games, is gratifying.

Conclusion

Practice with observation and recording of the students teaching attempts and above given interpretation of some results shows that method MADI is well usable for providing post-response information not only to students who participated in didactic lessons with teaching attempts, but also to university lecturers themselves, for the level of this teaching practice reflects to some extent their didactic capability.

Practical experiences show the use of evaluation by MADI needs quite necessarily the practical training of assessors. The most frequent errors in evaluation were seen in the first category and subsequently in the 5th category when determining the attitude activity.

Above presented results have orientation character only, without seeking whatever way of their generalization. The very meaning of method MADI consist in evaluation students effects of education in special didactics subjects.

Longitudinal research can show the advancements in didactic skills of students. It is therefore a tool for university teachers they to evaluate their work.

Limitation of method MADI is possible to see in fact, it traces interaction only and regarding to the holistic approach, it needs to be combined with other methods of quantitative and qualitative research.

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