VSB TECHNICAL UNIVERSITY OF OSTRAVA

Innovations in the Teaching of Academics and PhD Students at VSB – TUO

Iva Vlková[1], Petra Kowaliková[2]
[1,2]Department of Social Science, VSB – Technical University of Ostrava,
17. Listopadu15/2172, Ostrava - Poruba (Czech Republic)

ABSTRACT

This paper aims to describe the process of innovation of teaching methods at VSB-TUO through the outcomes of a research survey, which was carried out from 2017 to 2019. The aim of the investigation was to find out whether, to what extent and in which ways teachers of VSB – Technical University of Ostrava innovated their teaching methods. Partial objectives were aimed at identifying the most used didactic methods and reflecting on their effectiveness in teaching both from the teachers' perspective and through the evaluation of the innovated teaching by students. Questionnaire and interview techniques were used in a mixed-research methodology; the obtained data reflect the motivation of teachers to innovate teaching and the choice of a particular method, the process of introducing innovation and its impacts. Innovated teaching methods most frequently involved the use of concept (cognitive) or mind (mental) maps, study supports and cooperation with other educational institutions.

RESEARCH GOAL

The aim of the research was to determine **whether, to what extent and in which ways teachers of VSB – Technical University of Ostrava innovate teaching methods**. Partial objectives were aimed at identifying the most used didactic methods and reflecting on their effectiveness in teaching both by teachers and through the evaluation of the innovated teaching by students.

METHODS

The techniques of a **standardized questionnaire and semi-standardized interview** were used repeatedly in the mixed-research methodology.

The basic research sample consisted of **doctoral students, academic staff without a scientific degree and academic staff with a scientific degree** who provide the most significant part of the teaching. The sample was created through **deliberate selection quota** so that the examined units represented all seven faculties of VSB-TUO.

RESULTS

The addressed educators most frequently mentioned the following areas of teaching:

- Introduction of **didactic games and kits** into practical seminar classes.
- Creation of **worksheets and study supports** *(e.g. presenting study text as comics, expanding the study supports with questions leading to a deeper and comprehensive understanding of the curriculum)*.
- Using **Bloom's taxonomy** for the teacher's self-preparation for the class.
- Establishing **a connection with primary and secondary schools** and introducing team learning.
- Introducing **concept or mind maps** into seminar classes.
- Creation of **laboratory manuals** or online manuals.
- Supporting **communication, presenting and self-presenting skills** in diploma seminars.
- Creation of **manual of practical tasks and exercises** for primary and secondary school teachers with the use of techniques used in university teaching.

Innovated didactic methods according to their use	Evaluation of the class by students for the given didactic method	Reflection on the didactic method by the teacher based on self-evaluation and evaluation of teaching by students
Mind or concept map (used 7x)	Positive rating: 90 %	The didactic method will be used by teachers without modification.
Study support (used 4x)	Positive rating: 90 %	The didactic method will be used by teachers without modification.
Bloom's taxonomy for teacher's self-preparation (used 4x)	Positive rating: 100 %	Educators expanded this method to other subjects they teach.
Worksheets (used 2x)	Positive rating: 100 %	The educator reworked the worksheets because of their verbosity and time-demands.
Team teaching / cooperation at secondary school teaching (used 2x)	Evaluation not carried out	The didactic method will be used by teachers without modification.
Online manuals for laboratory seminars (used 1x)	Positive rating: 100 %	Educators expanded the online manuals with additional comments and slowed down some of the sequences.
Training presentation and communication skills of students as part of the classes (used 1x)	Positive rating: 98 %	The didactic method will be used by teachers without modification.
Didactic games (used 1x)	Positive rating: 100 %	The didactic method will be used by teachers without modification.
Creating materials for clubs for primary and secondary school teachers (used 1x)	Positive rating: 100 %	The didactic method will be used by teachers without modification.

Table 1: Brief overview of methods used by educators (source: Vlková, Kowaliková, 2020)

Educator/age	Faculty	Total number of students	Out of which were women	Positive evaluation of the method %	Negative evaluation method %
Man/38	FBI	32	15	86	14
Man/30	HGF	23	18	90	10
Woman/27	HGF	25	20	92	8
Woman/28	HGF	18	18	100	0
Woman/35	FS	27	20	91	9
Woman/27	FAST	25	16	88	12
Woman/32	FBI	22	15	78	22

Table 2: Evaluation of the concept map method (source: Vlková, Kowaliková, 2020)

CONCLUSIONS

Rapid technical and technological development, which is reflected in all areas of social life, must necessarily be reflected by the educational process. Firstly, through the content of education but especially through the transformation of teaching methods. If the educational process is to be effective, it must also take into account the specifics of its students in such a way that the knowledge and skills transmitted by the selected didactic methods are accepted, understood and used by students. The research showed that effective didactic methods include the use of mind or concept maps, worksheets, teaching through didactic games or teamwork.

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For additional information please contact:

Iva Vlková[1], Petra Kowaliková[2]
•*[1,2]Department of Social Science, VSB – Technical University of Ostrava, 17. Listopadu15/2172, Ostrava - Poruba (Czech Republic)*
iva.vlkova@vsb.cz, petra.kowalikova@vsb.cz