

UNDERGRADUATES OF PEDAGOGY AND
THE LEVEL OF THEIR METHODOLOGICAL SKILLS
FROM THE PERSPECTIVE OF THE QUALIFICATIONS FRAMEWORK

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National Qualifications Framework in the field of pedagogy studies was formed by the Polish Ministry of Higher Education on the basis of the European Qualifications Framework. Among accepted basic competencies and skills of this course graduates there are knowledge and skills in research methodology, especially understanding of concepts of methodology, analysis of research reports and designing simple research. The article presents results of research conducted among students of pedagogy in one of Polish universities. The aim of this investigation was to identify the level of methodological skills in the case of undergraduates and differences between them that may exist in this area due to duration of vocational education.

Key words: European Qualifications Framework, research methodology

It is a general truism that if we want to improve education we should remember it is not possible without both empirical verification of new proposals and legitimacy of older solutions and assumptions. For this reason standard courses preparing candidates to the teaching profession include the curriculum of methodological training.

Education is a field of multiple and heterogenic perspectives and theoretical approaches. Therefore, it is not surprising that education research is so varied and conducted in different ways (Babbie 2010; Cohen, Manion, Morrison 2007, Poplin, 2011). Moreover, it is not surprising that academicians and practitioners are required to know the methodological basis of conducting research. Without this basis their possibilities to understand and to use different research findings responsibly are strongly limited, especially when it is known that education research tends to be politicized (Mead 2010, Whitty 2006).

1 Methodological skills of educators and National Qualification Framework

Research is an extremely useful tool for educators. Very often they need to use the results of some educational research to improve educational practices. Equally often various types of research devoted to learning, teaching or other aspects of behavior, psychological and social processes are addressed to them. Depending on their ability to read, they can use those outcomes in their own practice. However, even if the content of research report is understood correctly, it is still important to know what the advantages or disadvantages of the procedure of conducting and presenting research and its results are. In other words, whether and to what extent research and its ingredients are credible. Work based on interaction with another person, as teaching profession, requires responsibility in the face of exerting influence on the person and her or his milieu. Hence practitioners should be simultaneously critical readers of research reports (Dinsdale, Kuttner 2004). Moreover, some obstacles include scientific jargon and complicated procedures of data collection and analysis. Therefore, readers without methodological preparation can overestimate or undervalue the content of research texts. Of course, the research question and research findings are of major interest for practitioners, but also are insufficient in determining the quality of presented research. Generally, the methodology which was used provides a very good indicator of credibility which consumers of research can have about the usefulness and generalizability of findings. Reliance on research outcomes would be safer if we could trust that everything is correct from methodological point of view. We cannot trust it, however, for different intentional and unintentional reasons (see Babbie 2010, Cohen, Manion, Morrison 2007, Krinsky 2004, Whitney 2006). Hence, it should be clear why both the methodological aspect of report research and the ability to read it are important. This part of report explains how reliable research is and in what contexts its results may be applied. Therefore, it should not

be surprising that methodological skills are included in a range of qualification framework of pedagogy studies.

According to the model of European Qualifications Framework (EQF) national systems of education in the countries of the EU should be associated with EQF until year 2010. It has to be done through the National Qualifications Framework (NQF). Finally, from 2012 all documents confirming obtained education should have formal references to the appropriate level of EQF.

When it comes to pedagogy profession the Polish NQF (Journal of Laws of the Republic of Poland, 2011) determines general and specific properties for bachelor and master studies. This article focuses on methodological skills which are provided for students of pedagogy and determined by NQF; therefore, it is displayed closely below. According to NQF, graduates of pedagogy studies at the bachelor level should know basic paradigms and methodological strategies in social science and have an elementary knowledge of preparing and conducting research, especially research questions, methods and research tools. Also, they should be able to do analysis of research outcome and aspects of constructing the research. Graduates of bachelor studies ought to be able to march adequate method and tools during conducting research, to analyze its results and to be able to draw final conclusions and assess a general quality of presented research. Moreover, awareness of ethical aspects of research is highlighted as an important element.

At the level of master studies graduates should possess a deeper and broader knowledge of paradigms, strategies and orientation used in social science. They should be able to analyze and prepare research on the higher level of advancement. They should know how to construct tools to measure some variables and be able to do it, to prepare results and conclusions and present them as well as to show direction of further research. In this context the main aim of research presented below was to assess methodological skills among the undergraduates of pedagogy studies.

The skills relate to understanding and interpreting of the content of research report. New conditions of higher education have been prepared according to EQF for recent years. Therefore, it is reasonable to assume that some effects in scope of professional skills possessed by undergraduates should be currently visible. Hence the basic research question was whether differences in terms of methodological skills exist between students from different years of study. In the presented research the participation of students from different years of education was planned: from the first, the third and the last year of master studies. The groups of students were compared. This solution let display differences in the scope of the interesting variables immediately, without the necessity of conducting longitudinal observation. The assumption was that undergraduates from the first year do not have precise methodological knowledge. Hence, they can be treated as a "zero" reference group.

2 Method

2.1 Participants

Undergraduates of pedagogy at Pomeranian University in Poland participated in the research. The research was conducted between three groups in order to make possible differences more expressive. Students of the first (36) and third (44) year of bachelor studies and of the second year (44) of master studies. In the case of the last group they have been learning for five years. The age of participants ranged from 19 to 28 years ($M=22.18$, $SD=1.81$). Among participants there were 116 women and 8 men. This sex disproportion is characteristic for pedagogy studies in Poland.

2.2 Measures

Author-Devised Questionnaire of Methodological Skills is the tool based on guidelines of National Qualifications Framework (NQF) for pedagogy studies at the bachelor level. It comprised a piece of text which was especially prepared section of research report, questions about sex, age

and year of study. The text consisted of 17 sentences. Twelve of them were diagnostic. Nine questions were given to the text. The questions related to types or strategies of described research, hypothesis, variables and its indicators, select sample, ethical aspect, validity and reliability of research and its ingredients. Participants were asked to indicate the place in the text containing sentences with the best answer to the questions. In the case of two questions an identification of two and three numbers of sentences was proper, which was explained in an instruction. For each appropriate answer 2 points were assigned. Generally, the highest score to achieve was 18 points.

Before using, the tool was judged by 5 researchers. They assessed the concordance of the content of used sentences with methodological correctness as well as with the level of difficulty and clarity of the sentences. The correlation between their assessment of the content was satisfactory. W-Kendall's coefficient of concordance was equal 0,80 ($p=0.0001$). The level of difficulty and clarity of the text was determined in a similar way. Each of the variables was tested by two questions on the 7-point scale. The higher points the easier and clearer the task. The judges assigned from 5 to 7 points for clarity and the same for difficulty. In the case the W-Kendall's coefficient of concordance likewise was equal 0,80 ($p=0.0455$) for both variables.

2.3 Procedure

The prepared tool was given to all groups of students. Generally, 124 undergraduates participated in the research. Random sampling was used. Sampling units were groups of students who had been determined earlier by their weekly schedule of classes. After coming to chosen groups the researcher asked undergraduates to take a part in the investigation whose aim was explained to them as a diagnosis of their skills of research reports interpretation. The participation in the survey was voluntary, anonymous and was not to time pressure. Since no one refused to participate everybody received a questionnaire to complete.

3 Results

In the first step, homogeneity of the groups' variances was tested. Levene test ($F[2,121]=1.56, p=0.2169$) and Brown-Forsythe test ($F[2,121]=1.27, p=0.2840$) showed that using analysis of variance was legitimate. Subsequently, analysis of variance (ANOVA) revealed disparity between tested groups. Although there was no difference among students from the first and third year, both groups achieved fewer points than students from the fifth year. Effect size (η^2) was definitely emphatic and visibly indicates the relationship between the year of study and the amount of test points in Questionnaire of Methodological Skills. Despite of this results of the oldest students were clearly lower than the level determined by National Qualification Framework for bachelor studies. Detailed results are presented in Table 1.

Table 1: Results of ANOVA test for scores in Questionnaire of Methodological Skills

year of study	M	SD	F (2,121)	p	η^2	post hoc (LSD)
1	7.81	3.38				1 - 5
3	9.20	3.39	16.63	0.0000	0.22	3 - 5
5	11.95	3.15				

4 Discussion

The results show that students from various years of study differ in terms of methodological skills. It was quite predictable that the longer the time of learning, the higher the knowledge. But it is alarming that for three years of study the skills of reading and understanding language of research reports did not improve in the group of investigated undergraduates. The analysis did not reveal any differences in terms of "methodological skills" among students from the first and third year. Moreover, despite higher results achieved by the oldest students the general outcome indicates poor condition of students to be critical consumers of research. First of all, students from the last year of master studies executed

66% of task determined by NQF for graduates of bachelor studies. If they do not improve their knowledge and skills in scope of methodology of social science they will not be teachers or educators according to the standards determined by new requirements of NQF. Now they are at risk of making mistakes in pedagogical practice. For example, when using research results to assess an educational situation and to decide about taking suitable pedagogical action is required.

Of course, on the basis of research we cannot conclude correctly about the state and condition of Polish higher education in scope of pedagogy. The main limitation of the investigation is small sample and narrow range. The range of aspects measured by the Questionnaire of Methodological Skills is also limited. Furthermore, the outcomes can be affected by many factors associated with specific environment of the students and their education. Nonetheless, the findings may be used as one of the illustrations of potential state of methodological knowledge and skills among Polish pedagogy students and their preparation for the teacher profession in scope of critical consuming of research results.

Nevertheless, the presented results are connected with a broader problem. Generally, if the purpose of educational research is to improve educational and developmental situation of people, teachers and other specialists must know how to use research and how much they can trust it. For this reason determining standards of research is necessary (see Korb, 2010). One of the standards is unity of language which allows researchers and all recipients to communicate in a range of definitions, problems, procedures and results of research. Alike it pertains to quantitative and qualitative perspective as well as to nomothetic and idiographic approach. Moreover, during preparing, conducting and presenting research there may appear numerous pitfalls and readers ought to be aware of this and be able to recognize cues which are given by authors. If readers possess knowledge of all the factors and basic methodological skills, they are significantly protected from misunderstandings and manipulation.

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