Teachers at the Beginning of Their Professional Work-Assessment of the Level of Pedagogical Competence of Graduates of Teaching Faculties

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Abstract—The paper presents the results of a pilot study into the level of pedagogical competencies of students of teaching degrees. The study was conducted using the diagnostic tool called “Pedagogical Competencies at the Start” (KPNS, Kompetencje Pedagogiczne na Starcie), developed by the research team. The authors present a holistic approach to the categories of pedagogical competencies. The study, which is the initial phase of a bigger research project, has revealed deficits with which young people begin their careers, and at the same time identified areas to be developed in university curricula. This refers, in particular, to the competencies for sustainable development and organizational competencies. This state is considered as the result of mainly theoretical education of teachers and low quality of internship.

Keywords—pedagogical competencies, teachers, teacher education

I. INTRODUCTION

Research on the teaching profession cover many areas. Most often, studies focus on personal characteristics of teachers, professional work and its effects, certain competencies or professional development and promotion. In Poland, research on the preparation of future teachers and their competencies as they begin their careers, are conducted only occasionally [1,2]. However, the existing studies into professional adaptation of new teachers [3-26] suggest that many of them experience numerous difficulties as they try to implement their knowledge and pedagogical skills. This, in turn, hinders proper implementation of the teaching process and leads to disappointment, burnout and, in consequence, giving up teaching career. In the light of the above, we concluded it is important to study pedagogical preparation of prospective teachers, and develop a proper tool to diagnose pedagogical competencies of candidates. The objective of the study was to diagnose the pedagogical competencies” at the professional start” and to introduce adequate educational and corrective actions to minimize candidates’ fear regarding teaching different school subjects.

We began with defining terminology and developing the concept of pedagogical competencies of future teachers, based on the analyses of the existing research on pedagogical competencies of teachers during their preparation to professional work [25-33]. We also designed the diagnostic tool to study pedagogical competencies of the prospective teachers. For this purpose, we referred to the above mentioned publications. Based in our analyses, we assumed that professional competence is a competence connected with the ability to master the knowledge. Teachers’ pedagogical competence is the ability to manage learning, and this includes planning, implementation and evaluation of learning outcomes. Every teacher should possess these competencies in order to achieve success in learning and teaching [34]. Thus, we decided that pedagogical competencies are context-specific, learnable cognitive dispositions that are needed to successfully cope with the specific teaching situations [35]. Competency categories, defined for the research purposes as a set of categorial competencies considered necessary in teaching profession [27], allow to assume that each studied area may consist of several specific, detailed, single competencies. Ten categories of competencies developed and presented below are treated as category variables.

Categories of pedagogical competencies of prospective teachers” at the professional start”, which have been designated by us based on a literature analysis, are:

- Didactic competencies: related with skills and knowledge regarding developing and leading the process of education, teaching, performing the tasks of a teacher and pedagogue, and knowledge of teaching methods.
- Coaching competencies: related with ability to motivate students, help them set ambitious educational and
developmental goals, encourage them to self-improve, and raising awareness of the need for constant development according to the Life Long Learning principles.

- Educational competencies: connected with developing socially adequate attitudes, encouraging discussion about values in life, ability to self-reflect on axiological issues, and understanding the importance of teacher’s authority.

- Socio-emotional competencies: Related to communication skills and ability to build healthy interpersonal relations; empathy and understanding of others. This category consists partially of communication competencies and soft competencies connected with functioning in the society or in a group.

- Organizational competencies: related to time management planning and realization of goals; they include temporal skills and analytical and predictive thinking.

- Mediation competencies: connected with the ability to amicably solve conflicts, prevent conflict situations, communicate in difficult situations, awareness of the importance of restorative justice.

- Care and rescue competencies: connected with ensuring safety of students, skills and knowledge of the first aid, adequate behavior in life or health threatening emergencies

- Competencies for sustainable development: Understood as a set of competencies of critical, predictive and analytical thinking in the following areas: social, economic-political and environmental.

- Therapeutic and preventive competencies: connected with the ability to provide support in difficult situations, awareness of various types of disorders and ability to organize institutional support. Ability to implement effective preventive measures.

- Legal competencies Connected with legal knowledge, ability to apply legal provisions in educational practice, respect towards the law and institutions.

II. RESEARCH AND METHOD

A. General Assumptions

Based on the literature analysis, we identified 10 categories of pedagogical competences (as described in the Introduction) and – on the basis of the same search – items assigned to each of them. Each item described abilities or behaviors which novice teachers might be characterized by. Then, the tool „Pedagogical competencies of teachers at the start” was developed, its test version consisting of 75 items. The survey was conducted in May 2018 at the Pedagogical University of Cracow. It was in the form of self-evaluation, which means the respondents assessed their own level of competencies, based on self-diagnosis (knowledge, skills and experience, and reflective abilities). The standardized, final version of the tool after the pilot study consists of 64 items assigned respectively to the identified 10 categories.

B. Sample

The main goal of the pilot study was to test the tool. It was conducted among randomly selected [36] group Pedagogical University senior students of all programs with teaching specialization. We applied the following selection criteria: direction of studies and subject taught (for example, Polish language, English language, mathematics, physics, history, biology, fine arts, primary education), positive declaration of willingness to work as a teacher, being in the senior year and having obtained full teaching qualifications (didactic, pedagogical and to teach the selected subject). Ultimately, 51 students took part in the survey, out of which 47 were females (N=47) and 4 were males (N=4). Lack of gender differentiation is typical for teacher population. Employment statistics confirm that this profession is most often chosen by women. In Europe, 85% of teachers working in primary schools are women; in high schools they are 65% of teaching staff. In Poland, 78% of teachers in all types of schools are women (87% in primary schools and 65% in high schools).

C. Method

In the pilot study, we used the test method — the original tool, Pedagogical competencies of Teachers at the Start” (KPNS). In order to standardize the KPNS, and considering its specifics, we used the Cronbach method based on the analysis of statistical characteristics of test items [37]. Test version of the diagnostic tool consisted of 75 items with a point scale (1-4). The reliability analysis by means of Cronbach’s alpha yielded high results. Table II presents these results for each competence category (Table I):

<table>
<thead>
<tr>
<th>Competence category</th>
<th>Cronbach’s α</th>
<th>std Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>for didactic competencies</td>
<td>0.773504</td>
<td>0.784873</td>
</tr>
<tr>
<td>for coaching competencies</td>
<td>0.792125</td>
<td>0.795303</td>
</tr>
<tr>
<td>for mediation competencies</td>
<td>0.803866</td>
<td>0.805918</td>
</tr>
<tr>
<td>for educational competencies</td>
<td>0.881689</td>
<td>0.881387</td>
</tr>
<tr>
<td>for therapeutic and preventive competencies</td>
<td>0.862822</td>
<td>0.865148</td>
</tr>
<tr>
<td>for legal competencies</td>
<td>0.892292</td>
<td>0.892392</td>
</tr>
<tr>
<td>for socio-emotional competencies</td>
<td>0.844416</td>
<td>0.845273</td>
</tr>
<tr>
<td>for organizational competencies</td>
<td>0.885035</td>
<td>0.888182</td>
</tr>
<tr>
<td>for care and rescue competencies</td>
<td>0.888465</td>
<td>0.88917</td>
</tr>
<tr>
<td>for competencies for sustainable development</td>
<td>0.916512</td>
<td>0.916673</td>
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</tbody>
</table>

* Source: Authors’ own compilation based on the research results

As a result of the Cronbach’s α test, the questionnaire was reduced to 64 items in 10 groups of pedagogical competencies.

D. Main Goal of the Research

The research had three main objectives: (1) to describe the categories of pedagogical competencies of students preparing to work as teachers, (2) to standardize the KPNS tool, and (3) to diagnose the level of pedagogical competencies of graduates.
with teaching specialization before they begin their professional careers (prospective teachers). The paper presents excerpts from the research, that refer to the diagnosed level of competencies among the prospective teachers. The main research question was: What is the level of pedagogical competencies among the prospective teachers? The survey allowed us to formulate the initial diagnosis of the level of pedagogical competencies among students who finish their education and professional training at university level.

III. RESULTS OF THE RESEARCH

The analysis of category variables helps to determine the level of students’ competencies in each category. This allowed us to describe which competencies are developed on high or average, and which on the low level. Summary, average results for all the categories are presented first, followed by the separate results for each of the 10 categories. The extremes for certain items were also identified because unit analysis at this level enabled identification of both, strong and neglected areas in teacher education.

The results are presented in Figs. 1 and 2:

![Graph showing results](image)

**Fig. 1.** Average results of competence diagnosis — general*

* All data on graphs - source: own research

<table>
<thead>
<tr>
<th>TABLE II. AVERAGE RESULTS FOR EACH COMPETENCE CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>didactic competencies</td>
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<tr>
<td>coaching competencies</td>
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<tr>
<td>mediation competencies</td>
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<td>educational competencies</td>
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<td>therapeutic competencies</td>
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<tr>
<td>and preventive competencies</td>
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<tr>
<td>legal competencies</td>
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<tr>
<td>socio-emotional competencies</td>
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<tr>
<td>organizational competencies</td>
</tr>
<tr>
<td>care and rescue competencies</td>
</tr>
<tr>
<td>competencies for sustainable development</td>
</tr>
</tbody>
</table>

**Source:** Author’s own research

Considering distribution of the results obtained by analyzing the questionnaire data, with standard deviation $r=0.817$ ($p=0.05$), we can assume that:

- therapeutic and preventive, socio-emotional and coaching competencies are at a high level
- care and rescue, didactic, educational and mediation competencies are at an average level
- sustainable development, organizational and legal competencies are at a low level

A. Detailed Results for All Categories

Results for Categories with Extreme Values

In this part of the paper, we present excerpts from categories with extreme values in the areas of selected pedagogical competencies of the prospective teachers (Fig. 3-10). The graphs show relations between the detailed and general results for a given competence category.

![Graph showing detailed results](image)

**Fig. 2.** Excerpts from categories with extreme values—didactic competencies

The highest result was found for the following items:

- I know how to teach effectively (3.2)
- I know how to evaluate students objectively and fairly (2.96)
- I can explain and present content in a way students can absorb it (2.98)

The lowest result was found for the item:

- I know what hidden curriculum is and what are the effects of it (2.39)

![Graph showing detailed results](image)

**Fig. 3.** Excerpts from categories with extreme values—educational competencies
The highest results were obtained for the item:
- I know what education is (3.4)

The lowest results were found for the items:
- I can diagnose difficulties students struggle with (2.45)
- I can implement solutions to eliminate difficulties students struggle with (2.55).

![Fig. 4. Excerpts from categories with extreme values—coaching competencies](image)

The highest result was obtained for the item:
- I undertake activities to facilitate my own development (3.23)

The lowest result was obtained for the item:
- I know how to develop students’ abilities and talents (2.72)

![Fig. 5. Excerpts from categories with extreme values—socio-emotional competencies](image)

The highest results were obtained for the following items:
- I can support students in solving their problems (3.0)
- I know the principles of non-violent communication (3.04)

The item that got the lowest result was:
- I know how to prevent conflicts in class (2.49)

![Fig. 6. Excerpts from categories with extreme values—organizational competencies](image)

The highest result was obtained for the item:
- I can set priorities and stick to them to achieve my goal (3.21)

The item that got the lowest result was:
- I can effectively use my time during classes (2.02)

![Fig. 7. Excerpts from categories with extreme values—mediation competencies](image)

The highest results were obtained for the following items:
- I can support students in solving their problems (3.0)
- I know the principles of non-violent communication (3.04)

The item that got the lowest result was:
- I know how to prevent conflicts in class (2.49)

![Fig. 8. Excerpts from categories with extreme values—care and rescue competencies](image)

The highest result was obtained for the item:
• I know how to behave in case of emergency in my school (3.17)

The item that got the lowest results was:
• I can ensure safety of my students (2.74).

As for didactic competencies, the prospective teachers evaluate their skills and knowledge in the area of diagnosing difficult situations and introducing intervention measures as low. As for therapeutic and preventive competencies, we can see the low level of awareness of intervention measures in case of addictions. This is due to theoretical teaching, not anchored in pedagogical practice that would allow the prospective teachers to confront their knowledge and experience with school reality. Apart from diagnosing difficult situations, the prospective teachers reveal a low level of knowledge and skills in diagnosing individual predispositions of students [2,24]. This leads to a disturbing conclusion that individuals who obtained average results are only prepared to work with average students. Respondents with high results are ready to work with every student, and those with low results are not prepared to work with any — however, the passing rate in pedagogical programmes is almost 100%. Students also do not know how to solve conflicts in class and how to ensure safety during classes. This suggests that university curricula lack the content from this area, or this content is poorly emphasized, especially in the context of safety.

IV. CONCLUSIONS

Given the 4-point scale, the diagnosis results show that students of teaching specializations declare their competencies are at an average level only. The results lead to the following conclusions:

• Students evaluate their competencies as the lowest in the area of sustainable development [38]. This results from the fact that, despite recommendations provided for years in this regard, education for sustainable development is marginalized in university curricula.

• Organizational competencies are also evaluated as low. This might be due to insufficient number of internships during the whole studies. Internship would allow students to develop right attitudes and skills in managing their own time and time of others.

• Students lack legal knowledge and awareness of legal regulations that would help them function effectively as teachers. Legal knowledge teachers should possess includes the basics of civil and family law, as well as education and labor law. These deficits may result from too general and insufficient preparation prospective teachers receive in this context during their studies. In many cases, university curricula provide only 5-10 hours of education law (usually combined with the labor law), often in the distant learning form.

• Students evaluate their didactic competencies as average. Like in case of organizational competencies, this may be due to the limited number of internship hours. This, in turn, means less opportunities for
individual discussion and practice with more experienced teachers. There are no systemic solutions in the area of supervision for students [2, 39].

- Similar to the above, students evaluate their mediation competencies as average, especially in terms of intervention in conflict situations [40]. These competencies include readiness to intervene in difficult situations. They are based on knowledge and communication skills [41-42]. Such evaluation results from the lack of opportunity to analyze real critical incidents during internships.

- Care and rescue competencies are also evaluated as average, while in practice there is a tendency to increase teachers’ responsibility for widely understood safety of children and youth.

- Students evaluate their therapeutic and preventive competencies as the highest. This is due to the increased number of topics regarding different disorders at every stage of human development, addressed in university curricula. This would indicate that recommendations from the previous years — to increase the focus on developing knowledge about preventive measures in psycho-emotional and physical health, and therapy of addictions in pedagogical curricula — have been met [43].

- Socio-emotional competencies were also evaluated as high. During the recent years, this competence group was also under particular focus, due to previously diagnosed difficulties. At the same time, we can assume that teaching profession requires the highest social and emotional competencies, so the opposite results should be disqualifying [44].

- Students declared their coaching competencies are at a high level. This may also be connected with the growing interest in coaching methods. Many students and university teachers undergo independent trainings in this area [40]. However, this type of innovation is missing in study curricula. The demand is met by the training market.

REFERENCES


