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Attitudes of Polish teachers: an attempt to typify

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The article documents a preliminary description of Polish teacher attitudes based on data collected from a representative sample of teachers describing their work habits and occupational experience in and out of school. Cluster analysis allowed identification of five distinct groups. Of particular note but difficult to describe in detail is the group who dedicate exceptionally long hours to work. The most numerous cluster includes those who could be described as "needing support", who have little work experience and spend relatively little time engaged with their work.

Keywords: teachers, professional attitudes, work time.

Teachers in any country form a numerous and internally differentiated professional group. Unfortunately most sociological or psychological studies of Polish teachers and their attitudes restrict analysis to the profession as a whole, without further division into smaller sub-groups. Pyżalski and Merecz's (2010) study provides a good recent example revealing important details about the burden of a teacher's work. The most frequent categories used to describe teachers include age and school location, its size and urban or rural setting. Nalaskowski (1997) performed analysis of this type in his work on the attitudes of teachers working in the countryside.

Of the few who have studied how sub-groups of teachers could be identified, Poraj (2009) discussed teachers' psychological profiles. Her study investigated 387 teachers from Łódź who completed eight wide-ranging questionnaires. Analysis revealed three groups of teachers labelled as "frustrated" (23%), "professionals" (42,5%) and "enthusiasts" (34,5%), as described by in-depth psychological profiles. Sęk and Pasikowski (1996) used hierarchical analysis to study professional exhaustion: "not burnt out" (39%), "emotionally exhausted" (25%), "exhausted and not engaged" (18%) and "burnt out" (18%). In her recent 2012 study, Kędzierska looked at teacher groups, divided according

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to career path, primarily in the context of education reform. In-depth interviews of 52 teachers revealed four career types, which were identified according to two dimensions: single versus multi-track professional development and level of personal initiative and activity. Types of career were described as: "construction" (multi-tracking, high initiative), "anchor" (single track, moderate initiative), "patchwork" (multi-tracking, modest initiative) and "blind alley" (single track, low initiative). The merit of Kędzierska's approach derives from the highly detailed interviews concerning entry to the profession, career progression and teacher opinions about the profession. Its usefulness, however, is limited by the sample size, which prevents extrapolation into the general Polish teacher population.

The aim of the present article is to examine teachers' professional attitudes to attempt to characterise groups identified according to recent data from the survey *A study of teachers' working hours and conditions* (Federowicz et al., 2013). This was one of the first Polish studies to measure teachers' actual working hours – not only including their statutory hours, work supervised by the school and accounted for in the educational information system. Time officially unaccounted for was the main focus of the study. The study included observation of teachers' five most important activities: beyond actual time spent in the classroom this also included time spent on other school activities, preparation for lessons and other organised activities, as well as time spent marking students' work (practically every teacher performs all these activities in a working week). Another area of interest was time spent by teachers on other, less frequently performed tasks (Table 1). From the perspective of time spent on the five common tasks, teachers were found to be highly varied. The only factor identified influencing total working time was the main subject taught. Teachers of core subjects, such as mathematics or Polish, work decidedly longer hours per week than teachers of religion or physical education. According to the analysis, age, experience, level of professional advancement, type of school or size of town are not correlated with total working time. Time spent by teachers on their work is highly variable, but *A study of teachers' working hours and conditions* was not able to explain this.

Nevertheless, as noted by Federowicz et al. (2013), average times spent on the five main activities were positively correlated. This is significant in the fact that there is an important aspect of teachers' work not measured in the empirical study and which influenced the time teachers spent working. The strong variation in teachers' work is therefore related to factors not observed in *A study of teachers' working hours and conditions*. These factors which were not measured could include motivation, responsibility, readiness for career development or conversely – unwillingness or professional exhaustion (these factors have been measured in some of the studies discussed above, but were not included in the major survey on which our paper is based). Existence of such hidden factors prompted the analysis which is the subject of this paper. Rather than looking for factors to explain working hours from the collected data, the focus here is on the characterisation of groups of teachers with similar work experience, work hours and their description. For this reason econometric models are not used. Similar to Poraj (2009) and Sęk and Pasikowski (1996), cluster analysis was applied. From the national survey of 1644 teachers, five groups of teachers were identified and provisionally characterised. The study uses data from the survey *A study of teachers' working hours and conditions*, conducted on a representative random sample and contracted by the Educational Research Institute in 2011–2012.

The fundamental research question posed by the present study relates to how actual variation of teachers' attitudes to their

work relates to their activity as measured by the time they put into work and their opinions about the teaching profession. What typifies teachers who dedicate a lot of time to work, as broadly understood and extending beyond the classroom? How do they differ from teachers who work less?

In the first part of the article the available data that was used for the study is discussed and in the second, the research methods applied. In the final two sections the teacher clusters identified are discussed followed by an exploratory discussion of their characteristics.

Data description

The researched sample were teachers working in schools for young people. Only data collected using on-line questionnaire (CAWI) were used for the results presented here. The aim of this part of the survey was to document time spent on specific work activities during a typical working week and the frequencies of various relevant activities identified in preparation for the survey. These activities were divided into four groups: teaching (20 activities), supervision and care (13 activities), administration (13 activities) and professional development (8 activities). Of all the 54 teaching related activities, five may be described as daily: preparation and teaching of lessons, preparation and supervision of additional activities and marking student work. Times spent with these duties were positively correlated with each other, meaning that a teacher who spent more time on one of these activities typically also spent more time on the other four. The most frequently performed tasks, apart from these 5 daily activities, are enumerated in Table 1. Each activity was ranked according to the percentage of teachers who assessed that it is performed several times per month or more often. Within each group the three most frequent activities are shown and

Table 1
The most frequent teachers' school related activities outside daily activities

Group of activities	The most frequent activities
Teaching	1. Preparation of students for competitions 2. Preparation of work plan for individual students 3. Preparation and supervision of school events and parties 4. Activities with students on non-teaching days 5. School outings 6. Preparation and invigilation of term exams
Supervision and care	1. Individual meetings with parents 2. Work with subject team 3. Work with progress team 4. Student council 5. Observation and measurement 6. Preparation of student achievement records 7. Work in a psychological-educational assistance team
Administration	1. Keeping registers 2. Calculation of attendance 3. Staff meetings
Professional development	1. Acquiring teaching aids and learning to use them 2. Preparation of documentation related to professional development 3. Classes on postgraduate studies – attendance 4. Qualification courses – attendance

also, additionally, those activities which are reported by no fewer than 5% of the teachers as performed at least a few times per month. For this reason the number of listed activities is not evenly distributed.

Besides information about working time, opinions about work conditions, basic socio-demographic and work-related information were also collected in the survey. A precise timetable for a teacher's week's lessons was recorded. These data serve to typify respondent groups described below.

The empirical sample was drawn using a strategy of random two-stage stratification. In the first step, schools were randomly selected using the Educational Information System (*System Informacji Oświatowej*, SIO) and then the teachers were selected at random from those schools. This procedure guaranteed a representative sample, both at teacher and school levels. The first level of random selection involved a combination of variables as follows: type of school (primary, lower secondary and upper secondary) and the population of the area served by the school. Replacement schools with similar profiles were used to replace schools that refused to participate. Six teachers were selected from each school for interview. Not all respondents agreed to cooperate, but in such cases no replacements were made. Information was collected from 4762 teachers in 921 schools.

Data from the survey *A study of teachers' working hours and conditions* are prone to atypical or false answers, as is to be expected in studies in which respondents provide their answers independently, without supervision or the help of a researcher. To limit adverse influence on the results it was decided to remove responses where it was obvious that they were patently not true, for example, those who claimed to have started work before their birth (6 observations) or those who taught no classes (11 observations). The second set of restrictions was tightly bound to the subject of the analysis. The rule was as follows: observations with a value above the 99th percentile of time distribution in each category: classroom time, lesson preparation time, time spent supervising other activities, time spent preparing for other activities and time spent on marking work were regarded as unreliable and therefore discarded. As a result, 238 observations were removed in the second step and the number of respondents reduced to 4507. The adjustments made did not threaten the validity of the sample. In order to achieve the research aim which was to form a homogeneous group with description of their characteristics, required further reduction to the sample. For this reason teachers performing roles outside those required of subject teachers were removed whilst they still satisfied statutory requirements. Two hundred and two school heads or deputy heads and 399 teachers with afternoon care or library duties were excluded. The number of lessons taught by specialist subject teachers are indirectly influenced by their subject (Federowicz and Strawiński, forthcoming). To improve group homogeneity, analysis was further limited to teachers taking 18 or more classes in the core subjects. Six hundred and thirty five teachers with fewer than 18 classes and 1627 engaged outside core subject teaching were removed from the sample. Core subjects included: Polish, foreign language, history or civic studies, science (biology, chemistry, physics, natural history and geography), mathematics. Remaining subjects did not occupy many teaching hours and manifested certain atypical aspects which would require much additional attention. Three subjects – religion, physical education and early school education would be particularly good examples. Since only a few surveyed were teachers of these subjects, they were also excluded from the analysis. The final count of the sample was 1644 teachers.

Teachers of the chosen core subjects all followed very similar patterns in terms of

work hours and organisation. This justifies limiting the scope of the analysis to this subpopulation (Federowicz and Strawiński, forthcoming).

Methodology

Cluster analysis is an approach to data exploration (Everitt et al., 2011) and can be used to combine observations according to chosen variable characteristics. Grouping is performed in a manner which guarantees maximum homogeneity inside a group and maximum differences between groups. It is a method which does not adhere to the theory of analysed phenomena. Kaufmann and Rousseeuw (1990, p. 1) emphasise that cluster analysis is the art of finding groups within data.

Cluster analysis uses both hierarchical methods and procedures for division into groups. The literature describes many algorithms for these purposes and choices of the best to clarify or describe data (Kaufmann and Rousseeuw, 1990). In this study one of the most straightforward approaches was adopted. The *k*-means method was considered appropriate, owing to the simple interpretation of results and its speed. One problem, however, associated with this method is that some data is equidistant between two or more groups. Such cases are then randomly assigned to a group. Alternative approach, namely hierarchical division, was also considered but ruled out for a number of reasons. First, there are no theoretical arguments for using hierarchies among teachers. We also note that effectiveness and unambiguity of hierarchical methods as applied to large samples is doubted in the literature. Moreover, due to the appearance of many equidistant clusters, the algorithm implementing of the hierarchy did not converge and acted randomly.

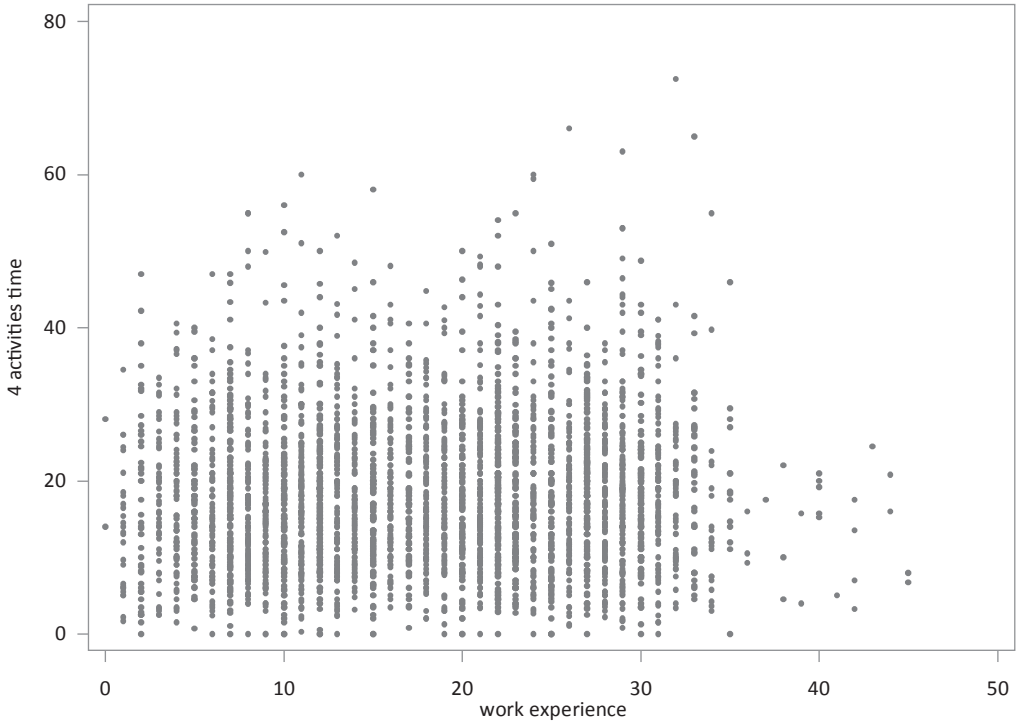

Figure 1. Time spent on 4 lesson-related activities and duration of work experience.

Two variables were used: time spent on lesson-related activities and work experience. The first accounted for time spent preparing for lessons, on other activities, preparing for other activities and marking pupils' work. Work experience was counted in full years worked at school and was strongly correlated with age. It was chosen as an element for cluster analysis as an important indicator, not only for years of work experience, but also for professional exhaustion (Sęk, 2010).

Figure 1 illustrates that the range of values for time spent on basic activities associated with teaching is greater than for years of work experience. Distribution of both indicators is close to normal. This justified establishing group centres according to the mean for the *k*-means analysis. Measures were standardised to remove scale effects.

The first step of the analysis was to establish the number of clusters. Since the cluster is created on the basis of two measures it was assumed that the minimum number should be four. The maximum limit was set at 9 to allow for various possibilities in the interpretation of results. The pseudo-*F* statistic proposed by Caliński and Harabasz (1974) was used to establish the number of clusters (Table 2). This index assumes a greater value with increasing separation of the clusters defined. This indicator is more appropriate than the Duda-Hart index which is exclusively intended for the evaluation of hierarchical divisions (Everitt et al., 2011).

Table 2
Number of clusters and the value of pseudo-F statistics

Number of clusters	pseudo-*F*
4	1 151
5	1 181
6	1 059
7	1 157
8	1 153
9	1 032

On the basis of the results it was decided to use 5 clusters. Division of observations between clusters was performed according to which centre was closest in proximity. Euclidean distance was chosen as the measure of proximity, so that both dimensions were treated equally. The size of each cluster was then established together with their distribution statistics (Table 3).

The clusters naturally form three disjoint bands: clusters 1 and 4 (young teachers), cluster 2 and 5 (experienced teachers) and cluster 3. Division according to time spent on lesson-related activities is less sharp, nevertheless it is also possible to describe separate bands: clusters 1 and 5 (short working time – signifying weak engagement), clusters

Table 3
Clusters and their characteristics

Cluster	Number of observations	Work experience (years)			Time spent on 4 activities (hours/week)		
		M	Min	Max	*M*	Min	Max
1	510	10.4	1	18	12.1	0	18.5
2	311	24.9	18	43	24.3	17.5	36
3	118	18.7	2	35	41.9	32	65
4	381	9.8	0	17	24.4	18.3	38
5	324	26.6	19	45	12.3	0	20.8
Total	1 644	16.7	0	45	19.5	0	65

2 and 4 (much longer working time) and cluster 3 (an extremely long working time – strong engagement with relevant activities). Cluster 3 stands out in respect of both variables (Table 4). The clusters identified are not equally sized.

Table 4
Cluster sizes (in %)

Cluster	*N*	%
1	510	31.0
2	311	18.9
3	118	7.2
4	381	23.2
5	324	19.7
Total	1 644	100.0

The clusters are illustrated in Figure 2. Each cluster is represented by a circle centred on mean values of variables with radius proportional to cluster size.

Cluster 1 (little experience, low preparation time) is the largest, characterised by little work experience and little preparation time for work. Cluster 3 (the highest preparation time) was the smallest, characterised by extensive preparation. The remaining three clusters each accounted for about 20% of all teachers. Table 5 presents their brief descriptions according to both variables.

Cluster analysis does not have a commonly accepted, unequivocal criterion for group separation. Clusters identified are considered worthwhile if analysis allows the difference between groups to explain the problem and it is possible to describe these differences in meaningful terms. This is why the decisive step in the analysis is in obtaining cluster descriptions based on the data available.

Analysis of identified clusters

Comparative analysis of the clusters identified was performed according to gender,

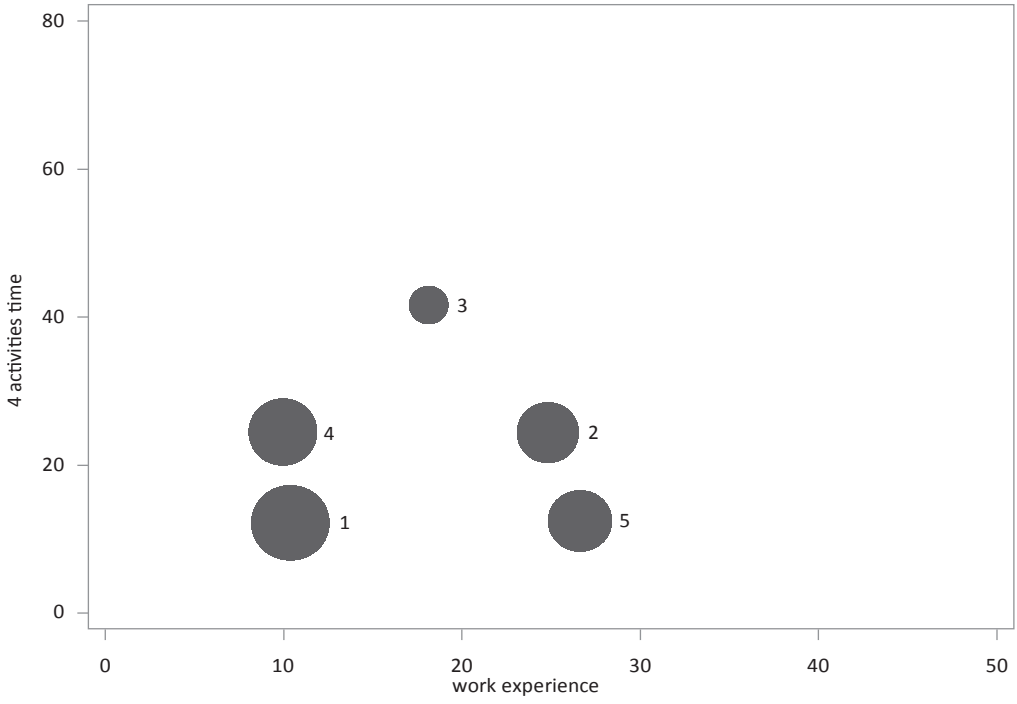

Figure 2. Time spent on 4 lesson-related activities and teacher work experience.

Table 5
Brief description of clusters

Cluster	Description
1	Teachers with a short tenure, dedicating significantly less time to school-related activities than the average teacher.
2	A group of older teachers, with an above-average tenure, working a lot.
3	Teachers with diverse tenures, who are characterised by high involvement in activities that accompany conducting lessons.
4	Beginner teachers, with a short tenure, but working a lot.
5	Teachers with a long tenure, who dedicate relatively little time to activities that accompany conducting lessons.

Table 6
Teacher clusters according to gender (in %)

Gender \ Cluster	1	2	3	4	5
Men	14.6	8.3	10.5	12.7	11.2
Women	85.4	91.7	89.5	87.3	88.8

Table 7
Children per teacher by group

Cluster	1	2	3	4	5
Number of children	1.15	1.57	1.18	1.11	1.53

number of offspring, previous work outside the teaching profession, work outside school, average monthly household income and self-assessment of their work. The choice of these variables was dictated by the information available from the *A study of teachers' working hours and conditions*.

Women accounted for 80% of the total sample but for those who taught five core subjects they accounted for 88%. Table 6 shows that slightly more men are teachers with little work experience and weak engagement with preparation (cluster 1). They account for slightly fewer in cluster 2, those with more work experience and engaged with preparation for lessons for longer times.

In the light of the fact that the majority of teachers are women it is possible that child rearing could influence work hours and professional commitment. Table 7 presents the average number of children per woman in each cluster, showing sharp distinctions. Clusters 2 and 5, those with more work experience, have more children on average. Remaining clusters 1 and 4 are mostly younger. Older women who report spending extensive time on activities auxiliary to teaching appear in cluster 3. Teachers from these last three clusters have fewer children.

Young teachers with fewer than 15 years' experience more often reported having work experience from outside the teaching profession. This may be related to the system change in Poland which followed the events of 1989. Indeed, most students attending universities since then are more likely to have experience of work activities outside their study interests or planned future work.

Table 8
Teachers with experience outside the teaching profession (in %)

Occupation outside teaching \ Cluster	1	2	3	4	5
Yes	31.0	17.7	24.6	28.1	20.1
No	69.0	82.3	75.4	71.9	79.9

Table 9
Extra work outside school, by group (in %)

Additional paid work outside school \ Cluster	1	2	3	4	5
Yes	18.0	9.3	17.0	16.3	11.1
No	82.0	90.7	83.1	83.7	88.9

Table 10
Average monthly household earnings, by group (in PLN)

Cluster	1	2	3	4	5
Average household income	3 589	4 071	3 378	3 474	3 596

Seasoned teachers less frequently reported working outside the profession (Table 8, clusters 2 and 5). This is consistent with the previous explanation and suggests that younger teachers are more mobile professionally, which is also likely for people outside the teaching profession.

The home financial situation may influence commitment of teachers to their work. It is reasonable to expect a difference between those from richer and poorer families, as measured by per capita household revenue. The results in Table 9 seem to confirm this hypothesis. Teachers from group 3 could be expected to have the greatest opportunity for longer work. Teachers with lengthy work experience and high commitment to their work (cluster 2) are from financially more secure households. It should be remembered that these teachers have life partners of a similar age, at the stage when their earnings potential is highest. An additional fact is that teachers who devote considerably more time to their work (cluster 3) tend to have the weakest financial situation at home (Table 10).

The final dimension to investigate concerns teachers' opinions about their work. We reviewed the opinions of teachers about their teaching loads, as well as the degree to which they agreed or disagreed with selected statements about their work. Table 11 presents the teachers' opinions measured on the five-level Likert scale. Also presented is an estimate of standard deviations adjusted for discrete data, using the methodology of Withers and Nadarjah (2011). The first surprising observation relates to small differences between the identified clusters in their opinions about most of issues presented.

The second emergent tendency is a clear contrast between cluster 3 and the remaining clusters. This cluster includes the teachers with varied experience who devote the most time to teaching-related activities. This group disagrees with half of the tested opinions, in particular those regarding stability of employment and salaries. Beyond this, this cluster disagreed strongly with statements that teaching profession guarantees longer holidays, a better chance to raise children

Table 11
Teacher opinions about their work[*]

Statement	Cluster					*M*	*SD*
	1	2	3	4	5		
How do you regard the regulatory weekly number of teaching hours?	3.25	3.00	3.04	3.27	3.04	3.15	0.16
Teacher's job ensures me personal development.	1.97	1.77	1.82	1.79	1.83	1.85	0.22
Teacher's job ensures me contact with people.	2.50	2.46	2.51	2.45	2.58	2.50	0.27
Teacher's job ensures that I have contact with people.	1.37	1.37	1.29	1.34	1.42	1.36	0.15
Teacher's job ensures me stable employment.	2.49	2.28	2.68[(a)]	2.51	2.29	2.43	0.30
Teacher's job ensures me satisfactory earnings.	3.75	3.86	4.07[(a)]	3.76	3.93	3.83	0.25
Teacher's job ensures me easier organisation of childcare.	2.83	3.04	3.16[(a)]	2.97	2.89	2.94	0.30
Teacher's job ensures me longer holidays than other jobs.	1.94	2.14	2.48[(a)(b)]	2.16	1.91	2.06	0.28
Teacher's job ensures me easier reconciliation of professional with family life.	3.23[(a)]	3.67[(a)]	3.76[(a)(b)]	3.62	3.34	3.46	0.31
Teacher's job offers me prestige.	3.74	3.97	3.80	3.80	3.83	3.82	0.26

[*] For question 1, scale from – the load is too high to 5 – the load is too low. For the remaining questions, a 5-point Likert scale (1 – I strongly agree, 5 – I strongly disagree).
[(a)] Values differing from the average value by at least 0.2 point on the Likert scale.
[(b)] Values differing from the average by at least one *SD*.

and a balance between personal and work life. It is worth noting that these opinions were more accepted by teachers with long work experience and working long hours. Teachers with little experience who do not spend much time on work activities outside the classroom have a markedly contrasting opinion.

It may be also worth commenting on the general opinions of teachers as a single group. Teachers in general tend to agree that their work offers human contact and possibilities for professional development. They also believe that they have longer holidays and – albeit to a lesser extent – that they have stable employment and opportunities to influence others. Teachers reject the assertion that teaching promises them satisfactory earnings or social status. They also do not agree that teaching makes it easier to reconcile work and family commitments.

Suggested teacher profiles

Based on the comparative analysis of the five clusters of teachers shown above, a typology for Polish teachers according to their relationship with work can be tentatively proposed. The names suggested to identify clusters are shown in Table 12.

The names proposed for the clusters are purely conventional. Two, in particular, demand further discussion. "Needing support" is a term generally applied to pupils. No similarity between these two groups is intended here. A second clarification applies to cluster 5, whose members are described as "burnt out teachers". There is extensive body of research into professional burn out of teachers. Typically, this is identified according to three characteristics: emotional exhaustion, cynicism and reduced engagement (Hakanan, Bakker and Schaudeli, 2006; Pyżalski and Merecz, 2010). The simplified analytical procedure which was used here, due to data limitations, does not allow it to be tested that teachers included in this sub-group conform to this definition. The name was chosen to be succinct but resonant.

Each cluster is briefly outlined below. Both daily and less frequent recorded activities are exploited to arrive at these descriptions (Table 1). However, these data are rather limited, so descriptions based on them can only be rather tentative. In particular, it is not possible to offer more detailed characteristics for the remaining two clusters.

"Needing support" is a group of young teachers who devote little time to their work. There are more men in this group than average, which suggests that men find it more difficult to adapt to work in the school. Above all, these are young people with the enthusiasm typical for people with little experience. They more frequently have had the experience of work outside teaching and besides work in the classroom they spend relatively more time on career development than administration.

Teachers "needing support" are significantly less integrated with the life of the school. Compared with the other clusters,

Table 12
Suggested names for teacher clusters

Cluster	Tenure	Time dedicated to everyday activities	Proposed name
1	Short	Short	Needing assistance
2	Long	Long	Professionals
3	Varied	Very long	Overworked
4	Short	Long	Young enthusiasts
5	Long	Short	Burnt out

they less frequently help during practice exams or assist with activities organised on non-working days, excursions with students, trips and classes held off the school premises. They also spend less time on documenting student achievement, in meetings with teachers of the same subject or at meetings with individual parents. They do not undertake many additional paid duties, perhaps owing to poor remuneration. It may be no surprise that they feel that the job allows them to achieve a balance between work and their personal life more frequently than other teachers. It is worth adding that they less frequently use the available time between classes for lesson preparation than average and take food breaks more often.

Unfortunately, the data is insufficient to answer many important questions about these teachers, so two possible characteristics for this cluster are proposed:

- These teachers are not genuinely interested in teaching, maybe they are considering a change of job and consider time spent teaching a waste of time. This might explain their low involvement in the life and work of a school.
- These teachers are comfortable with their jobs. They regard their work in the same way as an office, so they spend as much time on their tasks as is necessary but refuse to spend time on other work duties.

Professionals include fewer men than average for the survey sample and are less likely to undertake extra work outside school. They do not often believe that their occupation allows them to harmonise work with their personal life. At the same time, these teachers are more frequently involved with classes held off school premises and documenting pupil achievement. Since they are involved with many activities, they spend more time than average on administration. They prepare lessons and have contact with parents during unallocated time between activities. They are on average significantly older, in the same way as the "burnt out" teachers, and so, they spend little time on career development. The majority are already well-established and also have relatively more offspring. It is important to note that their mean household income is the highest for the clusters identified.

It can be tentatively suggested that this cluster is made up of experienced, hard-working teachers. This makes it difficult for them to reconcile work with personal life. They can dedicate a lot of time to work in school due owing to their stable household income.

Overworked. This classification requires some discussion since a similar description has not been used previously in the literature. In the present study this cluster is very different from the others due to the enormous amount of time they devote to teaching and all other work related activities. Teachers from this cluster direct much more time to practice exams for their students, during non-school days or off the school premises, student excursions and trips, documenting student achievement, attending meetings with fellow subject teachers and meeting parents. At the same time they are less confident than other teachers, that work in school offers them stable employment, adequate remuneration, convenient organised child care, longer holidays or a life easily harmonised with the exigencies of work. It is therefore not very likely that they are particularly satisfied with their work. Moreover, teachers from this cluster are mostly commonly from households with low income. They also least frequently report resting between lessons – they tend to spend this time talking to pupils.

The following characteristics for this cluster might be suggested: these are hard-working teachers, not entirely happy with their choice of career. They cannot find much good to say about what their profession means to them, and strikingly, they do not feel it guarantees them long holidays. Since

their household income per person is low, it is possible that these teachers work particularly hard because they are under financial pressure.

Another interpretation might be that these teachers' work habits stem from their feelings of duty and professional responsibility. This is suggested by the fact that they dedicate time to many activities which do not offer significant additional income. On the basis of the available data it is not possible to rule out this argument, although it does not seem probable.

Young enthusiasts are teachers who are difficult to describe in detail. They have worked in non-teaching jobs more often that other clusters, but this might be simply associated with age, in the same way as teachers "in need of support". Also, they spend less time on administration and more on career development – again, an understandable finding, given that preparation for a career requires a lot of effort.

Burnt out teachers, similar to "young enthusiasts", cannot be precisely characterised. They are less often involved with activities organised on non-working days or outside school. They have relatively more children. At least in part, these tendencies emerge because they are older. It is worth noting that these teachers very rarely talk to pupils, parents or other teachers and rarely perform administrative duties. During school breaks they rarely mark student work. Their weak involvement in the life of the school strengthens the impression that they are, indeed, professionally exhausted (Kierenko and Zubrzycka-Maciąg, 2012).

Conclusions

The availability of empirical data from a large representative group of teachers allowed the identification of five distinct clusters. In particular, the identification by this study of the cluster described as "overworked" is an entirely new finding. The success of cluster analysis does not only lie in the identification of clusters, but most importantly in the possibility to describe them in a way which is both useful and revealing. From this point of view, the findings presented here can, at best, be rather tentative. Insufficient data were collected in the teacher survey from which data was sourced for the analysis to allow a more complete description of the clusters. As a result, the picture presented is incomplete, uncertain in some respects and rather superficial in the cases of two clusters. This results from the fact that the original survey was designed to address different research questions, particularly in the context of public debate about how much time Polish teachers actually work. Unfortunately the survey did not collect other data which would be important for a more detailed characterisation of teachers, such as their psychological and sociological data, career paths or school directors' assessments of their performance at school and in the classroom.

The difficulties implicit in the analysis presented in the present article are illustrated by its failure to allow in depth description of the "overworked" cluster of teachers. Elucidation of teachers' true attitudes to their work, as interpretable from their stated opinions and working habits, therefore remains an important area open for future research.

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