

The logo for COPSOQ, consisting of the word 'COPSOQ' in a bold, sans-serif font.

Teaching Staff in the European Union  
*A Survey on psychosocial factors in the workplace*

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# European-Wide Survey on Teachers Work Related Stress – Assessment, Comparison and Evaluation of the Impact of Psychosocial Hazards on Teachers at their Workplace



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## Abbreviations

ANOVA	Analysis of variance
AOK	German statutory health insurance fund (Allgemeine Ortskrankenkasse)
CBI	Copenhagen Burnout Inventory
COPSOQ	Copenhagen Psychosocial Questionnaire
DAK	German health insurance fund for employees (Deutsche Angestellten Krankenkasse)
DG EMPL	Directorate General Employment, Social Affairs and Inclusion
EFTA	European Free Trade Association
ETUCE	European Trade Union Committee for Education
EU	European Union
FFAS	Freiburg research centre occupational and social medicine (Freiburger Forschungsstelle Arbeits- und Sozialmedizin)
FASS	Questionnaire on working conditions in schools (Fragebogen zur Arbeitssituation an Schulen)
FIOOSH / BauA	Federal Institute for Occupational Safety and Health (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin)
EU-OSHA	European Agency for Safety and Health at Work
WRS	Work-Related Stress
BIBB	Federal Institute for Vocational Education and Training (Bundesinstitut für Berufsbildung)
IAB	Institute for Employment Research (Institut für Arbeitsmarkt- und Berufsforschung)
ICC	Intraclass correlation
PCA	Principal component analysis (in factor analysis)
SPSS	Statistical Package for the Social Sciences (IBM SPSS, Statistics standard)
WPC	Work-Privacy Conflict

# 1 Introduction

## 1.1 Background (Initial situation, starting position)

Working conditions in almost all kinds of organisations have changed considerably over the last decades. Alongside the comprehensive changes in production conditions and employment in industry, administration and service, the demands on employees are also changing. Temporal and local flexibility, resilience or social competences are increasingly evolving into essential key qualifications.

At the same time a major increase in sick leave due to psychological and psychiatric diagnoses has been reported over recent years and decades, leading to higher treatment costs for this diagnostic group as well (Kuhn 2010). One example from a major German health insurance company “AOK”: sick leave due to mental diagnoses increased by 80% from 1997 to 2008 while cases of sick leave due to other diagnoses (musculoskeletal, accidents, cardiovascular, respiratory, etc.) remained almost stable (Macco & Schmidt 2010).

In the past, the lack of validated and easily applicable measurement instruments (questionnaires) has been a barrier to companies and other organisations (e.g. schools) in the assessment of their employees’ mental stress.

Another well-known obstacle to measuring psychological workload and strain is the uncertainty of the theoretical construct – different theories and constructs include quite different aspects in their definition and their assessment of psychosocial factors at work (Kopp et al. 2009, Kristensen 2005).

Basically, the methods available for assessing psychosocial (risk) factors at work are as follows:

- assessment by external and internal experts, such as organisational psychologists, safety engineers or occupational physicians monitoring and evaluating the work processes and workplace situation,
- experimental physiological measurements with varying workload (limited to certain parameters assessable by these means), and
- surveys of employees; here the most commonly-used methods are paper & pencil questionnaires or online surveys.

One advantage of questionnaire-based surveys addressed to employees directly is the opportunity they offer for comprehensive elicitation of adequate data on the workplace situation and/or stress – even aspects that are almost impossible to assess by expert monitoring can be included in questionnaires (such as “sense of community”). Another advantage is that every employee and his or her opinion on the workplace situation can be taken into account and included in the assessment (participation). The major limitation of employee surveys is that there is always a subjective aspect to the evaluation of the workplace situation. This fact is widely discussed in occupational sciences, and we assume that the comprehensiveness of an assessment (content validity) is at least as important as its “objectivity” and that

the best way of assessing psychosocial factors at work consists in the development and testing of questionnaires with the best possible psychometric properties (see: Kompier 2005).

The instrument used in this Europe-wide pilot study, carried out on behalf of the European Trade Union Committee for Education (ETUCE), is such a scientifically-validated questionnaire, which has already been widely used for health-promoting projects and risk assessment processes.

## **1.2 State of the art concerning teachers' health**

In comparison to other professions, teaching is remarkably mentally stressful, but less physically so. Due to this fact, the working situation of teachers and the state of teachers' health has been increasingly taken into account in the work science over the past 30 years (Krause et al. 2011).

Since 1993 the Federal Statistical Office of Germany has regularly published the retirement figures for teachers. It is noticeable that many teachers take early retirement for medical reasons/diagnoses (Krause & Dorsemagen 2011).

The health or ill-health of teachers as a reason for early retirement and absenteeism has become an important issue in health research and research into working conditions in schools.

Various studies report an increased risk of burnout among teachers (Vandenberghe & Huberman 1999). According to a survey in the German-speaking area using the Maslach Burnout Inventory (MBI), the rates of burnout in various groups of teachers range from 10 to 30% (Gieske & Harazd 2009). In a study where personal interviews were conducted with teachers from Switzerland, these rates were confirmed (Kunz et al., 2008) and it was found that some rates even exceeded 30 % (Stöckli 1998).

A screening questionnaire for health problems (General Health Questionnaire, GHQ 12) revealed conspicuous problems for almost 30% of teachers (Bauer et al., 2007). For nearly 22% of teachers, a lack of balance between effort and reward has been determined (Unterbrinck et al. 2007). Considering the numerous indications of distinct stress symptoms (e.g. emotional exhaustion) in at least 20 % of all teachers, it can be assumed that there is an urgent need for action and support regarding health (Bauer 2009).

An analysis of the factor "ill mental health" (= high number of self-reported psychosomatic complaints related to work) by occupation using the data from the representative German BIBB/IAB-study (35,000 employees) showed that teachers are among the groups that report most complaints of this type. The Odds Ratios (OR, measure of the relative risk compared to an overall value) for the different teacher groups are in the range of 2 to 3 compared to the general mean of all occupations (Hasselhorn & Nübling 2004).

Stress and strain have a negative impact on teachers' health. Among the relevant stressors that arise from teaching, conflicting objectives and expectations, role conflict and role ambiguity have been mentioned (van der Doef & Maes 2002).

A high workload, quantitative overload, severe time pressure, prolonged periods of peak workload, the acquisition of several additional tasks in addition to teaching duties are important characteristics in the organisation of work with a high impact on mental health (Abel & Sewell 1999, Bradley 2007).

Social conditions, such as good collaboration in the college (Dick 1999), high quality of leadership (Blasé et al. 1986, Kunz et al. 2008), good collaboration with parents and common educational visions of the college (Krause et al. 2006) are of high relevance, as are equally a climate of innovation and fairness in dealing with mistakes (Jacobsson et al. 2001).

In the "Fourth European Working Conditions Survey" performed in all 27 EU states in 2005 (Parent-Thirion et al., 2007) a relatively high risk of 7.6% (overall mean 5%) for "violence at work" was ascertained for teaching professionals (however teachers are not the group most affected, violence was more frequently experienced by health professionals and protective services and some other occupations).

The same study revealed that the most critical values for "psychological health factors" among all professional groups are measured in the education sector, while the "physical health factors" for these occupations are below average. The authors conclude that this is due to a work environment that is highly psychologically demanding but less physically so.

These studies on the workplace situation and the well-being of teachers show that the specific working requirements of teachers bear some structural risk factors that might or are known to have a negative impact on teachers' health. However there are also some structural advantages to the teaching profession when compared to other professions that should be mentioned and that might act as compensating or protective factors in the strain-stress relationship. These are for instance: low level of formal shift work (evening, night), low level of formal weekend work, relatively low level of physical hazards, and – at least in most European countries – high level of job security (not at the same level in all countries, see results of this survey below). For additional factors see Parent-Thirion, 2007.

In COPSOQ studies in Germany with more than 50,000 teachers and over 35,000 persons in other professions (see figures 1 to 3 below) we found higher levels for emotional demands (69 to 52 points on average on a 0-100 scale) and work-privacy conflict (59 to 42 points) in teachers; burnout symptoms were also more frequent in teachers (48 to 42 points). On the other hand, positive factors such as influence at work (53 points for teachers and 42 for all professions) or possibilities for development (76 to 67 points) were found to be more elevated in teachers (remark: to avoid regional bias, results for teachers were regionally weighted in this analysis since most of them were from the same region).

Some studies have also shown that differences in the workplace situation do not occur only by profession but also by country or by a mix of country and profession. In the Fourth European Working Conditions Survey the evaluation of "psychological

health factors” differs even more by country (with Greece having by far the most unfavourable value. See also Kuhn 2010 with the same finding for the factor “stress at work”).

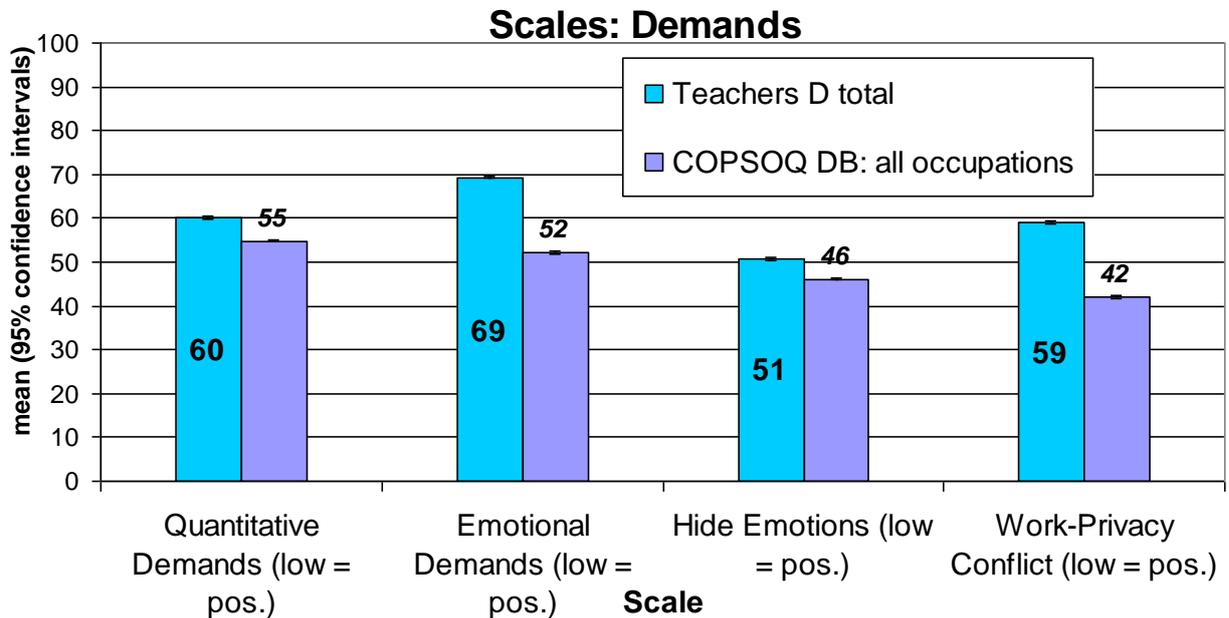


Figure 1: Mean values of 4 aspects concerning “Demands” for teachers compared to employees in general (German COPSQ studies).

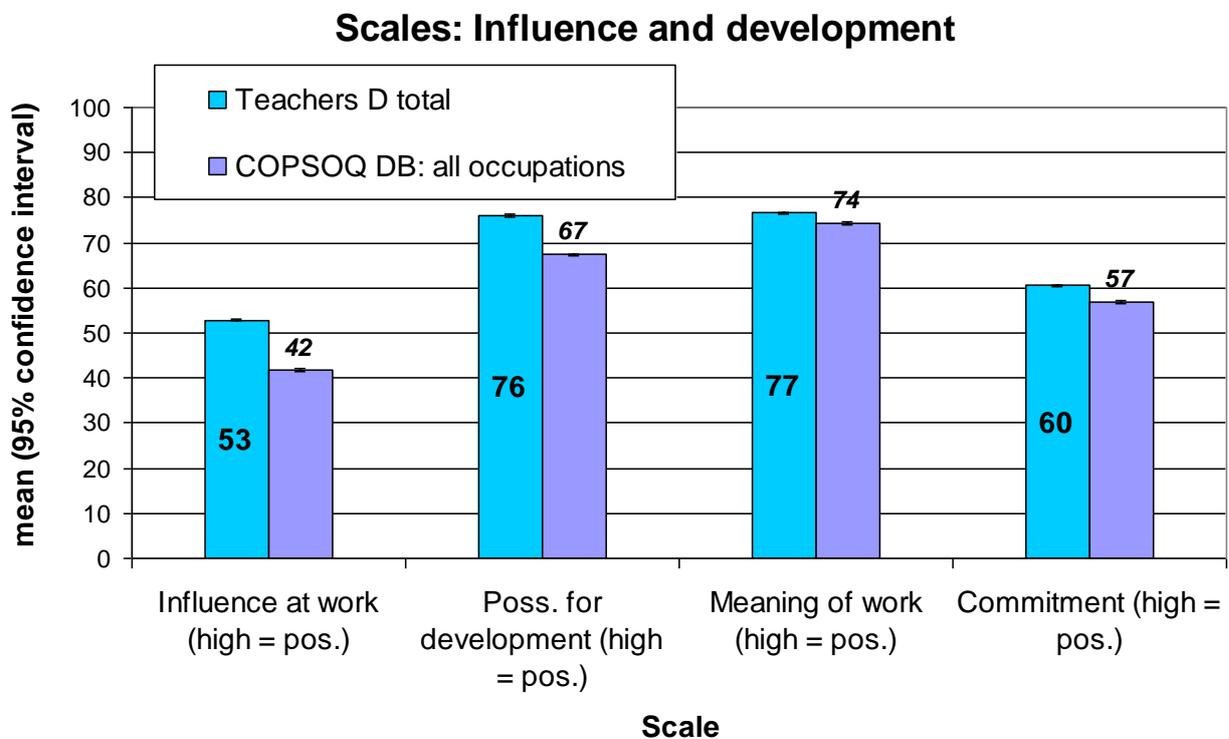


Figure 2: Mean values of 4 aspects concerning “Influence and development” for teachers compared to employees in general (German COPSQ studies).

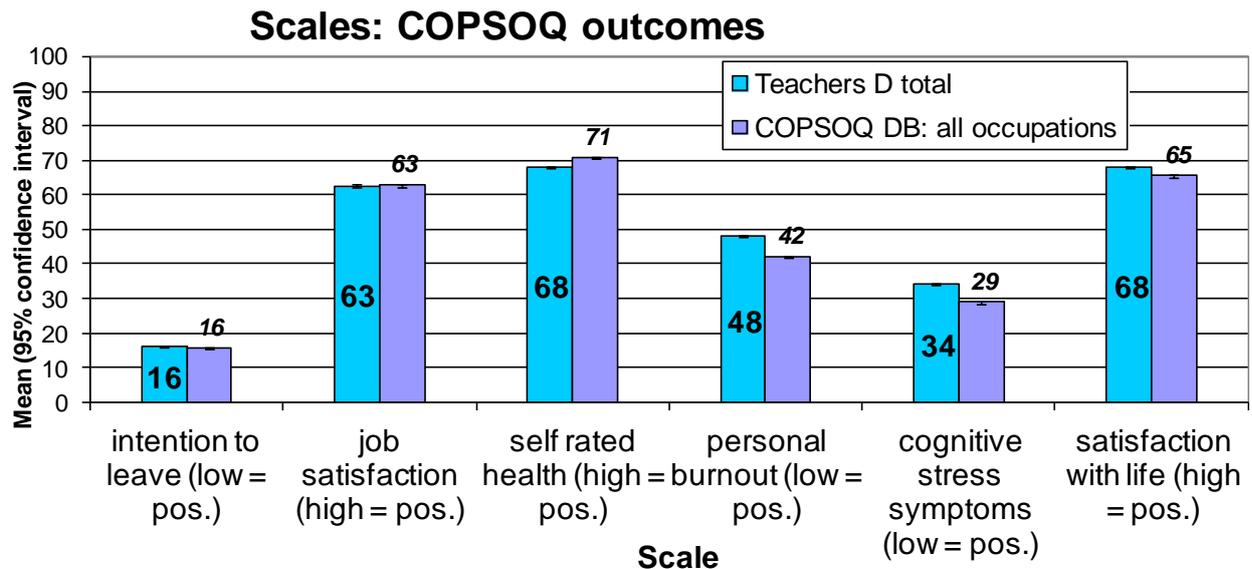


Figure 3: Mean values of 6 aspects concerning “Outcomes/reactions” for teachers compared to employees in general (German COPSOQ studies).

### 1.3 Focus on workplace factors and employees

Even if in recent years some studies have focused on working conditions rather than on outcome factors such as health, burnout and stress symptoms, research and findings in literature are still outcome-centred. This applies to all professions to a certain extent, but especially to teachers where a lot of research has been centred on burnout, health, coping strategies and personality factors.

However, for the goals of work-related health prevention and a complete risk assessment in the field of psychosocial factors the instrument has to be focused on the workplace, since the workplace situation is the primary field for prevention.

A big advantage of Europe-wide studies using the same instrument and the same procedure is the opportunity for comparison; i.e. comparison of psychosocial factors at work for teachers in the EU as indicated in the tender of this study (for this point and more information on the aims of the survey see tender in annex 1).

ETUCE had already performed a survey on work-related stress amongst teachers, asking health and safety experts in trade unions in the EU and EFTA countries for an evaluation of the workload highlighting the need for risk assessment processes (Billehøj 2007). In this project we have the opportunity to assess, evaluate and compare the perceptions of the teachers themselves at a grass-root level.

The current study

- focuses on the workplace situation as the primary area for risk assessment and prevention (rather than on the outcomes),
- asks the employees themselves (grass-root level, participative approach),
- collects data in all countries with the same questionnaire and method to allow direct comparison.

## 2 Methods

### 2.1 The COPSQ: Copenhagen Psychosocial Questionnaire

The COPSQ (Copenhagen Psychosocial Questionnaire) was originally developed and validated by T.S. Kristensen and V. Borg of the Danish National Institute for Occupational Health in Copenhagen.

It includes aspects from various theories and models and is thus broader and more comprehensive than the older classical models DCS (Demand-Control-Support model, Karasek & Theorell 1990), ERI (Effort-Reward-Imbalance model, Siegrist 1996) and other instruments.

COPSQ is thus “theory-based but not attached to one single theory” (Kristensen 2005). Burr (2010) was able to show recently that the aspects included in COPSQ and going further than classical models could explain more variance in outcome factors like vitality or sick leave than DCS and ERI. This means that supplementary aspects of workload are measured with COPSQ that are important for the health outcomes and thus indispensable for a comprehensive assessment of risk factors at work.

Under the leadership of the FFAS (Freiburg research centre occupational and social medicine) and funded by the German FIOSH/BAuA (Federal Institute for Occupational Safety and Health) a German version of the questionnaire was adapted and tested in Germany on the basis of a broad sample (N=2561) from different professions. This validation study showed good properties regarding content, construct and criterion validity, scale reliability, generalisability and practicability of the instrument (Nübling et al. 2006).

Currently the COPSQ is used in about 15 countries in Europe and abroad; the FFAS is the German study centre. A first international workshop of COPSQ users in Copenhagen was held in 2007, the second one was organised and held in Freiburg in 2009, and a third was held in Barcelona in October 2011. In addition, a specific workshop on the international research using COPSQ was held at the ICOH-WOPS (International Commission on Occupational Health, Work Organisation and Psychosocial Factors) in Amsterdam in 2010. The international COPSQ community formed the COPSQ network in 2009 headed by an international steering committee consisting of Jakob Bjørner (Denmark), Salvador Moncada (Spain) and Matthias Nübling (Germany). A special issue on the COPSQ was published by the Scandinavian Journal of Public Health in 2010. All information on cooperating persons in the network, publications (including the special issue) and presentations concerning the workshops and conferences mentioned are available at [www.copsq-network.org](http://www.copsq-network.org).

The German standard version of the COPSQ has been in use since 2005 as a suitable screening tool for measuring workload and stress in all kinds of enterprises and organisations. In a cooperation model between science and enterprises, the results of COPSQ surveys are stored anonymously in a large and dynamically expanding database. Profession-specific reference values taken from this database facilitate interpretation of the results and prioritisation of improvement measures in

the different organisations performing COPSOQ surveys. This database now includes more than 80,000 persons (Nübling et al., 2006, Nuebling/ Hasselhorn 2010). A sample of 10,000 persons from this database, representing the profession-specific composition of German employees, was recently placed on an interactive public online platform where users can retrieve profiles of workplace factors (25 scales of COPSOQ) for subgroups defined by occupation, age, gender and year of survey ([www.copsoq-datenbank.de](http://www.copsoq-datenbank.de), available only in German)

## 2.2 COPSOQ questionnaire: teacher version

One major advantage of the COPSOQ is its general applicability to all professions and jobs since the questions in the standard version apply to all kinds of jobs and workplaces. This allows comparisons of working conditions across different professions and jobs. However, this implies that specific psychosocial factors that may be only relevant in certain professions are not included in the standard COPSOQ.

For the comprehensive assessment of workplace factors for teaching personnel in a large study in Germany (region of Baden-Württemberg), further aspects addressing teacher-specific factors were included in the standard COPSOQ questionnaire. These items were mostly taken from the FASS questionnaire by Kaempf and Krause (2004).

The psychometric properties of these supplementary scales on “specific aspects for teaching staff” were successfully evaluated in a special pretest survey (Nübling et al. 2008).

Two scales were removed from the standard COPSOQ when preparing the teacher version: “Insecurity at work” was removed, since nearly all teachers in Baden-Württemberg were public servants without risk of unemployment, and “degree of freedom concerning taking breaks and holidays” was deleted since this does not apply to teachers who cannot decide when to take a break or holiday during the teaching period.

The content of the COPSOQ for teaching personnel in Baden-Württemberg is presented in figure 4. This questionnaire was used as an online survey from 2008 to 2010 in 8 tranches to all 4,200 state schools with 110,000 teachers in Baden-Württemberg.

A slightly different version was used in the region of Bremen (150 state schools and 6,000 teachers). Here the scale “insecurity at work” was re-included, since a relevant percentage of teachers in this region had contracts with the possibility of dismissal. Furthermore two items on “verbal abuse” and “physical violence” were included.

Smaller surveys with adapted questionnaires were conducted with pilot schools in other regions, as well as with some private schools.

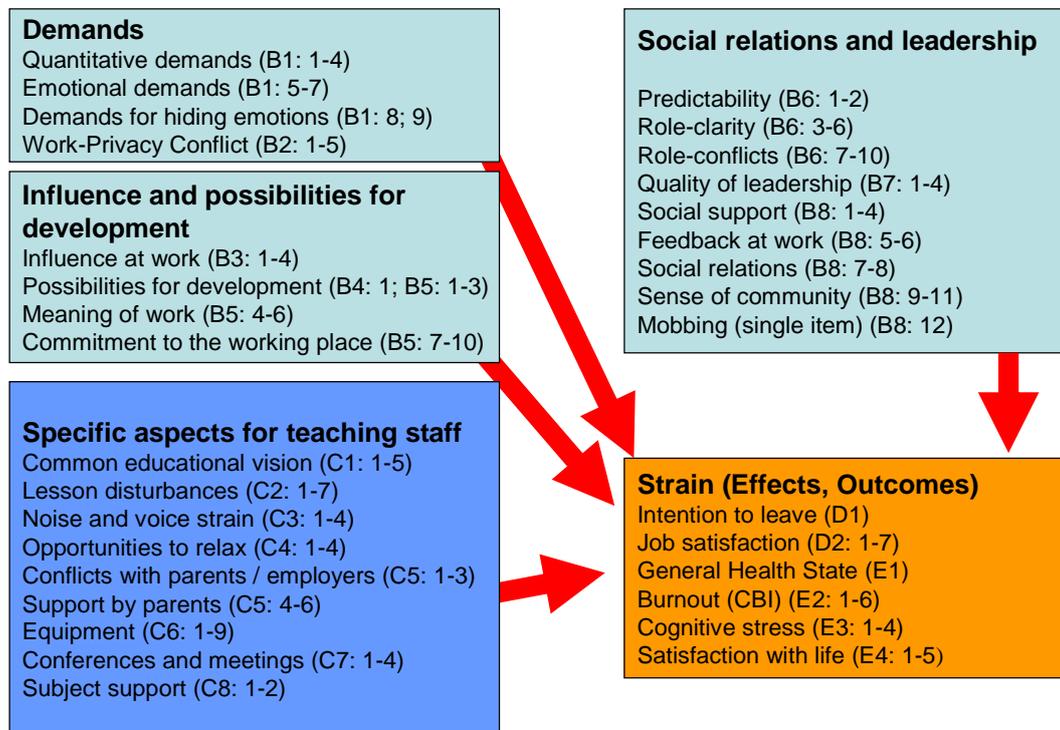


Figure 4: Content of questionnaire COPSOQ Germany (Baden-Württemberg) teachers 2006

## 2.3 Performance of the European teacher survey

In 2010 ETUCE successfully applied for a grant from the European Commission, DG EMPL and published a tender for carrying out a pilot study on psychosocial factors at work for teaching personnel in 500 schools in the EU and EFTA countries.

Our institute, the FFAS (Freiburg research centre for occupational and social medicine) was the successful tenderer for the research work.

An Advisory Group was composed of: Susan Flocken (project coordinator of ETUCE), Anders Eklund (Läraryförbundet, Sweden), Ana Gaspar (Federação Nacional dos Professores Portuguese (FENPROF), Portugal), Anne Jenter (German Education Union (GEW), Germany), Kounka Damianova (Bulgarian Teachers' Trade Union, Bulgaria) and Charles Nolda (Belgium, representing the European Federation of Education Employers, EFEE).

The COPSOQ teacher questionnaire as described above was modified for the ETUCE European pilot study.

All final content, supplementary questions and other adaptations of the questionnaire for the ETUCE survey were discussed with the FFAS and the advisory group.

The final questionnaire was prepared and made available in the following languages: Bulgarian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Italian, Latvian, Lithuanian, Polish, Portuguese, Romanian, Slovak, Slovenian, Spanish and Swedish.

All items of the questionnaire were translated in this project retaining already validated versions of the standard COPSOQ (e.g. the English or Danish original COPSOQ) in their original wording.

The web platform [www.teacher-copsq.eu](http://www.teacher-copsq.eu) (see figure 5) was set up for the project. In order to prevent misuse by web plagiarists and to facilitate access even with small errors in link spelling, some similar sounding links like [www.teachers.copsq.eu](http://www.teachers.copsq.eu) or [www.teacher-copsq.com](http://www.teacher-copsq.com) were reserved too and a redirection to the main site was established.

Features / functions of the platform were:

- questionnaire (links for languages in selection menu)
- information texts in all languages
- connection to online database (SQL)
- data transmission of completed questionnaires via secure SSL connection
- individual direct feedback for single participants immediately after completion of the questionnaire
- site notice (with responsible person)
- contact form for questions.

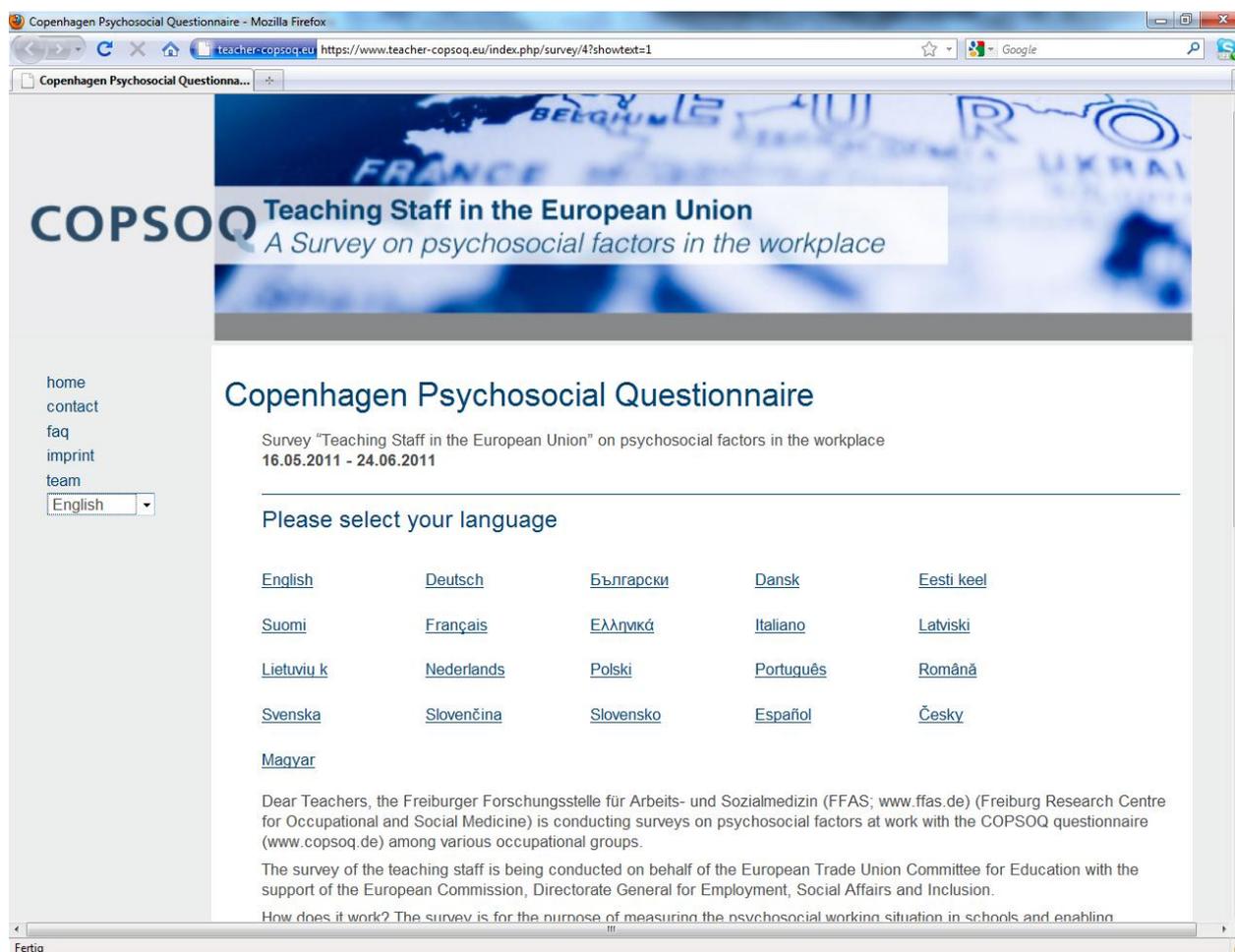


Figure 5: Home of European teacher survey

In April 2011 a pretest was carried out. The advisory board and national representatives in the EU and EFTA countries received the login data from FFAS and could test the questionnaire and the website features to give feedback to the ETUCE or the FFAS. A total of 125 persons (16 languages) took part in the pretest. Based on the remarks made in the pretest, some minor corrections were made to the final questionnaire.

In the meantime, schools willing to participate in the pilot study were recruited by ETUCE and listed on an MS Excel sheet. FFAS assigned an internal school number as a login and a password to each school, these login data were communicated to the schools via ETUCE and national representatives. The survey was carried out between 16<sup>th</sup> May and 17<sup>th</sup> June 2011.

The content of the final questionnaire for the ETUCE pilot study on the level of scales is given in figure 6, the exact wording of all questions and the schedule on scale construction is given in part 2 of this report.

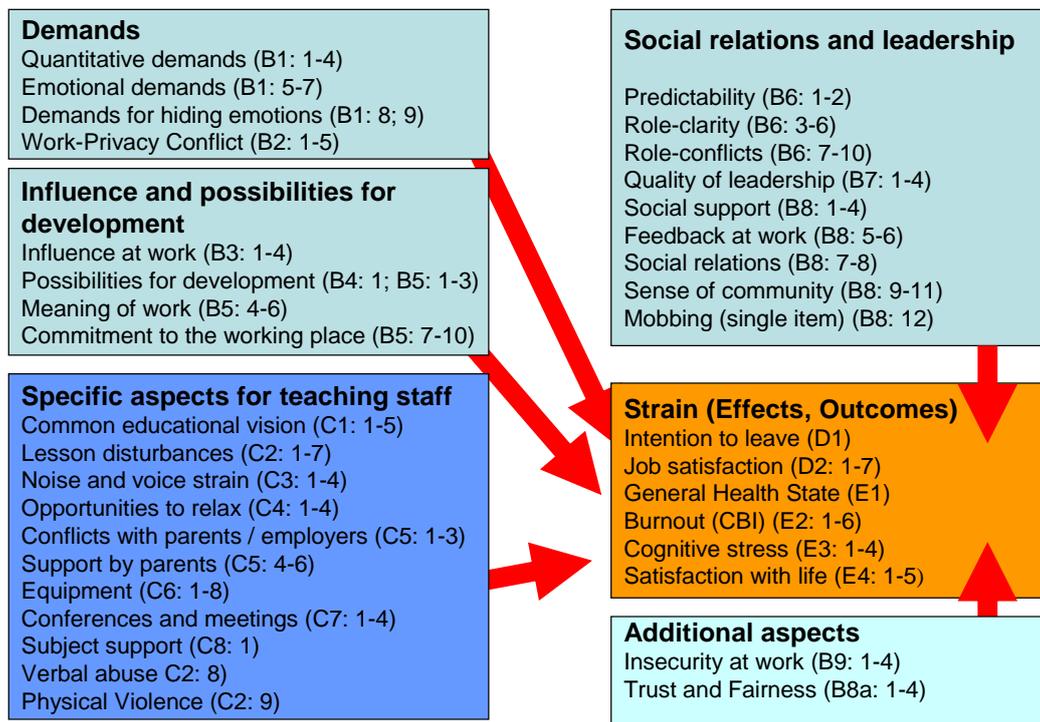


Figure 6: Content of questionnaire COPSOQ ETUCE teachers

### 2.3.1 Reports for single schools

A total of 716 schools in all 27 EU and 3 EFTA countries was invited to take part in the pilot study from 16<sup>th</sup> May to 17<sup>th</sup> June 2011.

The main website of the survey, including information, FAQs, site notice, contact form, etc. was accessible without any authorisation.

For access to the questionnaire however, each participant (teaching staff) had to use the login data of his/her school. The login number provided by FFAS served as the identifier of the country and the school. Participants were free to choose a language in the drop-down menu. This ensured that all official languages in all countries were available (i.e. Italian, German and French for Switzerland). But there was no limitation to the official languages of a country; every participant could choose his/her language of preference. It was also possible to change the language while completing the questionnaire.

Immediately after completion of the survey, the single participants received direct feedback comparing their personal results to a mean value of participants having completed/answered this questionnaire (mean of teachers in Germany, since no international data was available at the beginning of the study). Individuals were free to save or print this personal feedback (and compare it to the school reports later) or

to delete it. In any case on closing the session the feedback was automatically deleted.

The FFAS then analysed the data collected in the survey. Mean values of all aspects of psychosocial factors at work were calculated for each school and graphically compared to the mean of the relevant country as well as the mean of the whole ETUCE pilot study (part 2 of the school reports).

The findings of these comparisons were also expressed verbally in an interpretation in part 1 of the school report. Also in part 1, the participation rate for each school was documented.

Free text comments from question F of the questionnaire (“Are there any aspects for the evaluation of psychosocial work situation missing in the questionnaire?”) were listed in part 3 of the school reports. In the appendix, the complete questionnaire (in English) and the assignment of items to scales were documented.

The reports were printed and stored as PDF files on a CD, together with the questionnaire, the FAQs from the website and a translation of all scale names in the various languages provided in the survey.

Furthermore supplementary information from ETUCE was placed in a specific folder named “ETUCE-material” (11 files): Accompanying letter from the European Director ETUCE Action Plan on Work-Related Stress, ETUCE brochure on the previous WRS project EU Social Partner Framework Agreement on WRS OSH in figures: stress at work - facts and figures General information on the European Sectoral Social Dialogue in Education.

# Online survey in schools

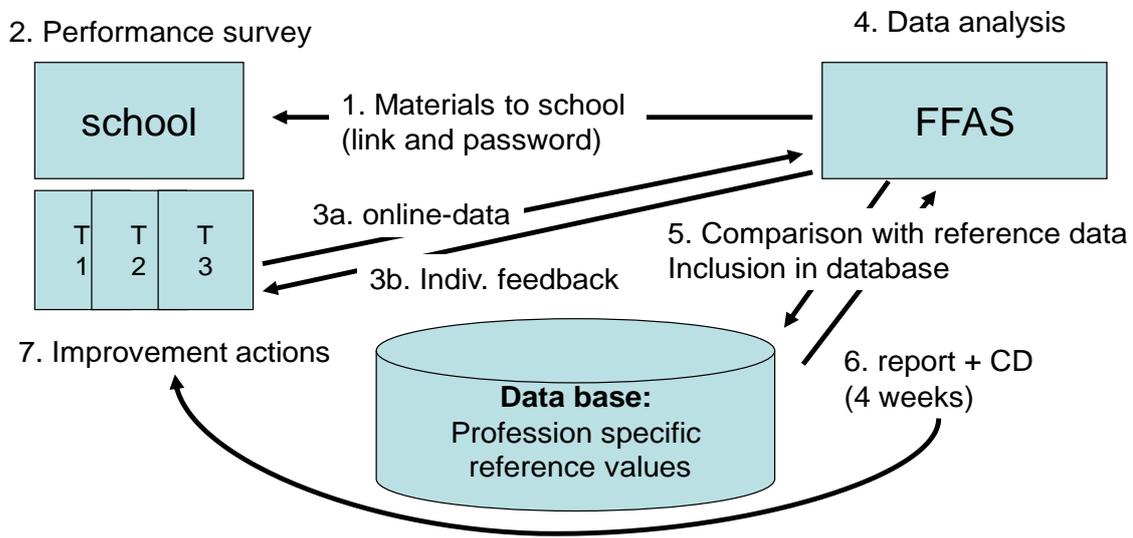


Figure 7: Survey performance

All reports were sent to the schools at the beginning of August 2011. The whole survey procedure from activation of the website for the online survey (1), completion of the questionnaire by single participants, including direct feedback of the personal results, (2,3) to the data analysis (4) and generation of the school reports (5,6) is shown in figure 7.

## 2.4 Calculation of COPSOQ results

The centrepiece of the questionnaire is located in parts B to E, where the general and teacher-specific items on occupational stress and strain are located. Part A of the questionnaire concerns structural data and socio-demography, and part F deals with textual comments.

The final questionnaire includes 36 aspects (33 scales and 3 single items, see above) assessing the psychosocial work environment grouped into different sections: demands (4 scales), influence and development (4 scales), interpersonal support and relationships (8 scales and 1 single item), trust and fairness as well as job insecurity (1 scale each). All these scales are located in part B of the questionnaire. In part D and E there are 6 constructs (4 scales and 2 single items) assessing the employee's reaction to the workplace situation as outcome factors: intention to leave, job satisfaction, general health, burnout, cognitive stress and satisfaction with life. These

parts B, D, and E are (with small changes) the parts forming the standard COPSOQ for all professions.

Finally, part C of the questionnaire contains the specific aspects for teachers, composed by 9 scales and 2 single items: common educational vision, lesson disturbances, noise and voice strain, opportunities to relax, conflicts with parents, support by parents, equipment, quality of conferences and meetings, subject support, verbal abuse, and physical violence.

In total, 130 Likert-scaled items with mostly 5 answer categories are included in the questionnaire. The first of these categories is always the maximum value ("always", "to a very large extent", "applies very much", etc.), while the minimum value is represented as "never", "to a very small extent", "strongly disagree", etc.

These categories are assigned numerical values where the maximum is 100 points and the minimum is zero points (this is the standard procedure for COPSOQ). Since typically various single questions form one scale, the mean value of the scale is computed as the average of the single items (e.g. items B1\_1 to B1\_4 form the scale "quantitative demands"). If less than half of the questions forming a scale are answered by a person, no scale value is calculated (value set to missing).

Important: In COPSOQ high scale values can express a positive as well as a negative finding – depending on the content of the scale. So high "burnout" is of course negative while high "influence" is positive. In all figures in the school reports (in part 2) and in this general report, the direction of interpretation (positive or negative) is explicitly stated for each scale (as an example see figure 8).

Some scales contain both negatively and positively connoted questions, e.g. the scale "C7: Quality of conferences and meetings", where the first and second question are negatively formulated while the third and fourth are formulated positively. In compiling such scales the values of all questions were aligned to the same direction before calculating the scale value (here C7\_1 and C7\_2 were inverted), with the result that a high value for "quality conferences and meetings" is reached with positive ratings for all 4 items.

In order to give an idea of the precision of the assessment, 95% confidence intervals are given for all mean values calculated and presented in this general report as well as in the single school reports.

The following figure 8 gives an example of the graphs in part 2 of the school reports to demonstrate the analysis route.

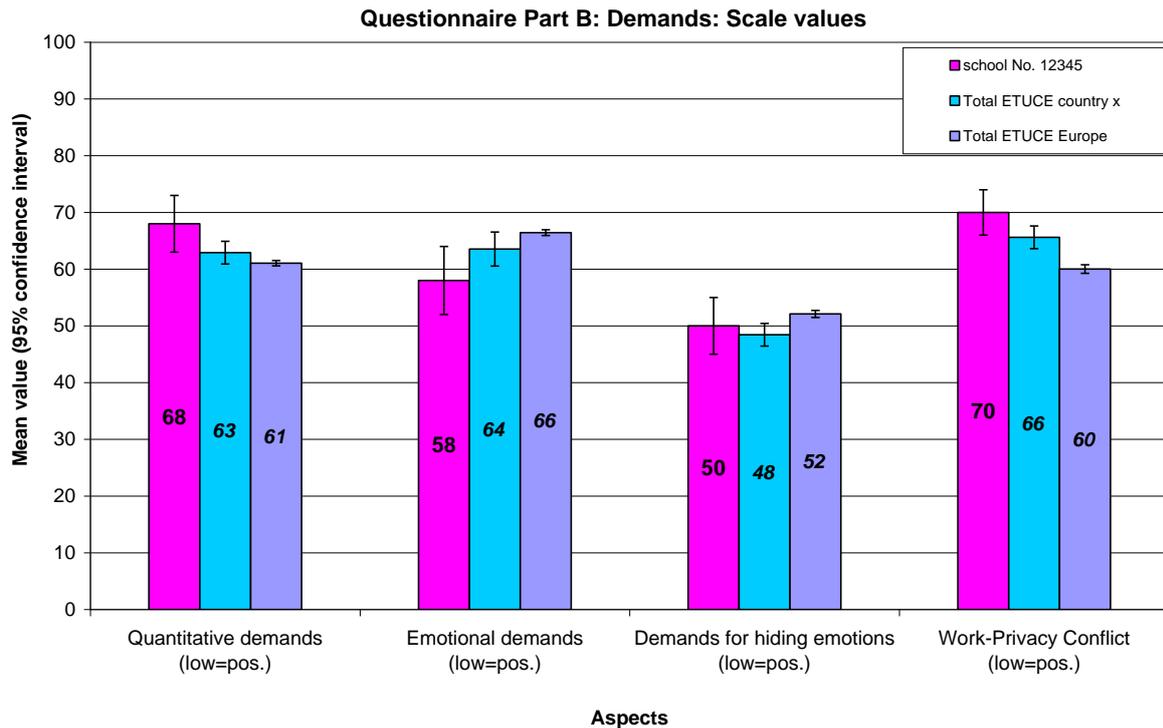


Figure 8: Scale comparison for single schools, example of school report

For all 36 aspects (scales) of the questionnaire the mean values of the single school (mean of all teachers participating in that school, 1<sup>st</sup> bar) is compared to the national mean of all those teachers of the respective country who took part in the ETUCE study (2<sup>nd</sup> bar) and the overall mean across all countries (3<sup>rd</sup> bar).

All values range from 0 (minimum) to 100 (maximum); whether a high value is positive or negative is indicated close to the scale names (here: low values positive for all four scales displayed).

The whiskers on top of the bars indicate the range of the 95% confidence interval. This statistical coefficient represents the precision of the measurement. Confidence intervals become smaller the more persons form the mean value and the more participants agree in their evaluation. Confidence intervals become broader where there are less persons answering or less agreement among them.

## 2.5 Statistical methods

Data analysis included

- descriptive statistics,
- scale construction,
- parametric and non-parametric correlation analyses,

- analysis of variance (ANOVA), multiple comparison of means
- confirmatory factor analyses (PCA),
- simple and multiple regression analyses (stepwise procedure) and
- reliability analyses.

In addition to Cronbach's alpha, intraclass correlations (ICC) were computed when assessing scale reliability (Cronbach 1951, Cortina 1993). The applied statistical methods concerning scale development were geared particularly to the recommendations of DeVellis 1991.

All analyses were performed using SPSS version 18 and 19.

For all analysis  $p < 0.05$  (two-tailed) was considered statistically significant.

## 3 Results

### 3.1 Description of study participants

The main survey among teachers in 30 countries of the European Union and the European Free Trade Association started on May 16<sup>th</sup> 2011 and ended on June 24<sup>th</sup> 2011.

In total 716 schools with 42,603 teachers overall were invited to take part in the survey.

In the end 5,461 respondents from 499 schools participated in this study. The 499 schools have a total of 31,534 staff members.

The response rate by school ranges from 1% to 100%. Overall, the response rate is 17.3%, calculating on the basis of 31,534 teachers in the 499 schools that participated in the survey with at least one respondent.

In part 3 of this report the general results of the survey are documented in detail. In Part Ia the structural and socio-demographic data of part A of the questionnaire is shown, in part Ib all scale values are presented and in part Ic all values of the single items are documented.

The country was coded according to the login number of the school and language according to the language button chosen, all other structural and socio-demographic parameters are taken from the answers to the questions in part A of the questionnaire.

#### 3.1.1 Country

The following table shows how participants are distributed among the countries.

Country code, country Code du pays, pays	Frequency Fréquence	Percent Pourcentage
AT: Austria	364	6.7
BE: Belgium	42	.8
BG: Bulgaria	133	2.4
CY: Cyprus	36	.7
CZ: Czech Republic	54	1.0
DK: Denmark	92	1.7
EE: Estonia	63	1.2
FI: Finland	105	1.9
FR: France	237	4.3
DE: Germany	697	12.8
GR: Greece	77	1.4
HU: Hungary	344	6.3

Country code, country Code du pays, pays	Frequency Fréquence	Percent Pourcentage
IS: Iceland	87	1.6
IE: Ireland	75	1.4
IT: Italy	414	7.6
LV: Latvia	150	2.7
LT: Lithuania	214	3.9
LU: Luxembourg	73	1.3
MT: Malta	95	1.7
NL: Netherlands	478	8.8
NO: Norway	114	2.1
PL: Poland	341	6.2
PT: Portugal	247	4.5
RO: Romania	71	1.3
SK: Slovakia	218	4.0
SI: Slovenia	192	3.5
ES: Spain	88	1.6
SE: Sweden	196	3.6
CH: Switzerland	53	1.0
GB: UK	111	2.0
<b>Total/Totale</b>	<b>5461</b>	<b>100.0</b>

Table 1: Distribution of participants by country

### 3.1.2 Language

The survey was offered in 21 languages. The biggest group is formed by participants answering the German version (mostly from Germany, Switzerland and Austria) with 1119 respondents. Less than 100 participants replied in Czech, Greek, Spanish, Estonian, and Romanian.

### 3.1.3 Type of school (Question A1.1)

More than half of the teaching staff responding teaches in secondary schools (2816, 54% of the valid answers); 1503 are employed in primary education (29%) and 945 in vocational education and training (VET)(18%).

### 3.1.4 Size of school, number of pupils (Question A1.2)

22% of the teachers work in small schools with less than 300 pupils; another 30% in schools with 300-600 pupils and 26% in schools comprising 601 to 1000 pupils. 15% of the participants work in schools with 1001 to 2000 pupils and 8% in bigger schools with more than 2000 pupils.

### 3.1.5 Gender (Question A2)

A huge majority of more than 70% of the survey participants is female, only 28% of the respondents are male.

### 3.1.6 Year of birth, age (Question A3)

The oldest participant is born in 1940 (and thus 71 years old by the end of this year), the youngest is born in 1989 and will be 22 years old by the end of the year 2011. The mean age of the study participants is 45.4 years (standard deviation is 9.9 years, median is 46 years). For further analysis the participants' age was grouped in the decades "up to 34 years" (17%), "35 to 44 years" (28%), "45 to 54 years" (33%) and "55 years and above" (22%).

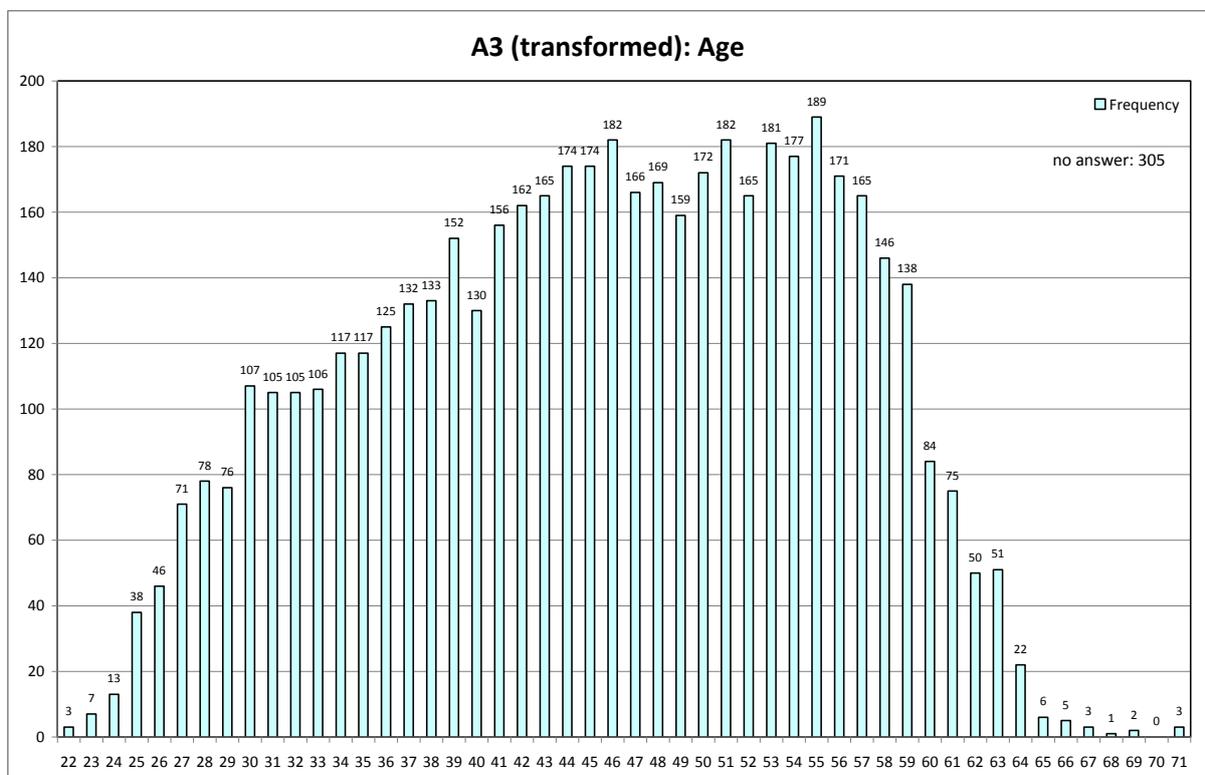


Figure 9: Study participants by age

### 3.1.7 Years in the job (Question A4)

A small group of 12% has been teaching for less than 5 years, 31% have been working between 5 and 14 years and a similar group of 28% for 15-24 years. 23% have been in the teaching profession for 25-34 years and 6% for more than 35 years.

**3.1.8 Full-time - part-time (Question A5)**

The huge majority of more than 80% of the teachers in the ETUCE pilot study work full-time. Another 8% work nearly full-time with more than 75% of the full working hours and another 7% work 50-75%; only 1% works less than 50%.

**3.1.9 Management position (Question A6)**

Roughly 10% of the participants hold a management position in their respective schools.

Remark: when calculating the scale values for “Quality of leadership” the votes of the management staff were excluded from the schools’ means (since these persons were evaluating management staff outside their school).

**3.1.10 Number of classes (Question A7)**

The number of classes taught ranges from 0 (there are participants obviously not teaching any classes at the moment) to 47 (values above 80 were excluded as presumed entry errors).

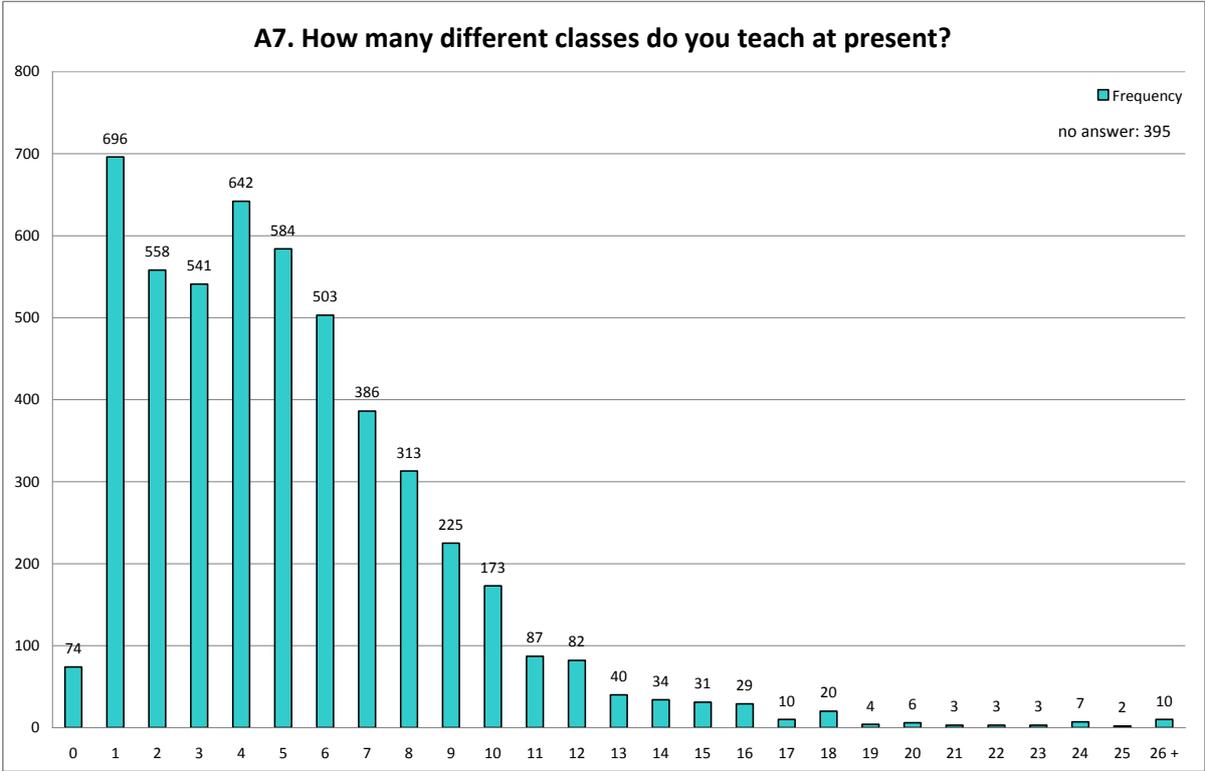


Figure 10: Study participants by number of classes taught

**3.1.11 Number of pupils in smallest class (Questions A8, A9, and A10)**

The number of pupils in the smallest class (A8) as well as in the largest class (A9) and the average of classes (A10) range from 0 to 58.

Grouping the numbers for further analysis, 43% of the participants teach at least one class with less than 15 pupils and 70% have at least one class with a maximum number of 20 pupils (A8).

However, 37% of the teachers surveyed have at least one class with 26 to 30 pupils and 16% have at least one with more than 30 pupils (taking the upper two categories together, 53% of teachers have at least one class with over 25 pupils, A9). Mean value is 24.8 pupils with a standard deviation of 6.9 pupils.

On average (A10) 18% of teachers teach classes with up to 15 pupils, 25% with 16-20 pupils and 37% with 21-25 pupils. 20% of respondents have classes with 26-30 pupils on average and 2% teach classes with an average number of more than 30 pupils.

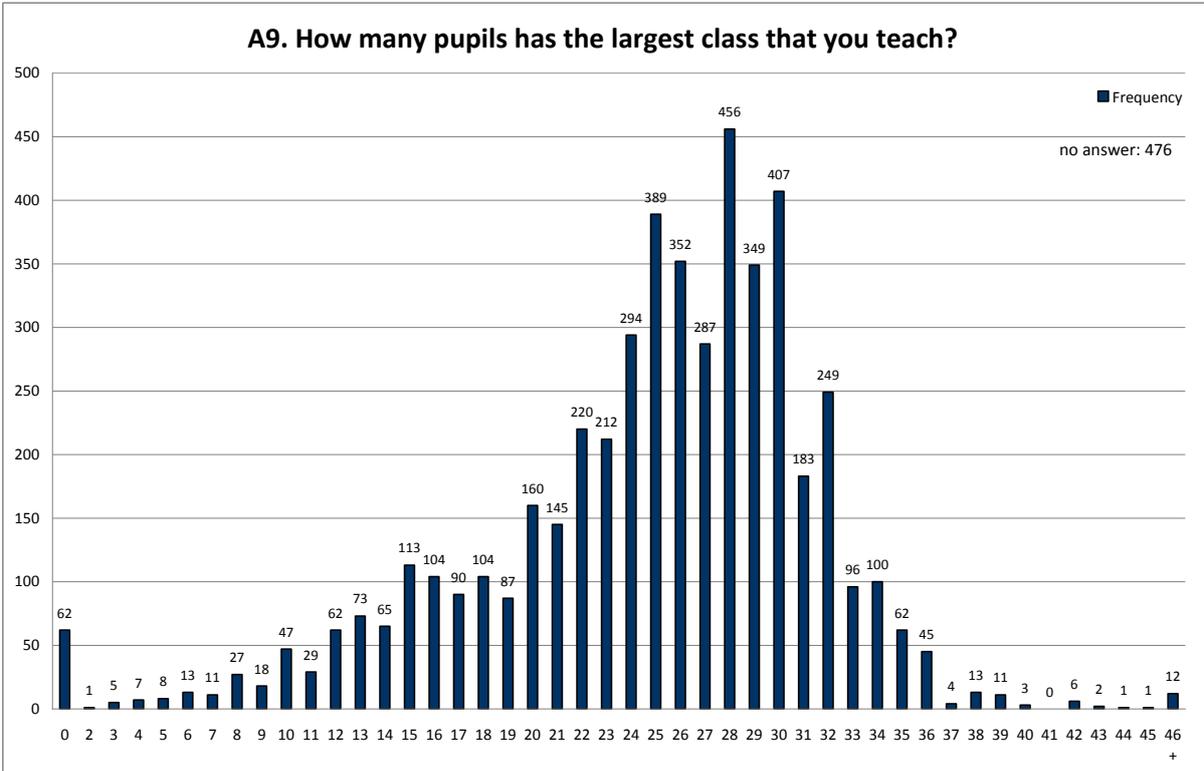


Figure 11: Study participants by number of pupils in class (largest class)

## **3.2 Psychosocial factors at work**

In the documentation of the overall results of the study in part 3, Ib. all scales are described by their valid N (only participants with valid answers, without missings), their mean value across all respondents, their standard error of the mean (as a measurement for the precision of the mean), and by the standard deviation of all scales (as an assessment of the variation of the values).

The same is documented in the following part Ic. for all single values.

All scales and all items in the questionnaire are measured and documented on a scale from 0 (minimum) to 100 (maximum).

More interesting than the overall value for all participants is the comparison of subgroups. In the following sections the psychosocial factors at work (strain and stress) are given and compared for numerous subgroups according to the structural and socio-demographic characteristics in part A of the questionnaire.

All results are given graphically in part 4 (by country) and in part 5 (all other parameters); only a small part can be described here in the text.

Splits for all 36 psychosocial factors assessed were documented for the following parameters:

- results by country (graphs in part 4)
- results by type of school (A1.1), size of school (A1.2), gender (A2), age-groups (A3), years in job (A4), full-time – part-time (A5), management position (A6), number of classes (A7), number of pupils (A8, A9, A10). Graphs for all of these are presented in the various sections of part 5.

### **3.2.1 Psychosocial factors by country**

One central aim of this study was to compare the situation at the workplace for teachers in the different EU and EFTA countries. In part 4 of this report this is done for all 36 aspects of the questionnaire applied. The following figure gives an example for the scale “Quantitative demands”.

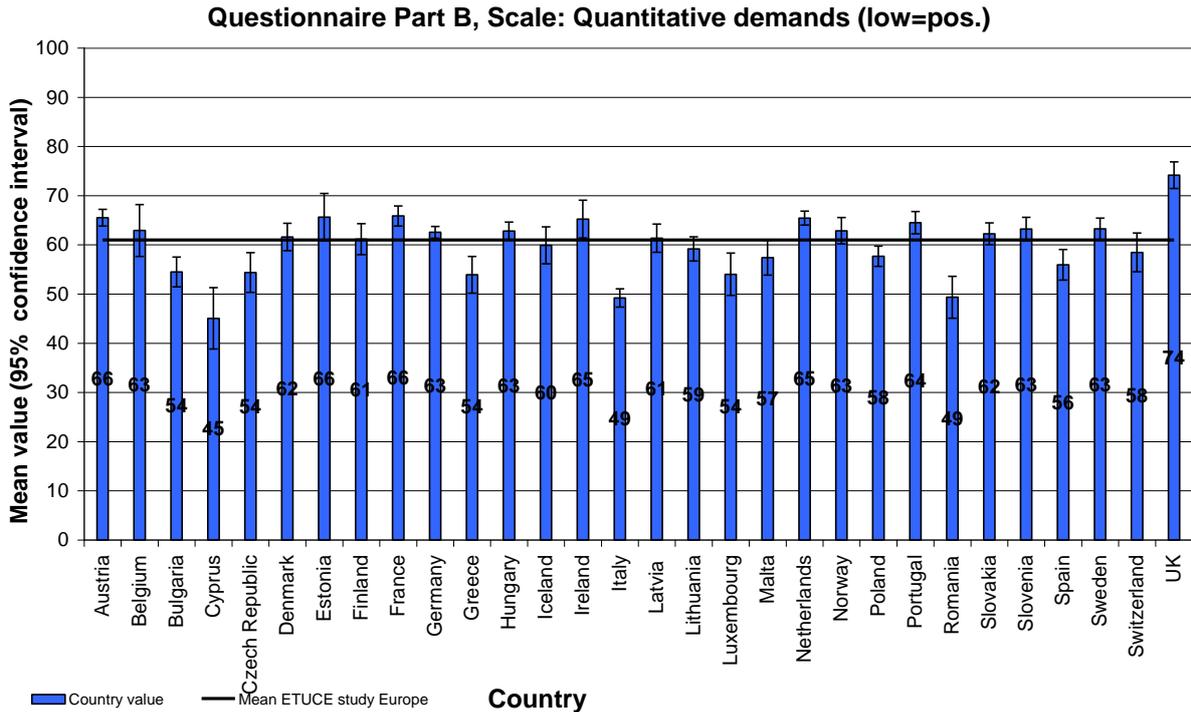


Figure 12: Means and 95% confidence intervals for scale “Quantitative demands” by country

The mean values for the different countries are given in the bars; the whiskers are the 95% confidence intervals of the means, the horizontal line is the total mean for the ETUCE study in Europe.

The lowest values for the “Quantitative demands” in the evaluation of the teachers themselves are measured in Cyprus (45 points), Romania (49 points) and Italy (49 points). The by far highest values are obtained in the UK with 74 points on average. The overall mean is 61 points.

Please note that a) these are mean values of all teachers participating in the respective countries and b) in some countries the number of participants is quite low (see table above, i.e. Cyprus).

We performed analysis of variance (ANOVA) to provide a quick overview of the main differences by country.

Remark: The ANOVA analyses how much variation in the values of the individual teachers can be explained by the parameter country – the coefficient  $\eta^2$  gives the percentage of variance explained by the independent factor (here country). A coefficient of or close to zero means that the independent factor cannot explain any part of the variation (here: it is irrelevant where a teacher comes from, teachers in all countries have all kinds of values and the means do not differ a lot), a high value of  $\eta^2$  means that the country is a good predictor for the single teachers’ evaluation (teachers of the same country tend to have the same values and differ from other countries).

The highest values for  $\eta^2$  and thus the biggest difference between the countries are found for the following scales from the standard COPSOQ-questionnaire:

- “Emotional demands” (lowest value with 54 points in Denmark and Spain, highest in Estonia with 77 points),

- “Role clarity” (best in Bulgaria with 85 points, worst in The Netherlands with 59 points),
- “Quality of leadership” (lowest in France with 28 points, best in Romania with 79 points),
- “Feedback at work” (ranging from 33 points in Italy to 72 in Romania),
- and especially “Insecurity at work” (between 12 points in Norway to 54 in Lithuania). This last comparison is reflecting the obviously quite different national regulations concerning employment status and the employment contracts for teachers.

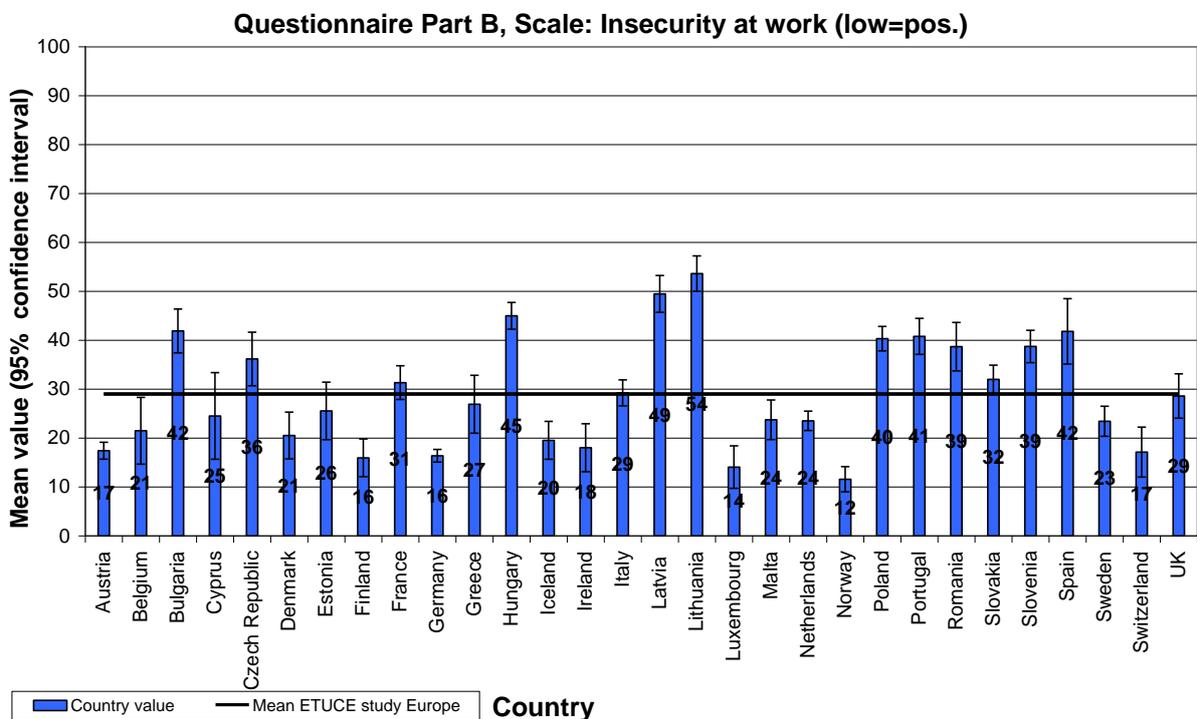


Figure 13: Comparison of scale “Insecurity at work” by country

Among the teacher-specific aspects the biggest differences by country are found for the scales:

- “Opportunities to relax” (27 points in Germany to 57 in Spain),
- “Conflicts with parents / employers” (worst in Slovakia with 57 points, best in Denmark, Iceland and Romania with 26 points each),
- “Verbal abuse” (most prevalent in Latvia with 56 points, lowest value in Italy with 9)

- and “Physical violence” (most prevalent in Germany and Belgium with 27 and 25 points respectively, completely absent in the participants from the Czech Republic with 0 points).

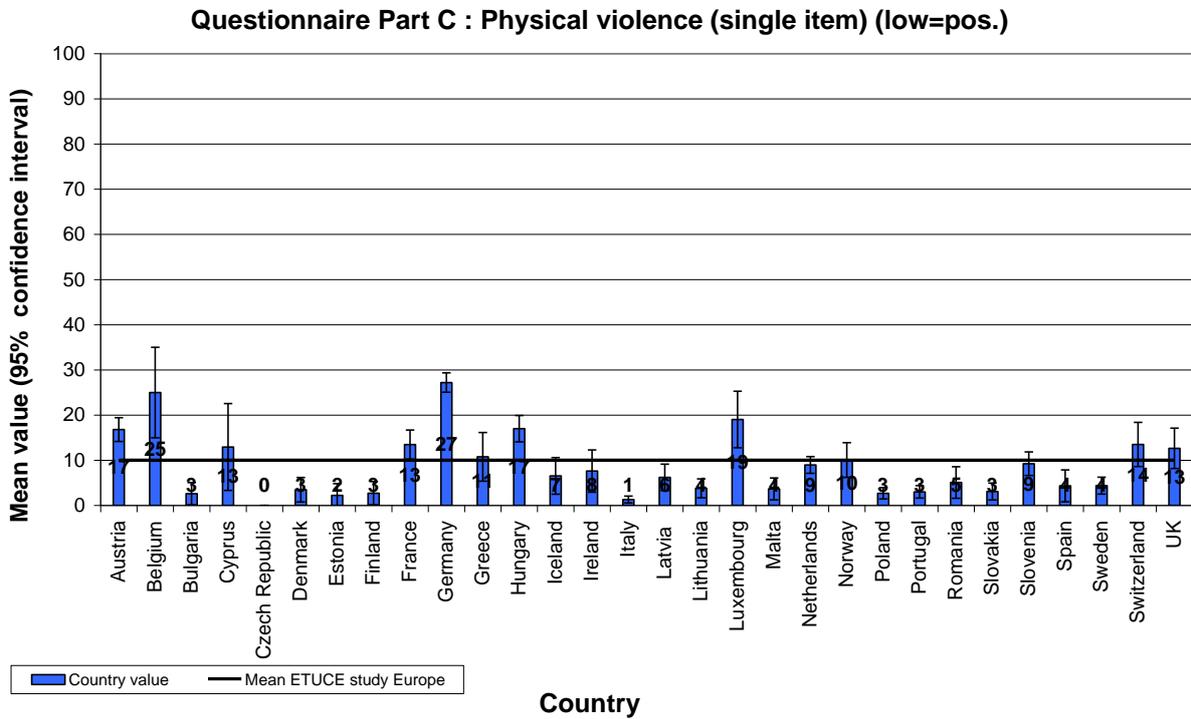


Figure 14: Comparison of aspect “Physical violence” by country

All the rest of the 36 aspects also differ significantly by country ( $p < 0.001$ ) underlining a wide variety of working conditions for teachers in the different countries of the EU and EFTA.

In some cases, a single country or only a few of the countries have quite outlying values without affecting the  $\eta^2$ -coefficient much (i.e. very high values for “Work-Privacy conflict” in Poland and UK, very low values in Cyprus, or very high values for “Quality of leadership” in Romania and very low ones in France). This is because the analysis of variance assesses differences between all countries in a general manner, single outliers (extreme values) do not have the same impact on  $\eta^2$ . For a complete evaluation of the country differences it is thus necessary to have a closer look at all the graphs in part 4 of this report, comparing all 36 aspects between the different countries.

<b>B. General part (COPSOQ)</b>	<b>N items</b>	<b>Eta<sup>2</sup> (variance explained)</b>
<b>Demands</b>		
Quantitative demands (low=pos.)	4	0.092
Emotional demands (low=pos.)	3	0.129
Demands for hiding emotions (low=pos.)	2	0.097
Work – privacy conflict (low=pos.)	5	0.071
<b>Influence and possibilities for development</b>		
Influence at work (high=pos.)	4	0.091
Possibilities for development (high=pos.)	4	0.080
Meaning of work (high=pos.)	3	0.027
Commitment to the work place (high=pos.)	4	0.045
<b>Social relations and leadership</b>		
Predictability (high=pos.)	2	0.099
Role clarity (high=pos.)	4	0.103
Role conflicts (low=pos.)	4	0.048
Quality of leadership (high=pos.)	4	0.113
Social support (high=pos.)	4	0.064
Feedback at work (high=pos.)	2	0.110
Social relations (high=pos.)	2	0.097
Sense of community (high=pos.)	3	0.057
Mobbing (single item) (low=pos.)	1	0.068
<b>Additional aspects</b>		
Trust and fairness (high=pos.)	4	0.093
Insecurity at work (low=pos.)	4	0.213
<b>D. / E. Strain (Effects, Outcomes)</b>		
Intention to leave (single item) (low=pos.)	1	0.060
Job satisfaction (high=pos.)	7	0.070
General health state (high=pos.)	1	0.041
Copenhagen Burnout Inventory (low=pos.)	6	0.085
Cognitive stress (low=pos.)	4	0.069
Satisfaction with life (high=pos.)	5	0.098
<b>C. Specific aspects for teaching staff</b>		
Common educational vision (high=pos.)	5	0.091
Lesson disturbances (low=pos.)	7	0.039
Noise and voice strain (low=pos.)	4	0.098
Opportunities to relax (high=pos.)	4	0.151
Conflicts with parents / empl. (low=pos.)	3	0.115
Support by parents / employers (high=pos.)	3	0.067
Equipment (high=pos.)	8	0.066
Conferences and meetings (high=pos.)	4	0.090
Subject support (high=pos.)	1	0.078
Verbal abuse (low=pos.)	1	0.162
Physical violence (low=pos.)	1	0.158

Table 2: Differences in scales / aspects by country (ANOVA: analysis of variance)

### 3.2.2 Psychosocial factors by type and size of school

The subgroup analysis by country was followed by an analogous analysis concerning all the school parameters and personal parameters in part A of the questionnaire.

In total the 36 aspects of the questionnaire were compared according to 11 factors. All nearly 400 graphs showing these comparisons are given in the appendix in part 5 – only the most important differences are shown in the following chapters.

Analysing the mean values of psychosocial factors at work by type of school (3 types) and size of school (4 groups) yields much smaller differences than seen in the analysis by country.

The biggest differences by type of school are found for “Common educational vision” with an  $\eta^2$  of 4.5%: This scale is much higher for primary education (64 points) than for secondary education (56 points) or VET (53 points).

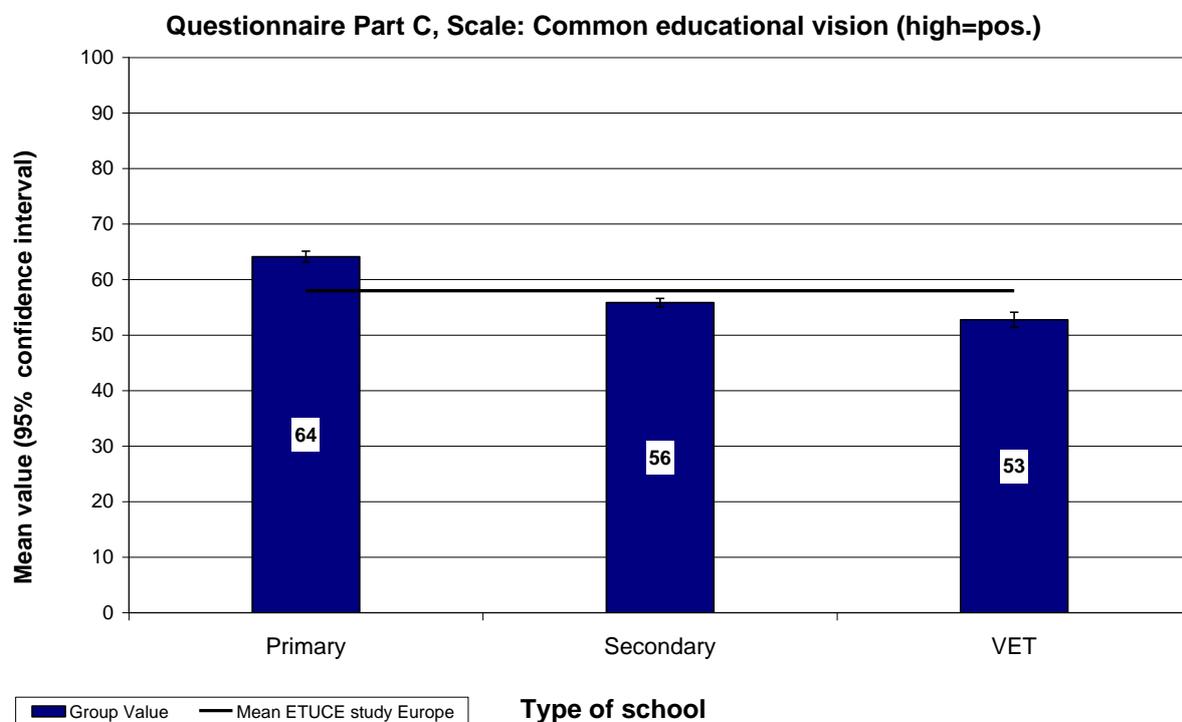


Figure 15: Comparison of scale “Common educational vision” by type of school

The scale “Common educational vision” also shows the biggest differences by size of the school: this scale decreases with the increase in number of pupils: 63 points in schools with up to 300 pupils, then 59, 55, 55 and 51 points in the schools with 300-600, 601-1000, 1001-2000 and > 2000 pupils respectively.

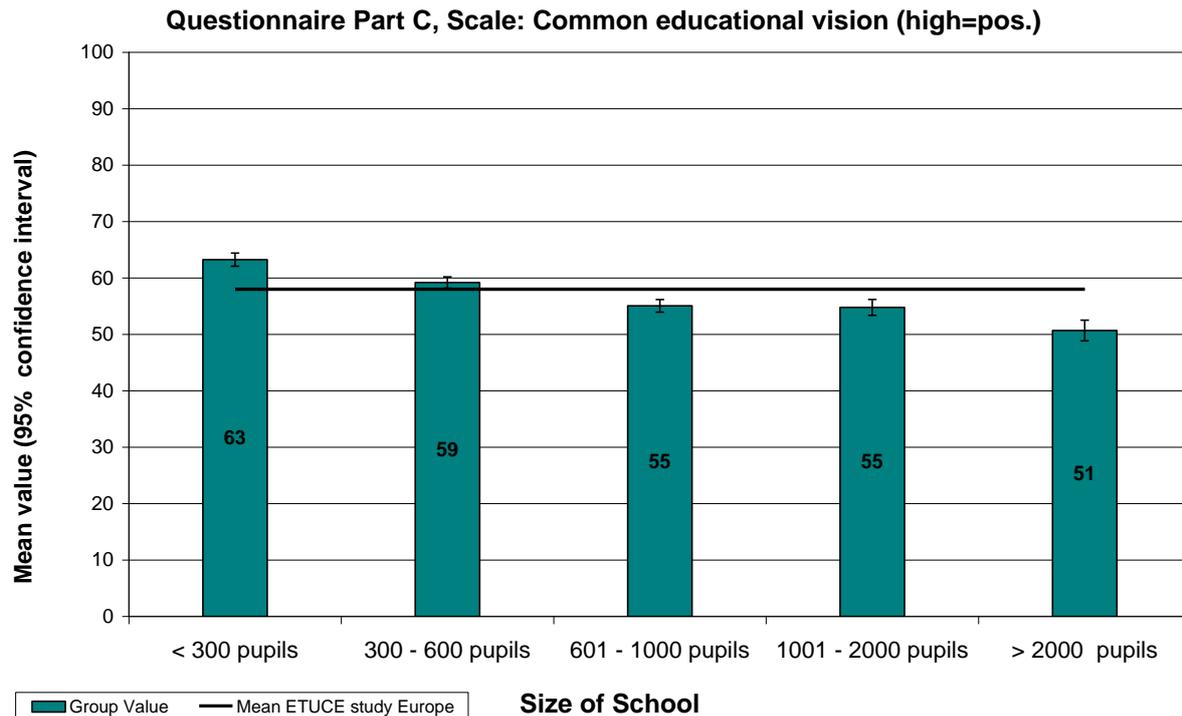


Figure 16: Comparison of scale “Common educational vision” by size of school

This means that it is easier (in the eyes of the respondents) to have a common educational vision in smaller schools and in primary education schools.

### 3.2.3 Psychosocial factors by gender

Gender differences are often discussed in occupational health. However the analysis of the mean scale values according to gender shows only small differences for the 36 aspects analysed.

The greatest differences concern “Emotional demands” in the field of workplace factors and the outcome scale personal burnout from the “Copenhagen Burnout Inventory (CBI)”: female teachers experience more emotional demands (68 points) and more burnout symptoms (50 points) than male teachers (61 and 43 points respectively).

This is similar to findings of the “Fifth survey on working conditions 2010” presented by Agnès Parent-Thirion at the final conference of the ETUCE project in Berlin, November 17<sup>th</sup>-18<sup>th</sup> 2011: The aspect “Emotional Involvement” (similar to emotional demands) was rated highest in the educational sector among all sectors. Inside the educational sector and according to gender the aspect “Mental Health at risk” was rated markedly higher by women than by men.

For the scale “Work-Privacy Conflict” (WPC) in this ETUCE pilot study a five point higher value was found in female teachers (61 points) compared to male teachers (56 points). Two hypotheses are possible to explain this rather small difference: a) women work more frequently in part-time which minimizes their higher Work-Privacy conflict (however more than 80% of the participants in this study work full-time, so this supposition is unlikely to be the main reason for the small difference) and b) the aspect assessed in the items of this questionnaire is not the narrow “Work-Family Conflict” but the broader “Work-Privacy Conflict”. This latter assumption is supported by data from the 4<sup>th</sup> survey on working conditions: 77% of all male employees (in all professions) and 83% of all female employees agree to the general aspect “Working hours fit family/ social commitments well or quite well”, indicating even a slightly lower WPC in women. But, when focussing on classical gender role items, women are much more concerned: 38% of women and 21% of men have the duty of “Caring for and educating your children every day for an hour or more” and 76% of women and 23% of men state “cooking and housework” (Parent-Thirion, 2007).

Thus, (classical) “Work-Family Conflict” is (still) a stressor affecting women more than men, while the broader aspect “Work-Privacy Conflict” does not show these gender differences.

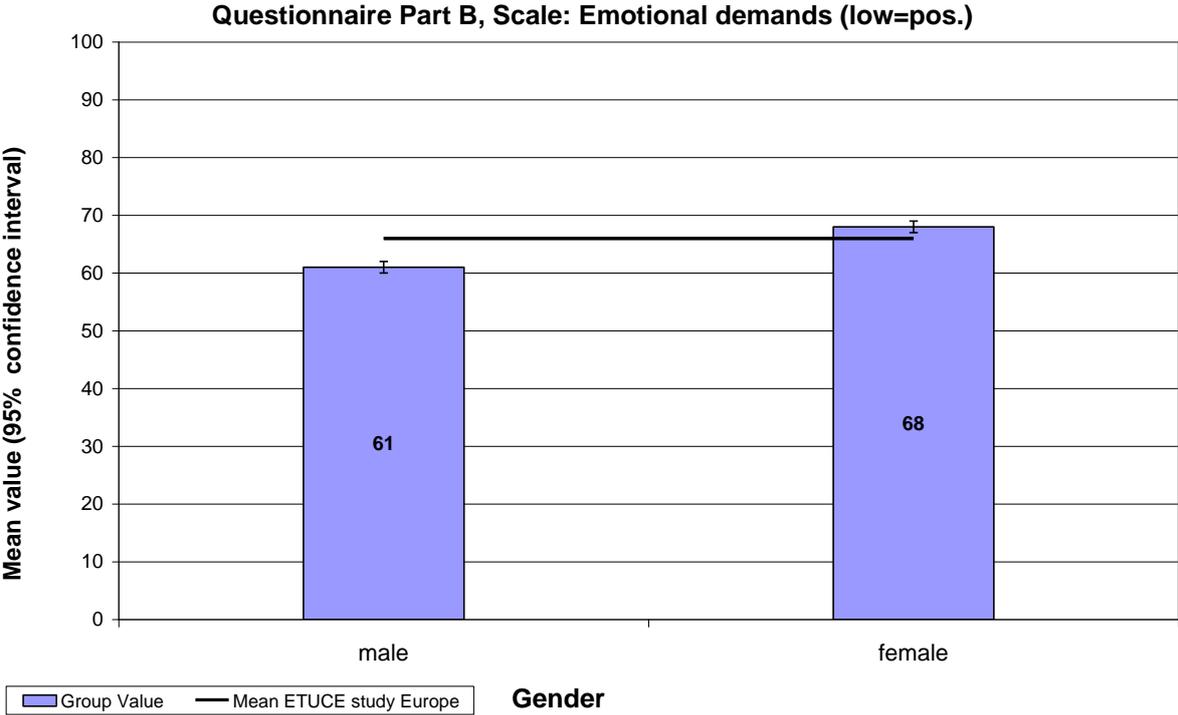


Figure 17: Comparison of scale “Emotional demands” by gender

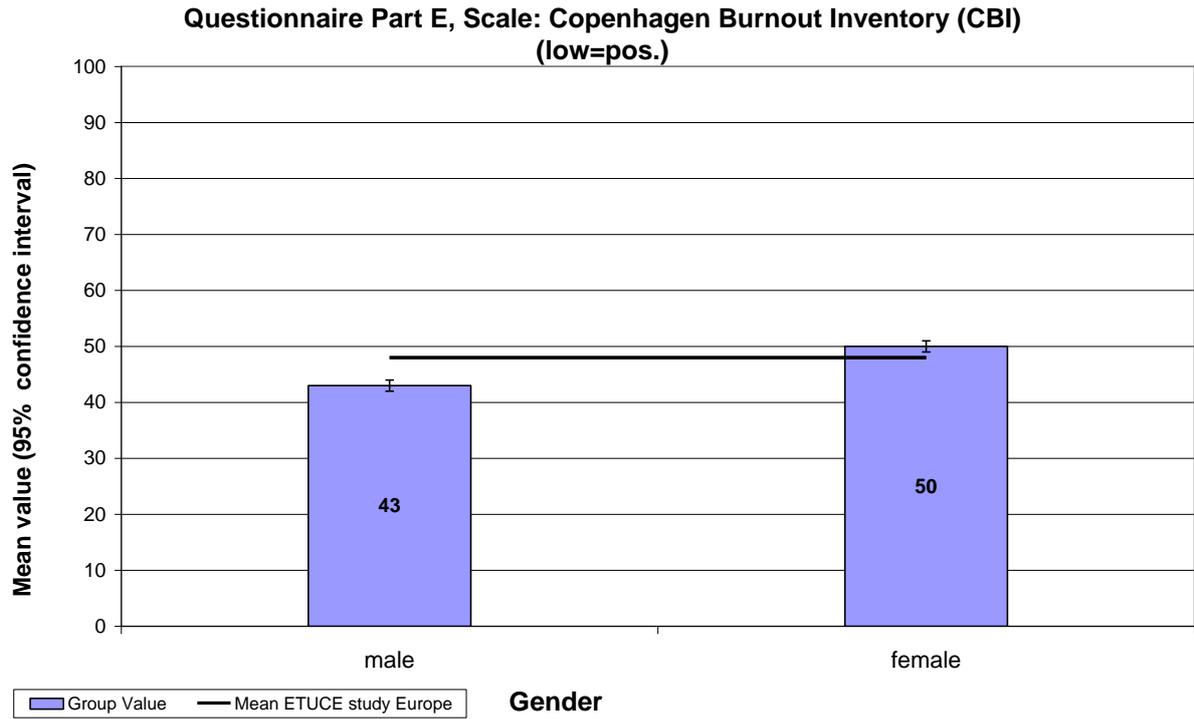


Figure 18: Comparison of scale “CBI: Personal burnout” by gender

### 3.2.4 Psychosocial factors by age groups

The highest impact of the factor age on a scale value is seen for self-rated health. It is well known from many other studies (i.e. Ware et al. 1996, Nübling et al. 2007) that evaluation of the (physical) state of health diminishes with age. For teaching staff in this pilot study, the mean value is 76 points in the youngest group (below 35 years), 72 points for those aged 35-44, 70 points in the next group with 45-54 year-olds and 68 points for the teachers aged 55 years or more.

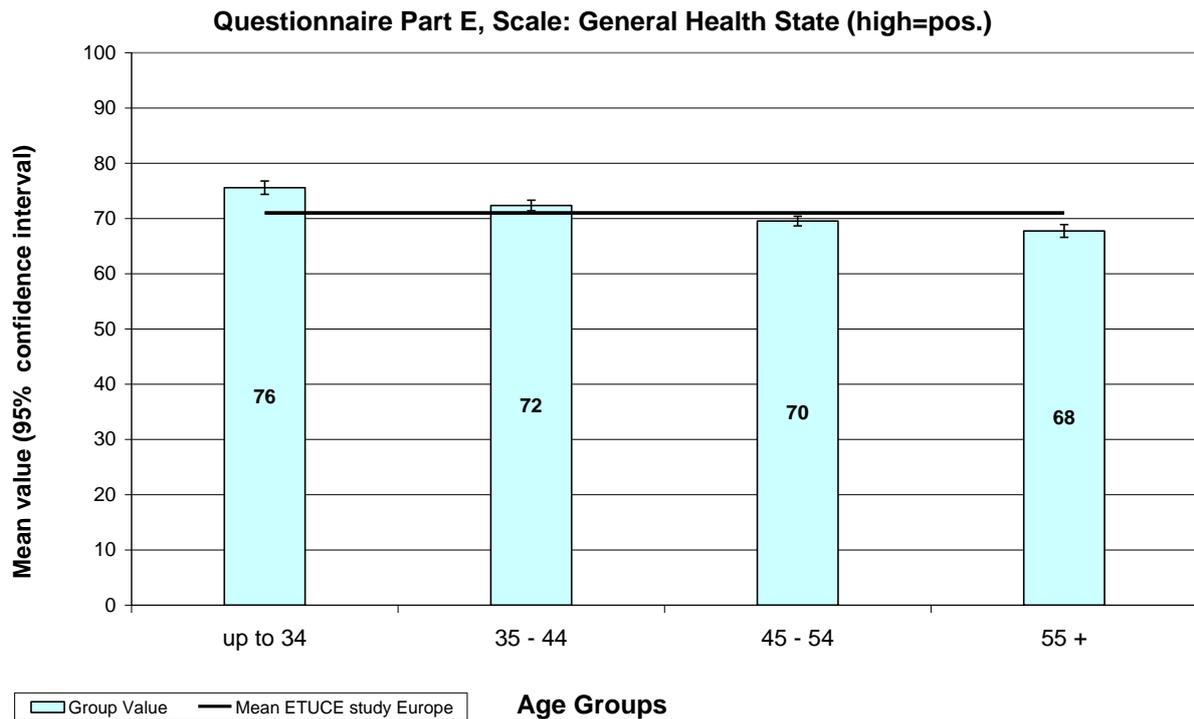


Figure 19: Comparison of scale “General health state” by age (grouped)

### 3.2.5 Psychosocial factors by years in the teaching profession

The split by duration of professional activity shows the highest impact on the scale “Insecurity at work” addressing aspects like the fear of being relocated or remaining unemployed: teachers already working for 35 years and more have a low mean of 18 points while all the other groups have values around 30 points (less than 5 years: 29, 5 to 14 years: 29, 15 to 24 years: 32, and 25 to 34 years: 30 points).

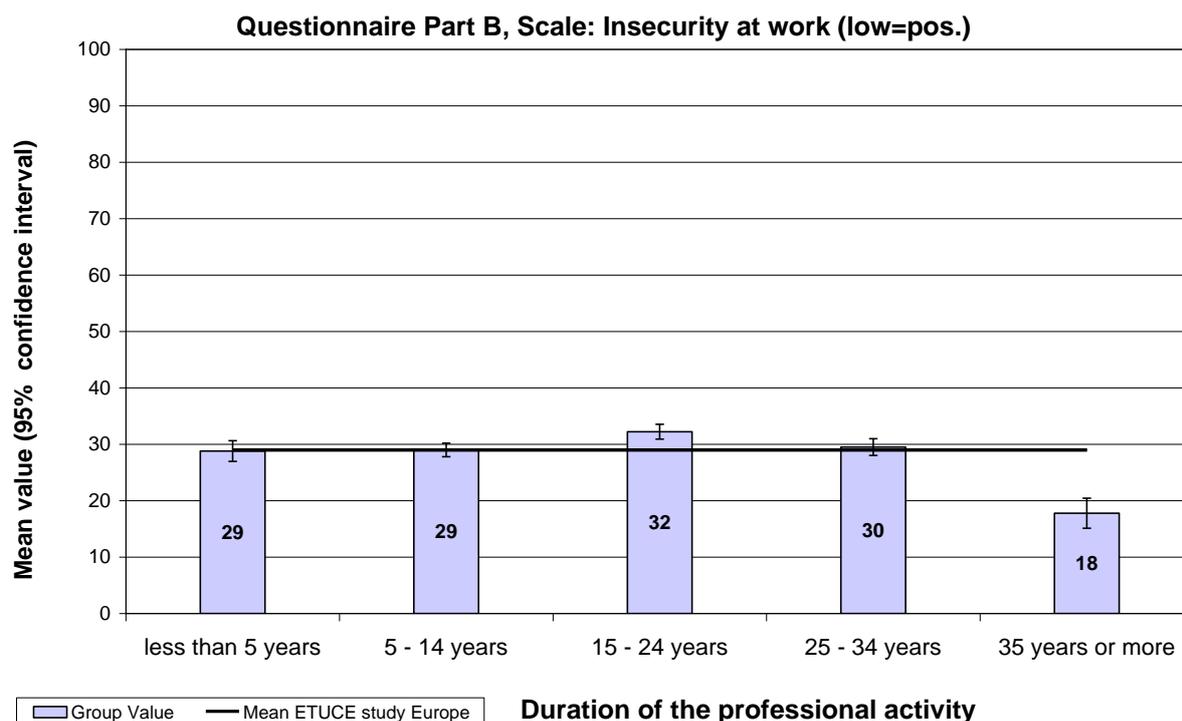


Figure 20: Comparison of scale “Insecurity at work” by years of occupation

As seen above, this is a factor which also differs markedly by country – i.e. by country-specific regulations. It could be that the effect is due to the fact that teachers working more than 35 years in the job are more often located in countries with low job insecurity.

### 3.2.6 Psychosocial factors by full-time – part-time

The biggest differences according to part-time – full-time are found for the scale “Role clarity”, they are however not very expressed. Part-time teachers with 75-99% and 50-75% of working time evaluate their role clarity with 64 and 66 points on average lower than full-time teachers with 70 points. Probably this is a result of less participation in the information flow process. Furthermore part-time respondents with less than 50% of working time give lower values for Work-Privacy Conflict (52 points compared to 60 points in general).

It should be borne in mind that the huge majority of respondents in this survey works full-time (> 80%), thus the groups working various levels of part-time are quite small and insufficient for a generalisation of results.

### 3.2.7 Psychosocial factors by management position

The aspect most affected by formal position is “Quality of meetings and conferences”: while school managers (running the meetings) give a mean value of 57 points for the conference quality, teachers without a management position are much more critical with 46 points.

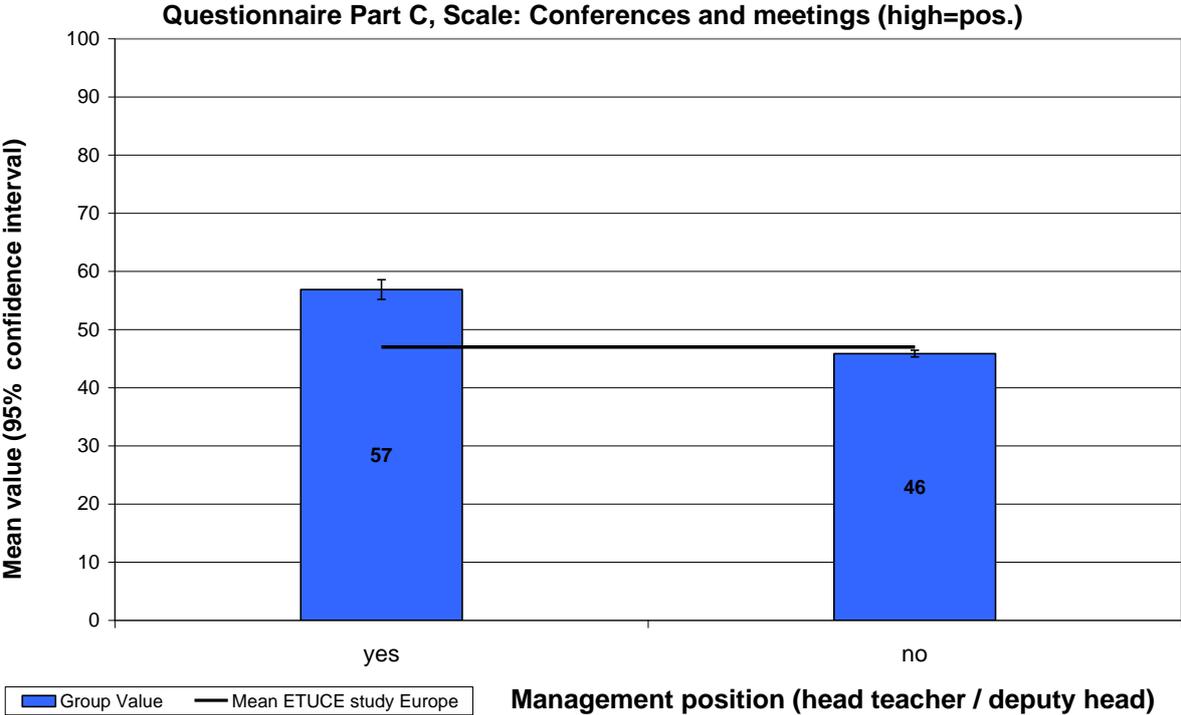


Figure 21: Comparison of scale “Quality of conferences” by management position

Other relevant differences according to status are found for “Influence at work”, “Commitment to the workplace”, “Predictability”, “Role clarity”, “Social relations”, “Trust and fairness”, “Job satisfaction”, and “Equipment of the school”, all with an 8 to 10 point advantage for the managers. A higher value for “Quantitative demands” (6 points higher for managers) is the only disadvantage for managers in this survey.

### 3.2.8 Psychosocial factors by number of classes

The “Influence at work”, “Meaning of work”, and “Commitment to the work place” are better rated by those teaching less classes. From the teacher-specific scales, advantages for this group are found for “Common educational vision”, “Lesson disturbances”, “Noise and voice strain”, and “Opportunities to relax”.

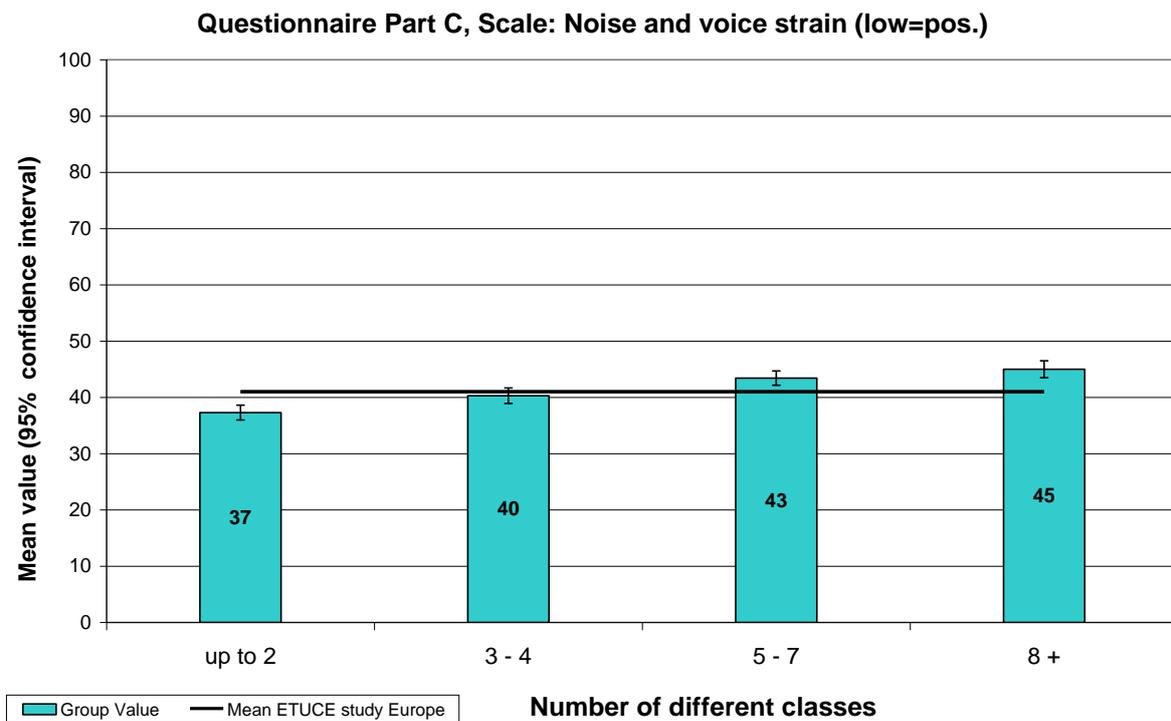


Figure 22: Comparison of scale “Noise and voice strain” by number of classes

### 3.2.9 Psychosocial factors by number of pupils in classes

The size of the largest class actually taught (A9) has an influence on the factors “Quantitative demands”, “Work-privacy conflict”, “Noise and voice strain”, and “Opportunities to relax” (similar findings for average class size). Especially teachers with (one or more) classes larger than 25 pupils (26-30 and > 30) show markedly unfavourable values on these scales.

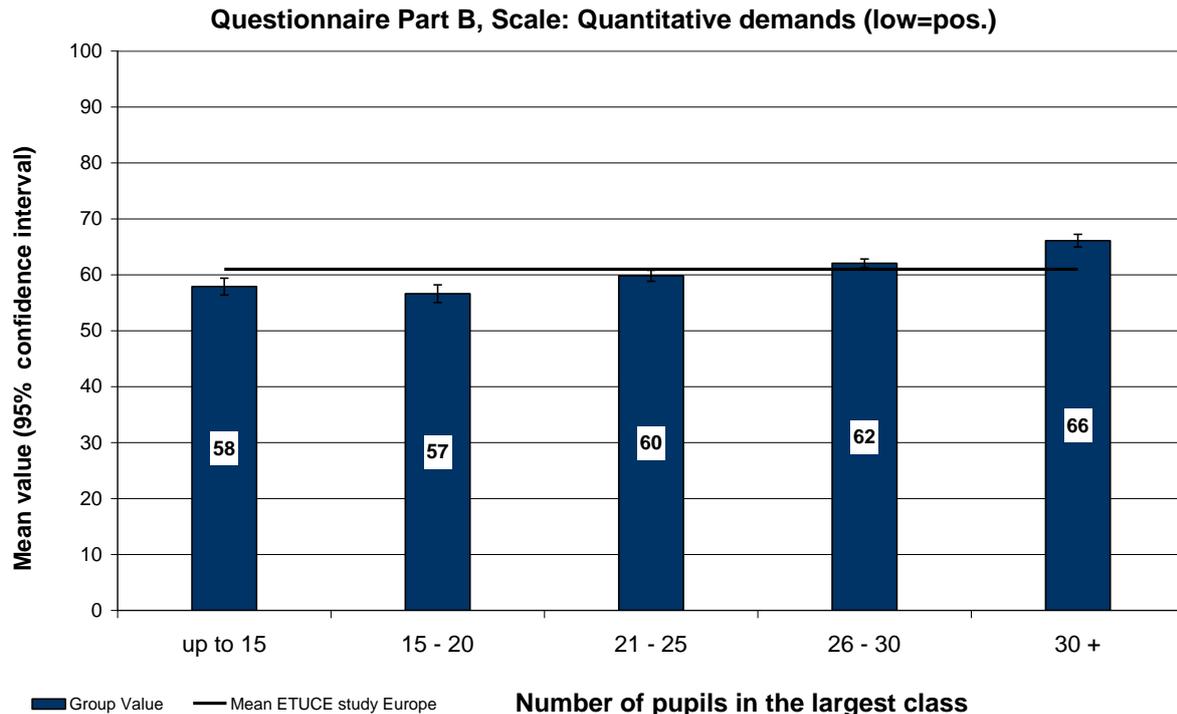


Figure 23: Comparison of scale “Quantitative demands” by number of pupils in largest class

The articulated relation between size of largest class and “Physical violence” is in the opposite direction: the highest value for violence is found in the teacher group with the smallest classes (< 15 pupils: 15 points vs 10 on average). This is probably due to the specific schools (schools for mentally or physically handicapped pupils) having these small class sizes.

### **3.3 Scale properties and relations between scales**

Correlation analyses (performed as parametric tests with Pearson's  $r$  and non-parametric with Spearman's  $\rho$ ) between all scales were performed to assess the internal and criterion validity.

In a following factor analysis (principal component analysis, PCA) the grouping of the scales into the presumed superordinate dimensions (demands, influence and development, social support, etc., see figures 4 and 6) was tested. All analyses were done analogously to the German COPSQ validation study (Nübling et al., 2006) and the psychometric testing of the teacher-specific scales (Nübling et al., 2009).

The results were also analogous to the previous studies, replicating the presumed grouping of the aspects empirically.

#### **3.3.1 Scale reliabilities**

Scale reliability for all scales was reassessed too, using Cronbach's alpha and ICC. Table 3 gives the Cronbach's alphas as a measure of the internal consistency of the scales. Reference values for COPSQ (parts B, D, E) are taken from the German COPSQ validation study (Nübling et al., 2006), values for the teacher-specific scales (part C) from the German teacher pretest (Nübling et al., 2008).

<b>B. General part (COPSOQ)</b>	<b>N items</b>	<b>ETUCE study</b>	<b>COPSOQ D</b>
<b>Demands</b>			
Quantitative demands (low=pos.)	4	0.72	0.69
Emotional demands (low=pos.)	3	0.74	0.71
Demands for hiding emotions (low=pos.)	2	0.69	0.82
Work – privacy conflict (low=pos.)	5	0.93	0.92
<b>Influence and possibilities for development</b>			
Influence at work (high=pos.)	4	0.72	0.64
Possibilities for development (high=pos.)	4	0.72	0.73
Meaning of work (high=pos.)	3	0.81	0.82
Commitment to the work place (high=pos.)	4	0.75	0.72
<b>Social relations and leadership</b>			
Predictability (high=pos.)	2	0.84	0.75
Role clarity (high=pos.)	4	0.83	0.83
Role conflicts (low=pos.)	4	0.77	0.79
Quality of leadership (high=pos.)	4	0.91	0.89
Social support (high=pos.)	4	0.80	0.80
Feedback at work (high=pos.)	2	0.63	0.58
Social relations (high=pos.)	2	0.54	0.68
Sense of community (high=pos.)	3	0.84	0.79
Mobbing (single item) (low=pos.)	1	-	-
<b>Additional aspects</b>			
Trust and fairness (high=pos.)	4	0.87	Not included
Insecurity at work (low=pos.)	4	0.79	0.67
<b>D. / E. Strain (Effects, Outcomes)</b>			
Intention to leave (single item) (low=pos.)	1	-	-
Job satisfaction (high=pos.)	7	0.83	0.69
General health state (high=pos.)	1	-	-
Copenhagen Burnout Inventory (low=pos.)	6	0.91	0.91
Cognitive stress (low=pos.)	4	0.89	0.87
Satisfaction with life (high=pos.)	5	0.91	0.90
<b>C. Specific aspects for teaching staff</b>			
Common educational vision (high=pos.)	5	0.90	0.91
Lesson disturbances (low=pos.)	7	0.89	0.90
Noise and voice strain (low=pos.)	4	0.81	0.76
Opportunities to relax (high=pos.)	4	0.57	0.70
Conflicts with parents / empl. (low=pos.)	3	0.92	0.90
Support by parents / employers (high=pos.)	3	0.75	0.76
Equipment (high=pos.)	8 (9)	0.86	0.87
Conferences and meetings (high=pos.)	4	0.71	0.73
Subject support (high=pos.)	1 (2)	-	0.59
Verbal abuse (low=pos.)	1	-	-
Physical violence (low=pos.)	1	-	-

Table 3: Scale reliabilities (internal consistency)

Remarks: Scale "Equipment" contained 9 items in the German teacher study, in the ETUCE survey two items were collapsed, scale "Subject support" contained 2 items in Germany, now only 1 in the ETUCE survey. For single items no scale reliability can be calculated.

As can be seen, the scale reliabilities are in approx. the same range as in the reference studies, indicating good scale consistencies.

This means that measurement qualities observed in the monolingual German study are maintained in the international European survey with 21 languages in 30 different countries.

### **3.3.2 Regression analysis on outcomes – prevention strategies**

The general model of occupational medicine, psychology and sociology is the strain – stress model.

Workplace factors (strain) are believed to have an influence on persons' reactions (stress or other outcomes). In the COPSQ questionnaire workplace factors are assessed with the questions and scales in parts B (general) and C (teacher-specific) of the questionnaire and health-related and other personal reactions are assessed in the parts D and E.

It is important for psychometric reasons (to test internal validity and criterion validity of the underlying model), as well as for the formulation of preventive measures and strategies, to assess which workplace factors are most closely related to the outcome factors. Prevention should be focussed on the most influential factors and on the most critical values (if possible).

Multiple regression analyses of the workload scales (general and teacher-specific) on the six outcome parameters on health, well-being and work satisfaction were conducted (see Nübling et al., 2006).

Because of the numerous scales and models involved, the results have been presented in a compressed form. Table 4 sums up the central findings: column two: explained variance ( $R^2$ , determination coefficient) of the forward stepwise regression models including all aspects resulting in significant multivariate influence. The number of aspects included in the model out of all 36 COPSQ and teacher-specific workplace factors is given in parentheses.

Column three gives the explained variance ( $R^2$ ) of the model including only the five most important predictors taken into the model (in order of integration), in the last column the names of these scales are documented, a "T" stands for teacher-specific scales. First of all it becomes obvious that the outcome factor "job satisfaction" can be explained better (up to 61% of explained variance) through the workplace factors than any of the other outcomes. The - statistically speaking - worst prediction using psychosocial workload was found for the factor "General health state".

<b>Criterion / Predictors</b>	<b>R<sup>2</sup>: model all significant aspects (N of parameters)</b>	<b>R<sup>2</sup>: model 5 most important aspects</b>	<b>5 most important predictors</b>
<b>Intention to leave</b>	0.28 (17)	0.25	Commitment to the workplace (-) Work-privacy conflict (+) Demands for hiding emotions (+) Meaning of work (-) Trust and fairness (-)
<b>Job satisfaction</b>	0.61 (20)	0.55	Trust and fairness (+) Sense of community (+) Meaning of work (+) T: Equipment (+) Work-privacy conflict (-)
<b>General health state</b>	0.21 (12)	0.19	Work-privacy conflict (-) T: Noise and voice strain (-) Sense of community (+) Emotional demands (-) Meaning of work (+)
<b>CBI: personal burnout</b>	0.50 (18)	0.47	Work-privacy conflict (+) Emotional demands (+) T: Noise and voice strain (+) Insecurity at work (+) Commitment to the workplace (-)
<b>Cognitive stress symptoms</b>	0.29 (13)	0.31	Work-privacy conflict (+) Role clarity (-) T: Noise and voice strain (+) Emotional demands (+) T: Lesson disturbances (+)
<b>Satisfaction with life</b>	0.24 (16)	0.22	Meaning of work (+) Work-privacy conflict (-) Insecurity at work (-) Influence at work (+) T: Conflicts with parents (-)

Table 4: Regression models on the outcomes (multiple linear regression)

This is an expected result, since outcomes that from their content are closer to the working situation show a more tense relation to the workplace factors: thus, job satisfaction should be (and is) related more closely to workplace factors than general health (depending on a lot of other factors).

In the German COPSOQ validation study including all professions, R<sup>2</sup> for the models with the five best predictors were in a similar range: Intention to leave: 0.27, Job satisfaction: 0.52, General health state: 0.14, CBI: 0.31, Cognitive stress symptoms: 0.19 and Satisfaction with life: 0.21

The scale “Work-privacy conflict” acts as a predictor (positive or negative) for all six outcomes. High work-privacy conflict is related to low job and life satisfaction, lower self-rated health, a higher intention to leave and higher degree of burnout symptoms

and cognitive stress symptoms. This means that the question of compatibility of work and privacy is a crucial one for all outcome factors – in the field of job and life satisfaction and intention to leave as well as for the health-related outcomes: general health, burnout, cognitive stress.

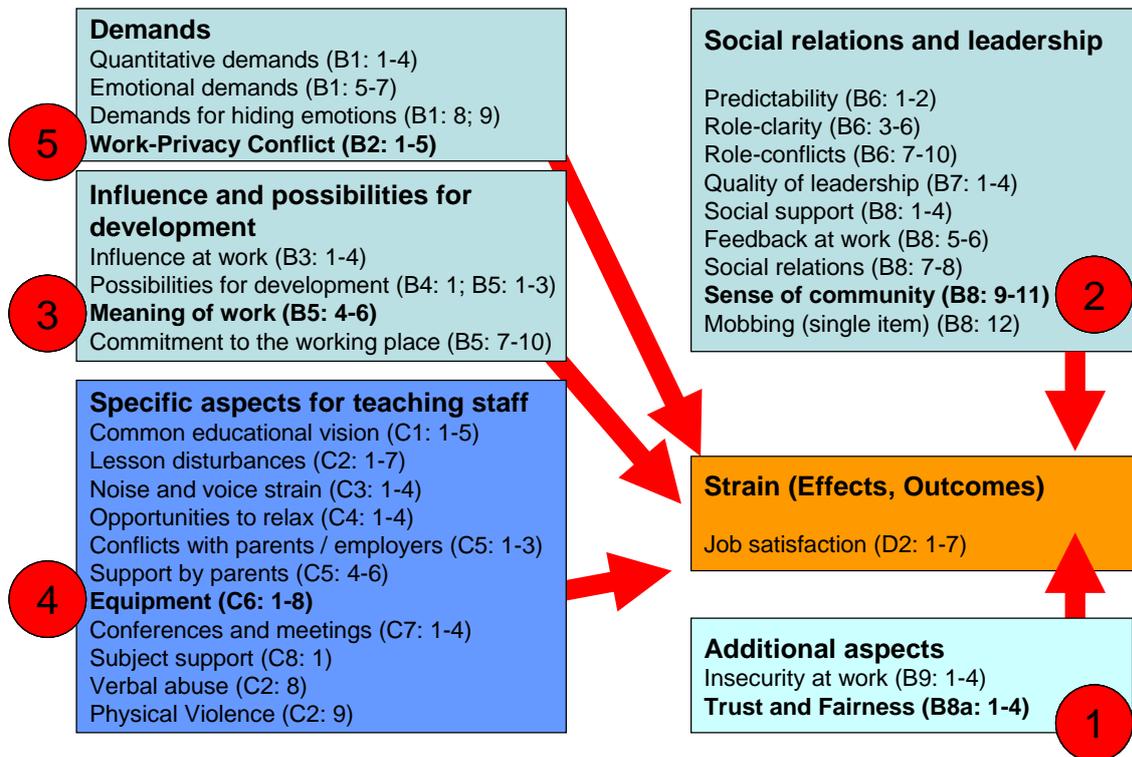


Figure 24: Regression model for “Job satisfaction”. First five predictors,  $R^2=0.55$

The scale “Meaning of work” was included as one of the five most important factors in four of the six models – teachers expressing the feeling that they are doing meaningful work are more satisfied with their job and their life and demonstrate a better health status.

Three models concerning the health-related outcomes include the scale “Emotional demands” among the five most important predictors.

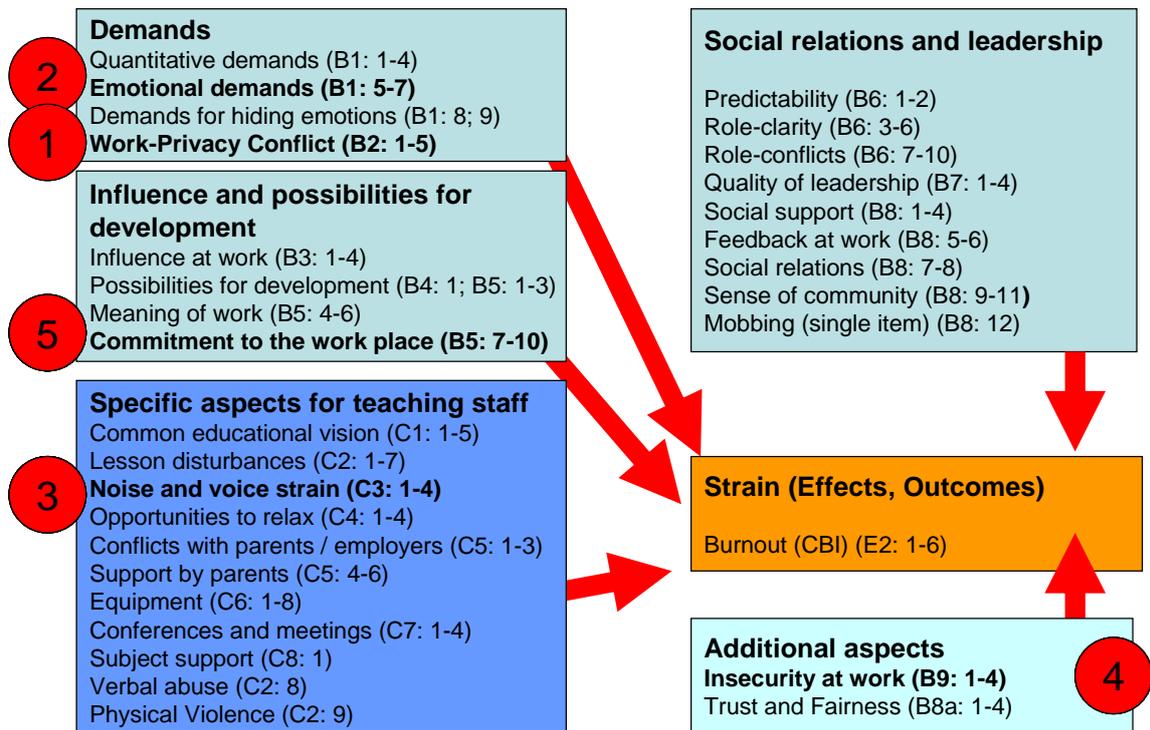


Figure 25: Regression model for “burnout (CBI)”. First five predictors,  $R^2=0.47$

Two inclusions are found for “Commitment to the work place”, “Sense of community”, “Trust and fairness” (especially a first place for job satisfaction), and “Insecurity at work”.

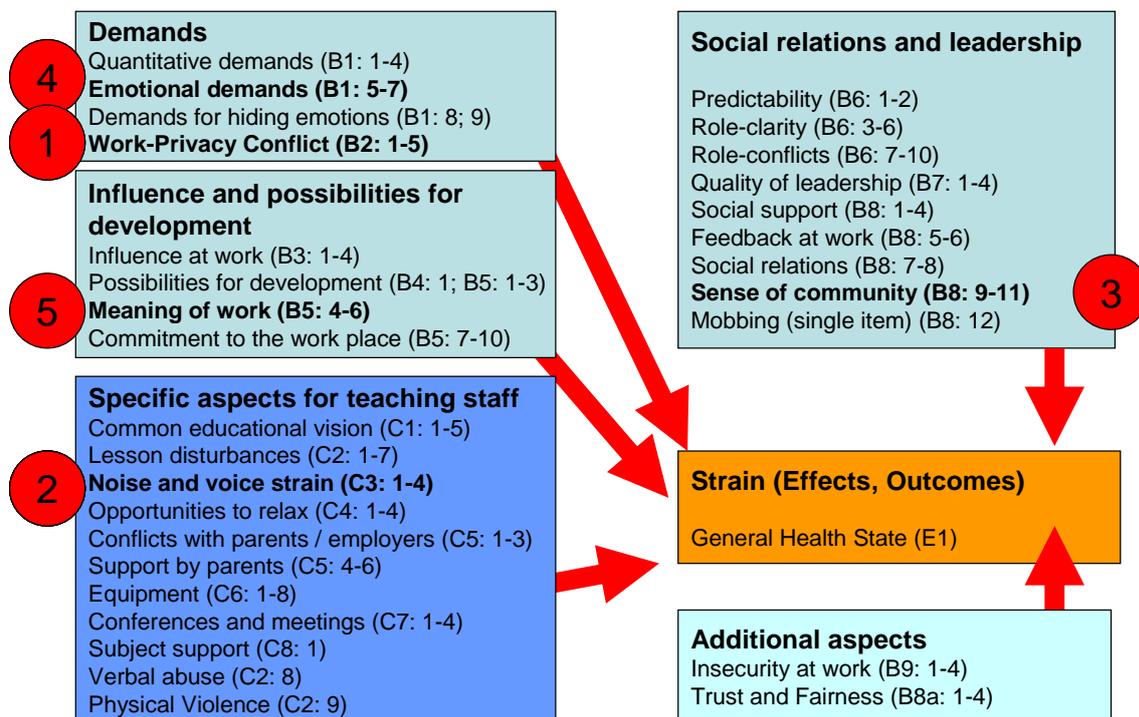


Figure 26: Regression model for “General health state”. First five predictors,  $R^2=0.19$

From the teacher-specific factors, three models contain the scale “Noise and voice strain” as a stressor. All three models are concerned with health-related outcomes.

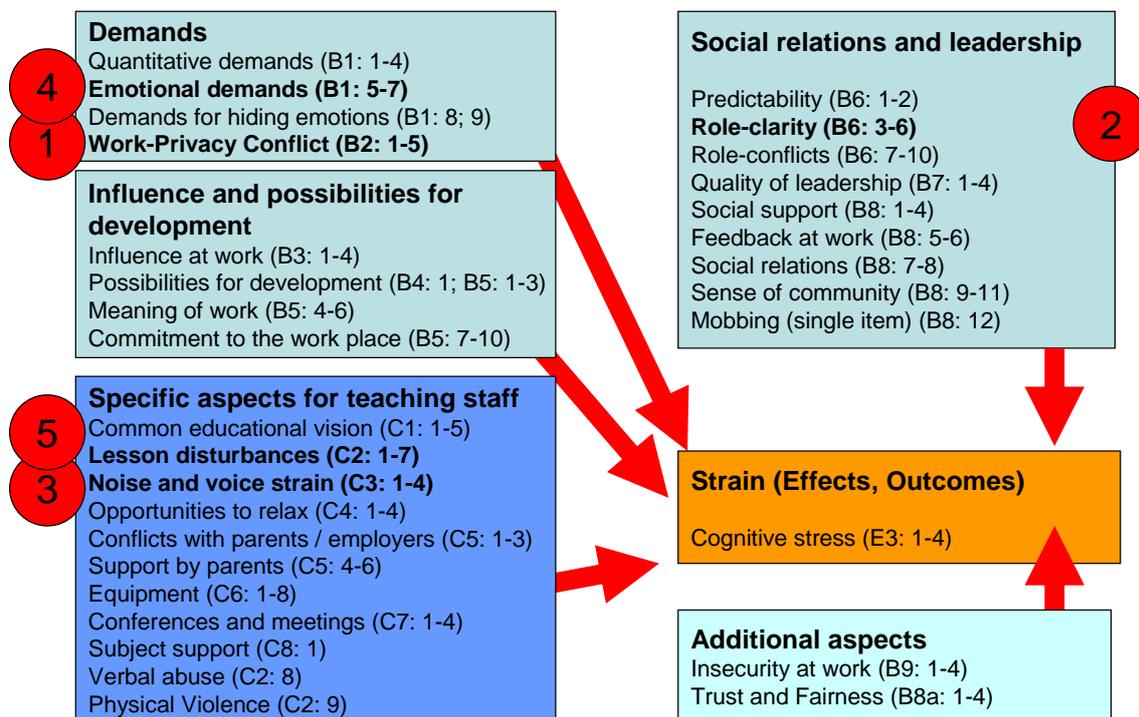


Figure 27: Regression model for “Cognitive stress”. First five predictors,  $R^2=0.29$

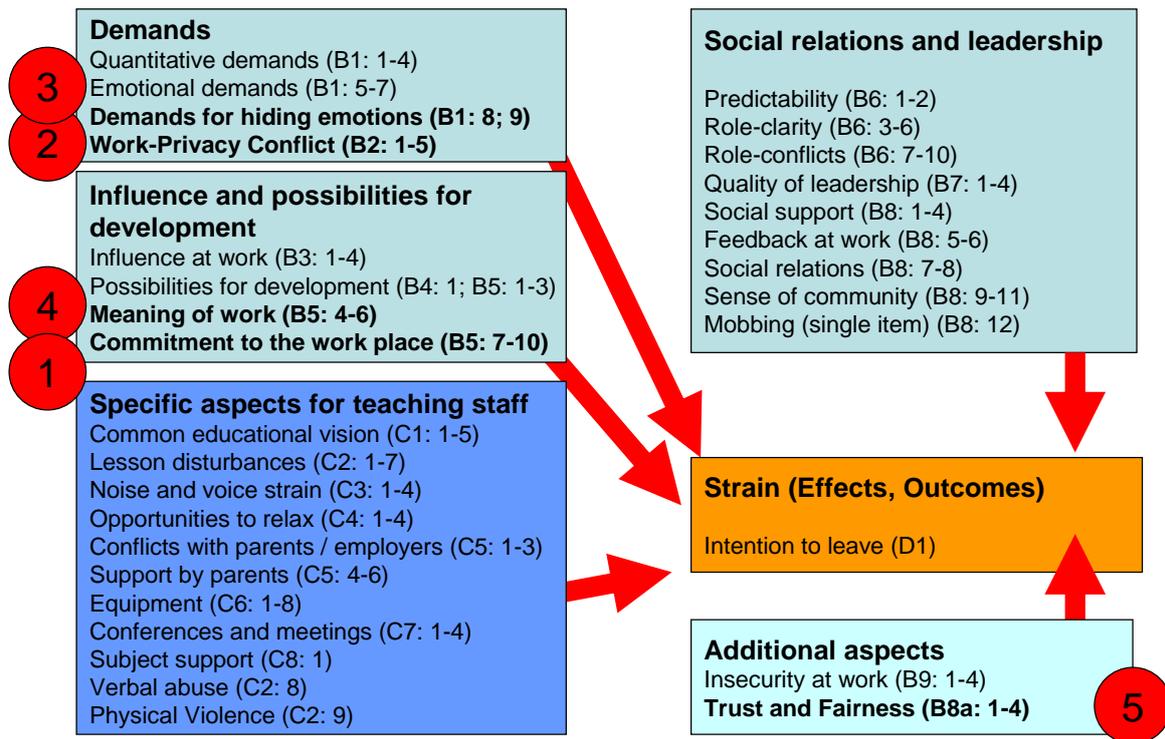


Figure 28: Regression model for "Intention to leave". First five predictors,  $R^2=0.25$

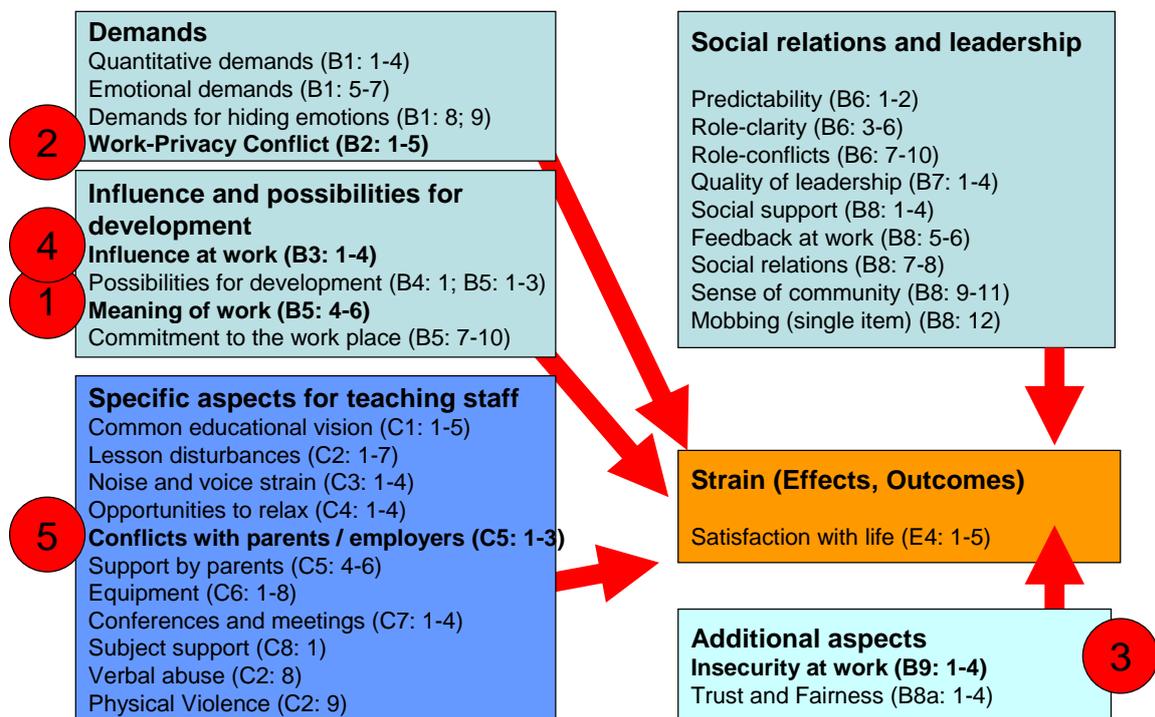


Figure 29: Regression model for “Satisfaction with life”. First five predictors,  $R^2=0.22$

Remark on the models:

Supplementary inclusion of the 11 structural and socio-demographic factors of part A of the questionnaire in the strain-stress models does not affect the three models presented graphically: none of these factors is among the first 5 predictors in these models.

This does not mean that e.g. “Number of pupils in class” is not statistically related to “Burnout” and to “Noise and voice strain” (in fact it is, and reducing the number of pupils would thus have an effect on noise in the models). But it does mean that the aspect “Noise and voice strain” is related more closely to “Burnout” than the mere number of pupils in class; “Number of pupils” only indirectly influences “Noise” and therefore influences “Burnout” only in a second step.

The explanations are that

- a) It is not the large class “per se” which is the stressor, but rather the “Noise and voice strain” – if a class is large and silent the model predicts less “Burnout” than for a class that is small but noisy.
- b) “Number of pupils” is not the only factor that can cause “Noise and voice strain”. Building-related factors, such as acoustic insulation or reverberance, can also be causal factors for noise independently of class size.

## **4 Summary and conclusions**

### **4.1 Background**

It is well known from several studies that the work of teachers implies some particular strain factors, such as greater emotional demands and work-privacy conflict than most other professions. It is also known that teachers demonstrate higher levels of burnout and cognitive stress when compared to most other professions, or to the general mean of employees.

Teachers do also have some structural advantages, like greater influence at work or better possibilities for professional development than other professions.

However, a comprehensive assessment of the psychosocial factors at work in teachers in the EU has not yet been presented.

### **4.2 Aims and methods**

The ETUCE pilot study was carried out in 2011 in 30 countries of the EU and EFTA.

One aim was to test the suitability of the process for the risk assessment of psychosocial factors in schools. This related to all parts of the survey process: questionnaire, survey performance and school reports.

The other aim was the valid and reliable assessment and comparison of the workplace situation and work-related stress of teachers in the EU, in different countries, in single schools and according to socio-demographic factors, such as age, gender, etc.

A validated and widely-used questionnaire - the German teacher-specific COPSOQ including general and teacher-specific aspects and already completed by more than 50,000 respondents - was adapted, translated into 21 languages, tested and placed on a web platform as an online survey for teachers.

### **4.3 Results concerning single schools**

In total, 4561 teachers in 499 schools took part in the survey in May/June 2011. Each participant received immediate direct feedback comparing their personal results on psychosocial factors to the overall teachers' mean. No major technical problems were reported with the understanding and completion of the questionnaire or with the information given before (information material) and during the survey (FAQs and information on web platform).

All participating schools received their school reports plus supplementary information by the end of July, comparing the school mean values to the country mean and the total mean across all countries. Schools with less than 5 participants were sent a reduced report without school-specific values. With the results of the school report, each school can prioritise the main differences to other schools and thus the areas of probable fruitful intervention.

The FFAS received no complaints regarding the reports, however some schools had difficulties with the English language and some schools reported that they would need further support, especially in the process following assessment – the “translation” of the findings into appropriate measures. The presentation given by Stefanie Kaempf at the final conference of the ETUCE project in Berlin, November 17<sup>th</sup>-18<sup>th</sup> 2011, on how to make good use of the COPSOQ results might provide some good advice. More concrete information can also be found on the teachers’ health and safety website: [www.edu-osh.eu](http://www.edu-osh.eu).

Psychometric reassessment of the questionnaire (validity, reliability) confirmed the results obtained with the original instrument.

In total, questionnaire, assessment process and reports seemed to be appropriate for the risk assessment process in schools.

However, it remains to be seen whether schools need assistance with interpretation and taking appropriate action. Moreover, schools, teachers, teacher unions and education employers need to consider establishing support systems that are adapted and appropriate to the different country contexts to support and monitor further improvements.

#### **4.4 Results concerning general analysis**

In the general analysis of the survey data (N=5461), all 36 aspects of the questionnaire were analysed, by country and by several parameters such as type of school, age, etc.

Comparisons by country (analysis of variance) revealed that there are factors with rather strong differences inside the EU/EFTA, like “Insecurity at work”, “Emotional demands” or “Physical violence”. Other factors depend less on country specific, like “Meaning of work” or “General health state”.

These comparisons at national level can indicate which factors could be priority “action fields” for improvement processes in each country. The purpose of such a comparison is not to introduce standard values for each factor all across Europe, but to point out where each country has higher strain or stress levels than its neighbours.

Comparison by structural socio-demographic parameters revealed some expected differences, such as the better “Common educational vision” in smaller or primary schools or the decreasing values for “General health state” by age. These results could be used for subgroup-specific prevention strategies, like a prevention programme focusing on older teachers’ health.

Another way to define and prioritise (possible fruitful) prevention fields is to identify which are the most important workplace factors related to outcomes. This was done for all six outcome factors (satisfaction- and health-related) used in this survey. A major factor involved in all models was “Work-privacy conflict”, indicating that this is a very promising prevention field.

In the model of workplace factors related to “Burnout” and also to “General health state”, “Work-privacy conflict” was the most important factor.

Figure 30 shows the close and almost linear relationship between the outcome “Burnout” and the most important workplace factor related to it, “Work-privacy conflict”. A 10-point reduction in “Work-privacy conflict” relates to an approximately 5-point reduction in “Burnout”.

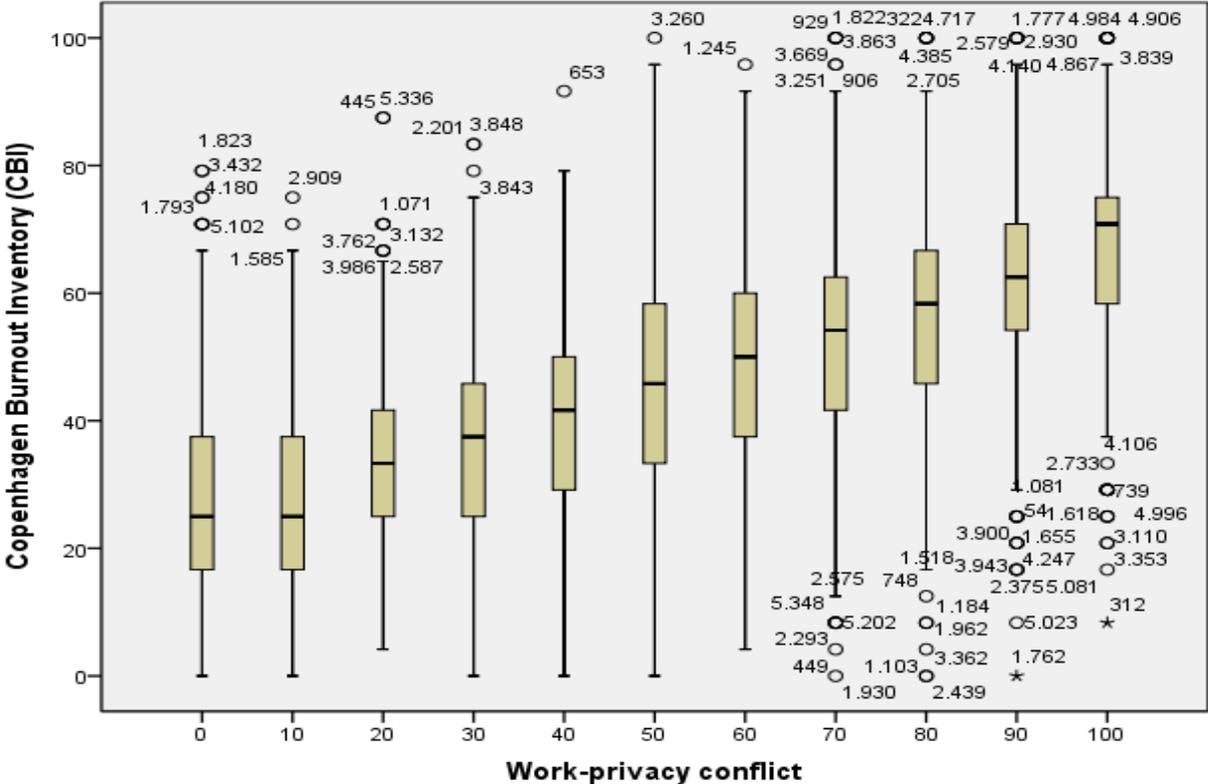


Figure 30: Relation between “Work-privacy conflict” and “CBI: Personal burnout”. 5461 teachers

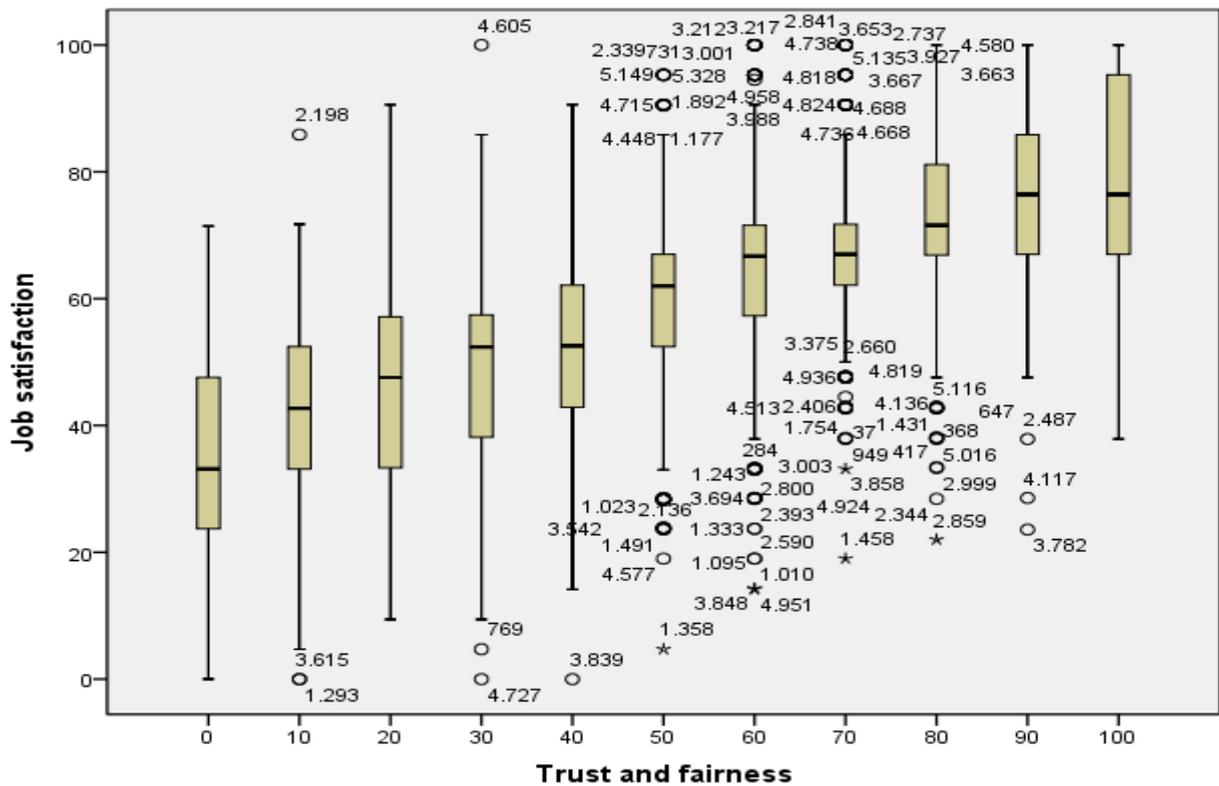


Figure 31: Relation between “Job satisfaction” and “Trust and fairness”.  
5461 teachers

In the model for “Job satisfaction”, “Trust and Fairness” was the most important factor. As the figure shows, a 10-point change in “Trust and fairness” corresponds to a 4 to 5-point change in “Job satisfaction”.

This means for preventive actions: if by appropriate actions we are able to improve “Trust and fairness” in the workplace by 10 points we will be “rewarded” by a 4-5-point improvement in job satisfaction.

#### 4.5 Strengths and limitations

One major issue of the study is the question of representativeness. The schools selected to take part in the study might not reflect the distribution of schools by number of teachers, school type, region, etc. in each country. Furthermore, the representativeness of the teachers answering the survey in a school is difficult to analyse. In addition, although the sample taken in this survey is rather large with more than 5000 teachers in total, in some countries it was only possible to include a small number of teachers.

All these limitations could be attenuated by gathering more data in schools in Europe in order to create a bigger database with more assured reference values for countries and school types, etc.

However, the present study does also have some advantages and strengths. In the first place it should be underlined that the survey was carried out in all countries at the same time with the same instrument – this makes comparisons more reliable.

Furthermore, the instrument used had already been psychometrically tested and widely used before, and the measurement qualities (validity, reliability) were successfully reassessed in this international study.

With a participation of more than 5000 teachers from all over Europe, this pilot study is one of the largest ever performed.

Even with the limitations declared, this data collection is at present the best empirical base currently available to interpret the psychosocial situation of teachers in Europe.

## 4.6 Future questions

Some future questions arise from the project and its findings. These are:

1. Is the possibility of performing risk assessment for psychosocial factors using the setting of this pilot study (instrument, online survey and report system) offered to other schools?
2. Can the 500 participating pilot schools be supported in the further process of developing and performing improvement processes?
3. Can national and international strategies for improvement of the workplace situation and WRS of teachers be derived from the results of this study?
4. Will the whole process of risk analysis be evaluated in the 500 pilot schools in 2-3 years?

Moreover, the suitability of the assessment system, the supportive processes and the improvement actions undertaken at school or national level can be analysed with regard to their success, in order to establish and propagate models of good practice.

**Key words:** work-related stress, risk assessment, COPSOQ, teacher, psychosocial hazard, social partners

## 5 References

Abel MH, Sewell J (1999). Stress and burnout in rural and urban secondary school teachers. *The Journal of Educational Research*, 92, 287-293

Badura B, Schröder H, Klose J, Macco K (Eds, 2010). *Absenteeism-report 2009. Work and psyche.* (German: *Fehlzeiten-Report 2009. Arbeit und Psyche.*) Springer, Berlin, Heidelberg, New York

Bauer J (2009). Burnout among school teachers. (German: *Burnout bei schulischen Lehrkräften.*) *Psychotherapie im Dialog*, 10, 251-255

Bauer J, Unterbrink T, Hack A, Pfeifer R, Buhl-Grießhaber V, Müller U et al. (2007). Working conditions, adverse events and mental health problems in a sample of 949 German teachers. *Int Arch Occup Environ Health* 80 (5), pp. 442–449

Billehøj H (2007). Report on the ETUCE Survey on Teachers' Work-related Stress. [http://teachersosh.homestead.com/Publications/DraftReport\\_WRS\\_EN.pdf](http://teachersosh.homestead.com/Publications/DraftReport_WRS_EN.pdf)

Blase J, Dedrick C, Strathe M (1986). Leadership behavior of school principals in relation to teacher stress, satisfaction, and performance. *Journal of Humanistic Education and Development*, 24, 159-171

Burr H, Albertsen K, Rugulies R, Hannerz H (2010). Do dimensions from the Copenhagen Psychosocial Questionnaire predict vitality and mental health over and above the job strain and effort—reward imbalance models? *Scand J Public Health* 38: 59-68.

Cronbach LJ (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*; 16:297-334.

Cortina JM (1993). Coefficient alpha? An examination of theory and applications. *J Appl Psychol*; 78:98-104.

Cox T, Griffiths A, Rail-González E (2000): *Research on work-related stress.* European Agency for Safety and Health at Work (Ed.), Luxembourg: Office for Official Publications of the European Communities

DeVellis RF (1991). *Scale development. Theory and applications*, 1<sup>st</sup> ed. London: Sage Publications

Dick Rv (1999). *Stress and job satisfaction in the teaching profession: An analysis of stress and strain in the context of social-psychological, clinical psychological and organisational psychological concepts.* (German: *Stress und Arbeitszufriedenheit im Lehrerberuf. Eine Analyse von Belastung und Beanspruchung im Kontext sozialpsychologischer, klinisch-psychologischer und organisationspsychologischer Konzepte.*) Marburg: Tectum

Gieske M, Hara B (2009). *Theoretical background and state of research on teachers' health* (German: *Theoretischer Hintergrund und Forschungsstand zur*

Lehrergesundheit.) In: Harazd B, Gieske M, Rolff H-G (2009), Gesundheitsmanagement in der Schule. Köln: Link Luchterhand, 13-43

Jacobsson C, Pousette, A, Thylefors I (2001). Managing stress and feelings of mastery among Swedish comprehensive school teachers. *Scandinavian Journal of Educational Research*, 45, 37-53.

Kaempf S, Krause A (2004). Risk assessment for the analysis of psychological workload in the working place school. (German: Gefährdungsbeurteilungen zur Analyse psychischer Belastungen am Arbeitsort Schule.) In: Bungard W, Koop B, Liebig C (Eds), *Psychologie und Wirtschaft leben - Aktuelle Themen der Wirtschaftspsychologie in Forschung und Praxis*. München: Rainer Hampp, 314-319

Karasek RA, Theorell T (1990). *Healthy work. Stress, productivity, and the reconstruction of working life*. New York: Basic Books

Krause A, Dorsemagen C (2011). Health promotion for teachers. (German: Gesundheitsförderung für Lehrerinnen und Lehrer). In: Bamberg E, Ducki A, Metz E-M (Eds), *Gesundheitsförderung und Gesundheitsmanagement in der Arbeitswelt*. 139-157

Krause A, Dorsemagen C, Alexander T (2011). Stress and strain in the teaching profession: Workplace and condition-based research (German: Belastung und Beanspruchung im Lehrerberuf: Arbeitsplatz- und bedingungsbezogene Forschung). In: Terhart E, H. Bennewitz H, Rothland M (Eds), *Handbuch der Forschung zum Lehrerberuf*. Münster: Waxmann, 788-813

Kristensen TS, Hannerz H, Høgh A, Borg V (2005): The Copenhagen Psychosocial Questionnaire (COPSOQ) - a tool for the assessment and improvement of the psychosocial work environment. *Scand. J. Work Environ. Health* 31, 438-449

Kristensen TS (1996). Job stress and cardiovascular disease: a theoretic critical review. *Journal of occupational health psychology*; 1 (3):246–60.

Kompier M (2005). Assessing the psychosocial work environment - "subjective" versus "objective" measurement. *Scand J Work Environ Health*, 31(6):405-408

Kopp MS, Thege BK, Balog P, Stauder A, Gyöngyvér S, Rószs S, György P, Ádám S (2010). Measures of stress in epidemiological research. Review article. *Journal of Psychosomatic Research* 69: 211-225

Kuhn K (2010). Mental health in the workplace from a European perspective (German: Psychische Gesundheit am Arbeitsplatz aus Europäischer Sicht) in: Badura B, Schröder H, Klose J, Macco K (eds.). *Fehlzeiten-Report 2009*, 41-50.

Kunz-Heim D, Nido M (2008). Burnout in the teaching profession. Definition – causes – preventions. Overview of the current literature (German: Burnout im Lehrberuf. Definition - Ursachen - Prävention. Ein Überblick über die aktuelle Literatur). Aarau: Pädagogische Hochschule FHNW.

Nübling M, Stößel U, Hasselhorn H-M, Michaelis M, Hofmann F (2005). Methods for the assessment of mental workload - testing of a measuring procedure (COPSOQ).

(German: Methoden zur Erfassung psychischer Belastungen - Erprobung eines Messinstrumentes (COPSOQ)). Schriftenreihe der Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, Fb 1058. Wirtschaftsverlag NW, Bremerhaven

Nübling M, Stöbel U, Hasselhorn HM, Michaelis M, Hofmann F (2006). Measuring psychological stress and strain at work: Evaluation of the COPSOQ – Questionnaire in Germany. *GMS Psychosoc Med*; 3: Doc05. Available from: <http://www.egms.de/en/journals/psm/2006-3/psm000025.shtml>

Nübling M, Andersen HH, Mühlbacher A, Schupp J, Wagner GG (2007). Computation of Standard Values for Physical and Mental Health Scale Scores Using the SOEP Version of SF12v2. *Schmollers Jahrbuch: Journal of Applied Social Science Studies / Zeitschrift für Wirtschafts- und Sozialwissenschaften*, vol 127, issue 1: 171-182

Nübling M, Wirtz M, Neuner R, Krause A (2008). Measuring psychological stress among teachers. Development of an instrument for the census-survey in Baden-Württemberg. (German: Ermittlung psychischer Belastungen bei Lehrkräften. Entwicklung eines Instruments für die Vollerhebung in Baden- Württemberg). *Zbl Arbeitsmed* 58: 312-313 <http://schule-copsoq.de/data/COPSOQ-Zentralblatt-Arbeitsmedizin-Oktober-2008.pdf>.

Nuebling M, Hasselhorn HM (2010). The Copenhagen Psychosocial Questionnaire in Germany: From the validation of the instrument to the formation of a job-specific database of psychosocial factors at work. *Scand J Public Health* 38: 120-124

Parent-Thirion A, Fernández Macías E, Hurley J, Vermeylen G (2007): Fourth European Working Conditions Survey. European Foundation for the Improvement of Living and Working Conditions, Dublin (Ed). Luxembourg: Office for Official Publications of the European Communities, <http://www.eurofound.europa.eu/surveys/ewcs/2005/index.htm>

Siegrist J (1996). Adverse health effects of high effort – low reward conditions at work. *J. Occupat. Health. Psychol.*, 27-43

Stöckli G (1998). How burnt out are primary school teachers in Switzerland? About the largely unmentioned problems of measuring burnout (German: Wie ausgebrannt sind Schweizer Primarlehrkräfte? Von den meist unterschlagenen Problemen bei der Messung von Burnout). *Bildungsforschung und Bildungspraxis*, 20, 240-249

Unterbrink T, Hack A, Pfeifer R, Buhl-Grießhaber V, Müller U, Wesche H, Frommhold, M, Scheuch K, Seibt R, Wirsching M, Bauer J (2007). Burnout and effort-reward-imbalance in a sample of 949 German teachers. *International Archives of Occupational & Environmental Health*, 80, 433–441

van der Doef M, Maes S (2002). Teacher-specific quality of work versus general quality of work assessment: A comparison of their validity regarding burnout, psychosomatic well-being and job satisfaction. *Anxiety, Stress and Coping*, 15, 327-344

Vandenberghe R, Huberman AM (Eds, 1999). Understanding and preventing teacher burnout. A source book of international research and practice. Cambridge, UK: Cambridge University Press

Vegchel N, Jonge J, Bosma H, Schaufeli W (2005). Reviewing the effort–reward imbalance model: drawing up the balance of 45 empirical studies. *Social Science & Medicine*; 60:1117–31.

Ware JE, Jr., Kosinski M, Keller SD (1996). A 12 Item Short Form Health Survey: Construction of scales and preliminary tests of reliability and validity. *Med Care*; 34:220-233.

## Link to survey

The original web platform of the survey was: [www.teacher-copsoq.eu](http://www.teacher-copsoq.eu)

A test version with all features is still online at:

<https://www.teacher-copsoq.eu/index.php/survey/4?showtext=1>

login: ETUCE, Password: test123

More information (in English) on the COPSOQ International Network: [www.copsoq-network.org](http://www.copsoq-network.org).

More information (in German) on the German COPSOQ: [www.copsoq.de](http://www.copsoq.de)

Reference values according to occupation, age, gender (download standard tables or selection of specific subgroups): interactive COPSOQ online-database (in German), N=10.022 employees): [www.copsoq-datenbank.de](http://www.copsoq-datenbank.de)

## Screenshots from the online survey:

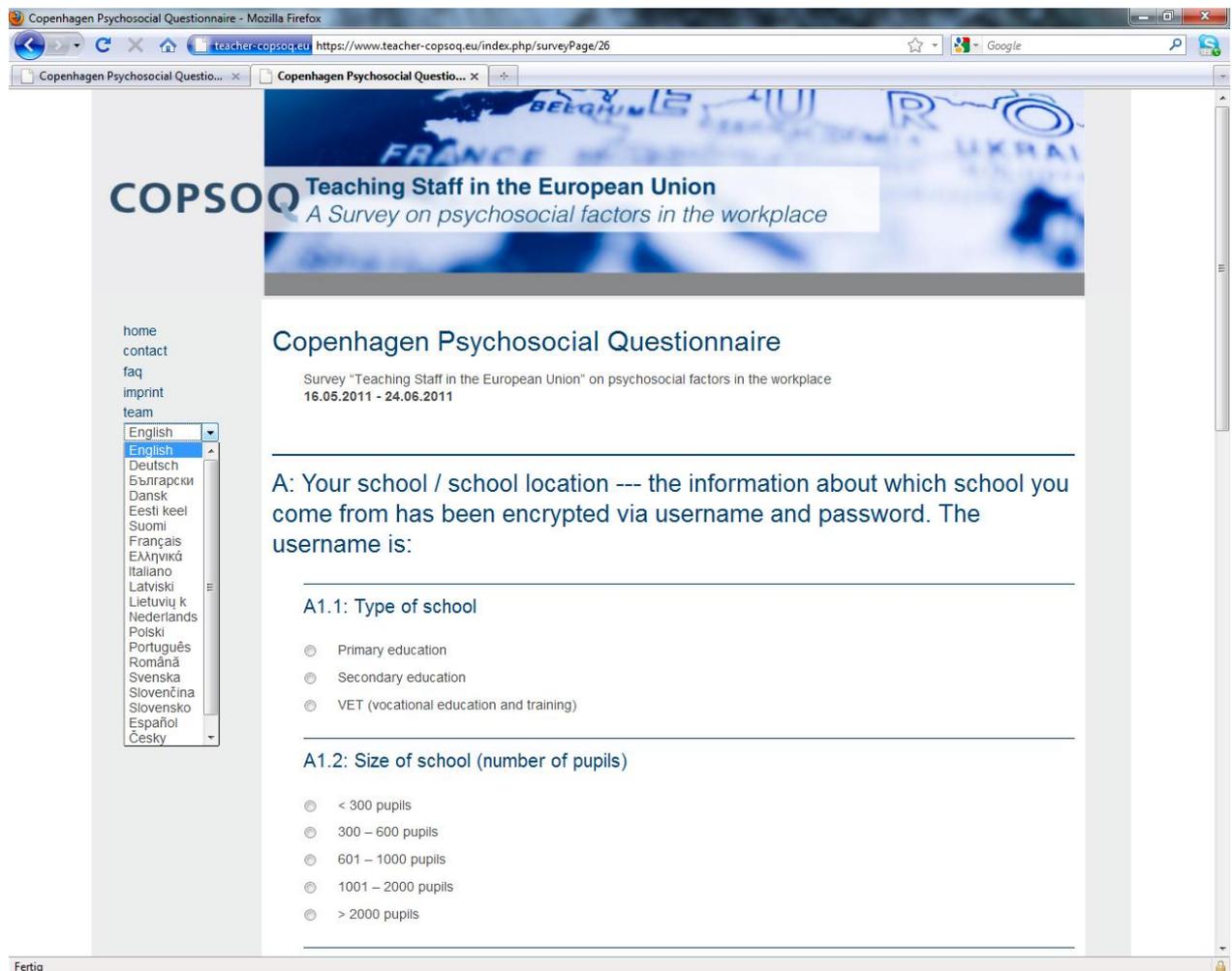


Figure 32: Screenshot 1: Start of online questionnaire (English language chosen on the left)

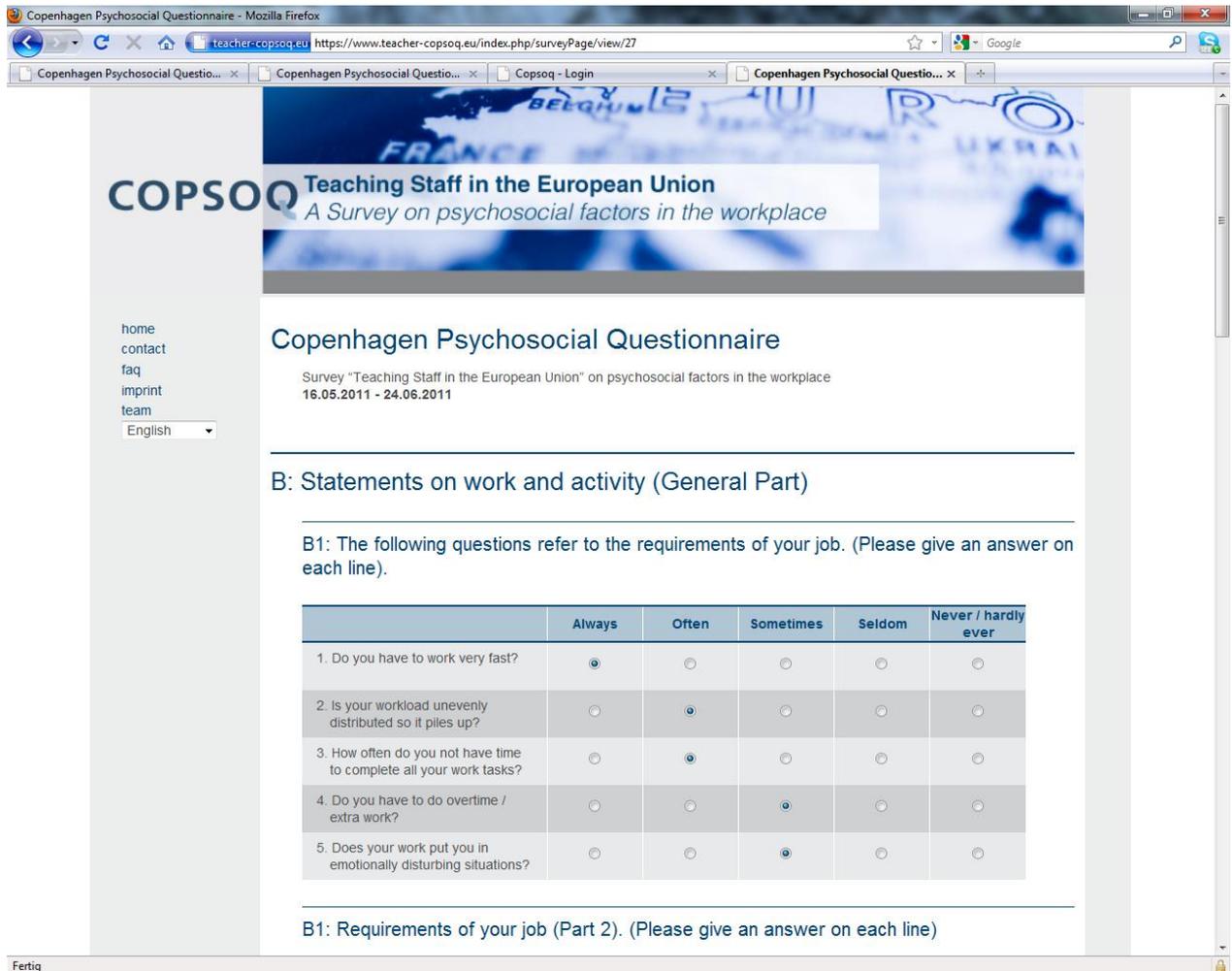


Figure 33: Screenshot 2: First questions B1.1 – B1-4 on “Quantitative demands”. The scale value is the mean on a scale from 0-100, here: 75 points

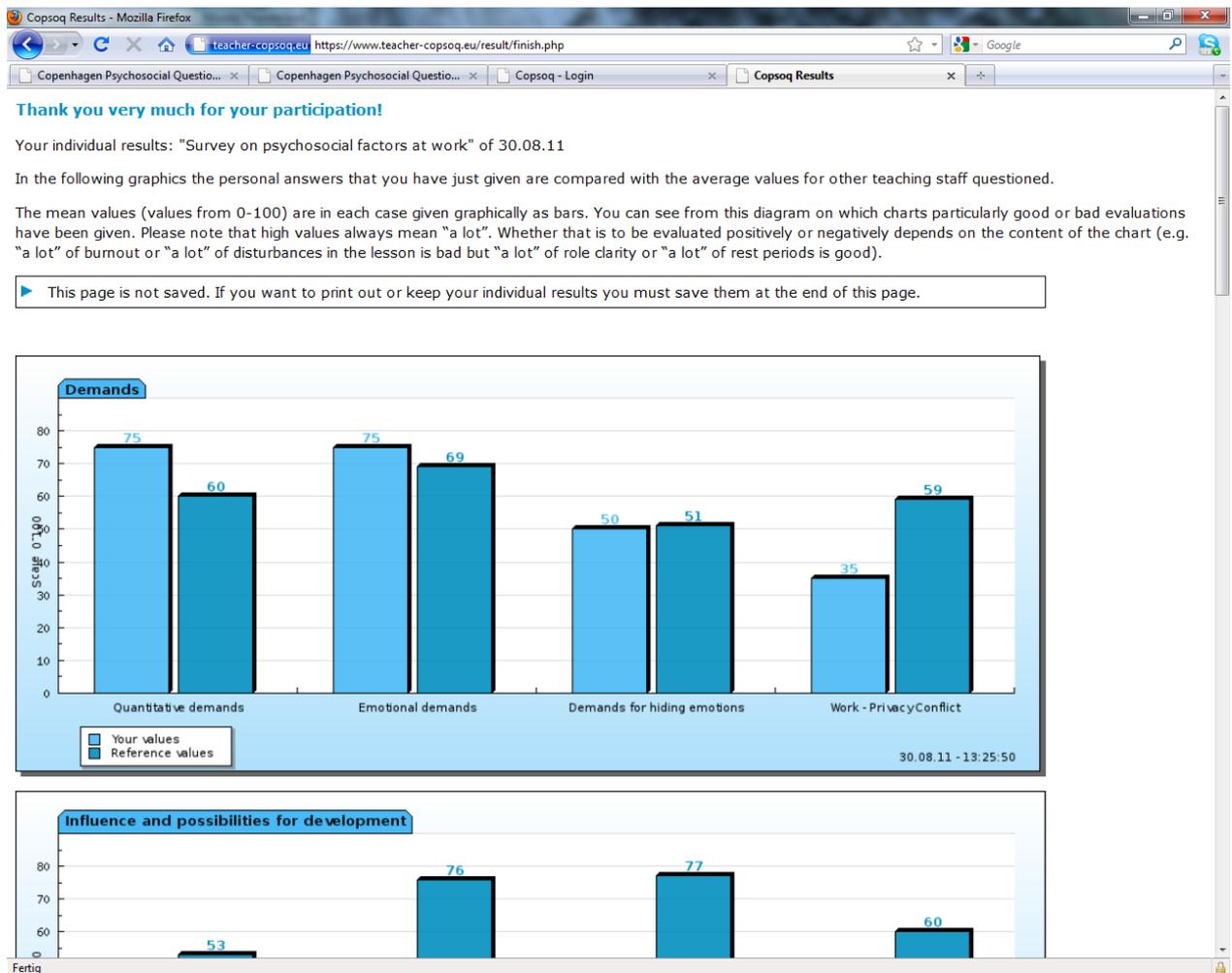


Figure 34: Screenshot 3: Example of individual direct feedback at the end of the survey. Individual results of single teachers are compared to the overall teachers' mean (see: Quantitative demands: 75 points individual result vs 60 points general reference)