

Annexes

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Annex A – Information relating to Section 2

1. Replacement Needs Model Technical Specification
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3. Overview of replacement needs data sources, variables and a record of relevant discussions
4. Case study Netherlands: The forecasting model developed by the Dutch Ministry of Education

1. Replacement Needs Model Technical Specification

Introduction to the Replacement needs model

The replacement needs model consists of two key components: demand for, and supply of teachers. The principle steps are outlined below.

Demand

Calculating the demand for teachers is in principle relatively straightforward. The key components are population projections from which the number of school aged children can be ascertained and the rates of participation in education, which when combined with population projections generates a projection of the number of pupils. Finally the pupil teacher ratio is applied to the number of pupils to determine the number of teachers which will be required for a given number of pupils.

Changes in pupil numbers are initially modelled using the population projections up to 2015 and keeping participation and pupil teacher rates constant. This shows the simplest form of demand shift, generally a reduction in demand due to the decreasing number of school aged children in Europe.

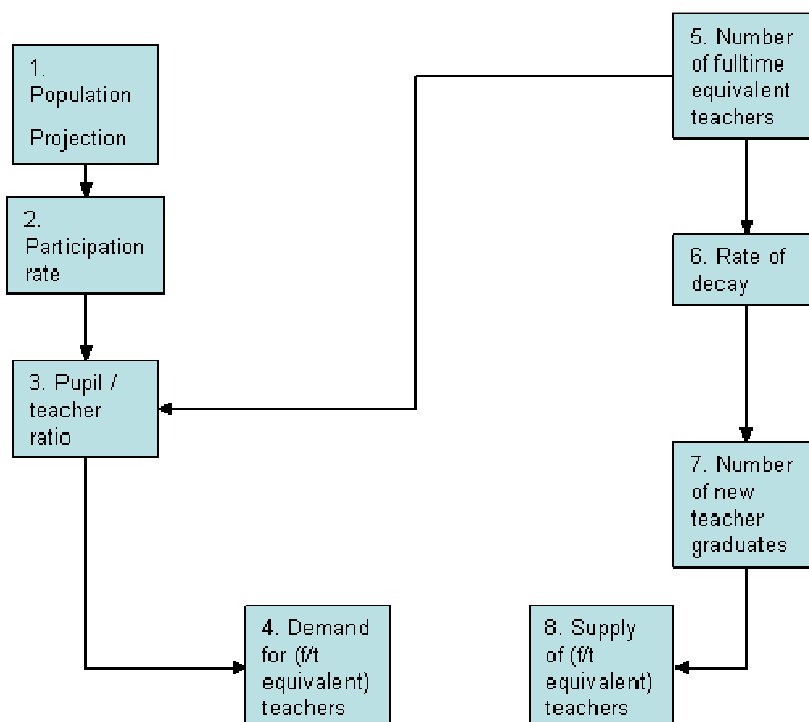
The effects of changes in participation and pupil teacher ratios are discussed in Section 5 and 8 of the report.

Supply

Calculating the future supply of teachers is more complicated. The initial stock of active teachers is established from the returns that each Education Ministry provides to Eurydice. These show the number of full time equivalent active teachers in five year age bands. From this it is possible to determine the age structure of the teaching profession in each country, and also the rate at which teachers are leaving the profession; this rate is referred to as the rate of decay and represents the rate at which (assuming no entrants) the stock of teachers decays to nothing.

This information alone is insufficient since, in order to calculate the total supply, new entrants to teaching must also be included. The turnover of teachers is masked in the total number of teachers, only net numbers are available and so it is not clear how many are leaving and how many are entering at each age, but it is possible to include the number of people who graduate with a teaching education qualification. This is only a proxy for the number of entrants, as there are teachers who teach without formal qualifications as well as those who return to teaching and so will not be recent graduates from teacher education.

Figure1 Description of the Replacement Needs Model Base Case



1. Population Projections

Population projections are sourced from Eurostat where available.

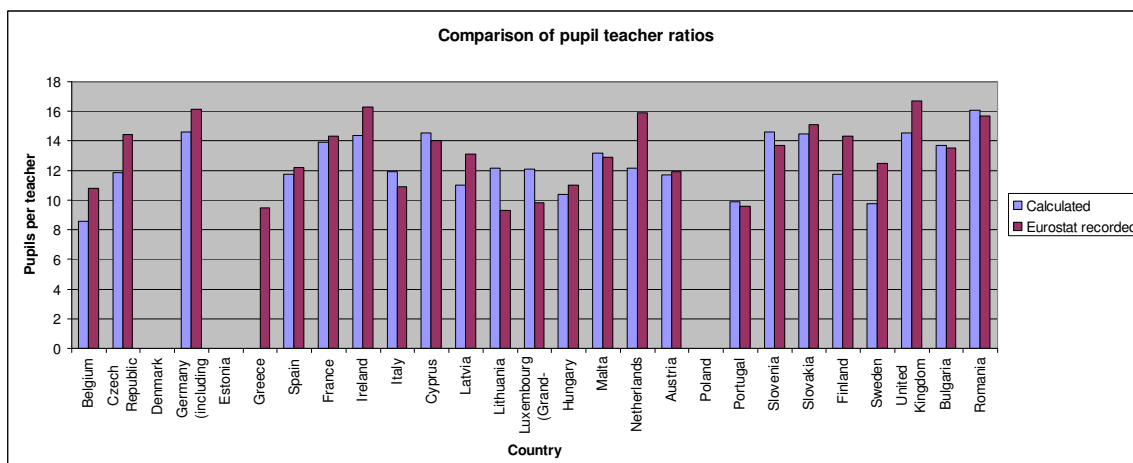
2. Participation Rate

Participation rates represent the percentage of people at each age who are in each level of education. These are taken from the UOE collection for 3-19 year olds. Post 19 year old, participation rates are not available from the UOE collection (non-OECD countries), but the LFS can be used to generate participation rates for people in ISCEC 0-3 who are older than 19.

3. Pupil Teacher Ratio

The pupil teacher ratios are calculated from the total number of pupils (school aged children and participation rates) divided by the total number of teachers at each ISCED level. This method ensures that the model is internally consistent, although this stage does introduce an element of interdependence between the supply and demand sides. The alternative would be to use the published pupil teacher ratios, although this introduces another danger of definitional mismatching. On balance it was decided that internal consistency was more important than the total independence of the supply and demand sides of the model. A comparison of these two sets of pupil teacher ratios is available below in Figure 2.

Figure 2 Pupil teacher ratios at levels 1, 2 and 3



It will be apparent on inspection of the base case graphs that as a result of this interdependence, the supply and demand points for the reference year (2004) are always on top of each other. This is because the model accepts the status quo in the reference year and projects forward the effects of population, decay rate and new entrants.

It should be noted that the depiction of supply = demand in 2004 does not imply that the pupil teacher balance was perfect in all countries that year; it is simply a device which can be used to project forward the effects on the pupil teacher balance. Country's own assessments of their progress towards the Lisbon Objectives provide a better snapshot; this model can be used to predict the direction of travel in the future.

The population projections, participation rates, and pupil teacher ratio result in a demand figure which represents the number of teachers that, under the circumstances of 2004, would be required to teach the number of pupils predicted. This is expressed in full-time equivalent teachers.

Supply of Teachers

4. Number of Teachers

The number of teachers is taken from the UOE data stored on Eurostat. This is collated from the returns of the national educational ministries. Teachers and trainers are recorded by 5 year age groups, gender and the level of education at which they teach. The table used was Pers_1. This includes all classroom teachers as well as teachers with significant managerial responsibility (e.g. head teachers), but does not include teacher aides, pedagogical support, health or social support workers.

5. Rate of Decay

As the number of teachers is provided in five year age bands it is possible to see the net change in teacher numbers at each in each age band, every 5 years. This is used to calculate the decay rate, or the rate at which the stock of teachers would diminish to zero if there were no new entrants. This gives valuable information about the age structure and the rate at which teachers leave the profession.

6. Number of New Teacher Graduates

The number graduates with a teaching qualification is taken as a proxy for the number of new entrants to the teaching profession.

This data comes from the UOE collection of graduates' field of education. In this case all graduates from 'Teacher Training and Education Science' were selected. This provides total numbers by sex of graduates in each country who have graduated from a programme included under this classification.

The base case estimates are calculated based on a constant number of teaching graduates, which is the same as those who graduated in 2004.

The chief limitation to this data is that it is not possible to determine at which level of education these graduates will teach if they choose to teach at all.

2. Replacement Needs Formulae

Aim

To compute the number of teaching professionals with teacher education in 2010 and 2015 in a country - based on assumptions about new graduates and mobility.

Variables

Assume

$G(t)$ = new teacher graduates during period t .

$GT(t,i)$ = inflow of new teacher graduates during period t to teaching profession during period t , in age group i . Those who enter and leave the profession within the period are excluded.

$I(t,i)$ = inflow of persons with teacher education to teaching profession during period t , in age group i . Those who enter and leave within the period are excluded.

$NT(t,i)$ = inflow of persons with teacher education to teaching profession during period t , in age group i , other than new graduates:

$$(1) \quad NT(t,i) = I(t,i) - GT(t,i).$$

$O(t,i)$ = outflow of persons with teacher education *from teaching profession* during period t , in age group i . Those who leave and re-enter within the period are excluded.

$N(t,i)$ = *net inflow* of persons with teacher education to teaching profession during period t , in age group i , defined as

$$(2) \quad N(t,i) = I(t,i) - O(t,i)$$

$P(t,i)$ = teaching professionals with teacher education by the end of period t , in age group i

$$(3) \quad P(t,i) = P(t-1,i-1) + N(t,i).$$

Age by end of period.

Five years periods, five years age groups.

$t=0, 1, 2, 3$.

$t=1$ is the period 2000-2005

$i=1, 2, \dots, 10$

$i=1$ is -24 years

$i=10$ is 65- years.

The *survival rate* of persons at the end of period t in age group i is defined as

$$(4) \quad s(t,i) = P(t+1,i+1)/P(t,i).$$

$(1-s)*100$ is the maximum percentage share who are still in the profession. It may be less, if the inflow has been positive.

The *total net inflow* of persons with teacher education to teaching profession during period t , in all age groups 1, 2, 3, 4 and 5, or *below 45 years*, is

$$(5) \quad N(t) = \sum_{i=1}^5 N(t,i) = \sum_{i=1}^5 [P(t,i)-P(t-1,i-1)].$$

We define $P(t,0)=0$.

The share of this total net inflow in each age group, is

$$(6) \quad q(t,i) = N(t,i)/N(t), \quad i=1, 2, \dots, 5.$$

For $i < 6$, we will assume these shares to be constant into the future.

We need to establish a *connection from the new graduates* and to the total net inflow (below 45):

$$(7) \quad r(t) = N(t)/G(t).$$

We will assume this rate to be constant into the future, equal to $r(1)$.

Estimations

We have observations on $P(1,i)$, and $G(1)$ for the country, but not observations on $P(0,i)$, $I(t,i)$ or $O(t,i)$.

$P(0,i)$ is estimated from observations on the population of teachers in 2003, 2004 and 2005 in each five years age group. The levels of the total population of teachers in teaching profession in 2000, 2001 and 2002 are estimated based on UOE-figures for total number of teaching professionals, and the numbers in each age group are adjusted to add up to this total.

When we have estimates on $P(0,i)$ and $P(1,i)$, we can estimate survival rates $s(0,i)$. From (3) we can estimate $N(1,i)$ and $I(1,1)$. Then we also can estimate $N(1)$, $q(1,i)$ and $r(1)$.

Model

The model forecasts $P(t,i)$, $t=2, 3$; and $i=1, 2, \dots, 10$ by assuming:

$$(8) \quad P(t,i) = P(t-1,i-1) + q(1,i) * r(1) * G(t), \quad t=2, 3; i=1, 2, 3, 4, 5; P(t,0)=0.$$

$$(9) \quad P(t,i) = s(0,i-1) * P(t-1,i-1), \quad t=2, 3; \quad i=6, 7, \dots 10.$$

For age groups below 45 years, (8) assume that the total net inflow below age 45 is proportional to the total number of new graduates and that the total net inflow below 45 is distributed on age groups as in period $t=1$ (2000-2005).

For age groups above 44 years, (9) assume constant survival rates as in period $t=1$ (2000-2005).

The model assumes that the inflow of teachers to teaching profession takes place below age 45 and that the survival rates determine the decay of the population from age 45 and up.

The reason to open for inflow of teachers up to age 45 is that the data shows increasing numbers in these age groups the higher the age. New teacher graduates are not all in the age group below 25 and we do not find them in the age group 25-29 among teaching professionals five years later. We have to open the model for a more complex pattern of movements between teaching education and the teaching profession. However, data on these flows of teachers are not available and we have to use data on the net results of the movements as seen in the age distribution of teachers in teaching in different years.

The survival rates are both a result of retirements and mobility out of and into the teaching profession. They can go to or come from unemployment, other occupations or inactivity.

3. Overview of replacement needs data sources, variables and a record of relevant discussions

Introduction

This section has been prepared in response to some of the queries made during the interim meeting on the Study on the Mobility of Teachers and Trainers which was held on 5 May 2006, as well as to additional questions provided to us by Eurydice and DG EAC after the meeting.

Several questions were raised during the interim meeting by Eurydice and DG EAC on the use of data sources to calculate the replacement needs for teachers. The questions concerned the choice of data sources (i.e. LFS or UOE data collection) for the demand for teachers as well as the supply for teachers. More specifically it was the view of Eurydice that UOE figures would be more suitable for the participation rates in the demand side of the model. Additionally, with regard to the supply side, the number of teachers by year of age may also be more accurately represented in the UOE data.

Based on all the evidence collected so far and a thorough analysis of the strength and weaknesses of both the LFS and UOE data sets, GHK's suggestion with regard to the data to be used for each of the variables as well as explanation on the strengths and weaknesses is presented in table 1 below. Table 2 summarises the data to be used and from which data sources for the overall replacement needs model.

Annex A to this note provides the full responses to specific questions raised by Eurydice and DG EAC (Maria Hrabinska) after the meeting.

Table 1 Overview of variables and data sources that could be used to calculate the replacement needs of teachers

Demand / Supply	Variable	Source	Description	Advantages	Disadvantages
Demand	Participation Rates	Labour Force Survey	Rates of participation in education are available for 15-30 year olds.	Post-compulsory participatory rates from the LFS run to 30 years of age, allowing the inclusion of older learners who also require teachers.	No participation rates are available for compulsory education or pre-compulsory education.
		Eurostat – ISCED 0-4	Participation rates listed by age at each level of education and for each country.	<ul style="list-style-type: none"> ▪ Detailed country specific data for each age and level of education ▪ Includes participation rates for pre-compulsory ▪ Includes participation rates for compulsory education 	<ul style="list-style-type: none"> ▪ Participation rates are presented as a percentage of the population at each year of age participating in each level. Including the level of education is a level of detail that is difficult to incorporate into the model. The percentages of each age group participating at each level means that the overall participation by age cannot easily be established. ▪ Some anomalies in the Eurostat data make incorporation into the model difficult (e.g. percentages >100)

Demand & supply	Pupil Teacher ratios	Calculated	Calculated from the population projections (number of pupils) divided by the total number of teachers in the model	<ul style="list-style-type: none"> ▪ Reflects actual pupil teacher ratio from the model ▪ Maintains consistency within the model 	<ul style="list-style-type: none"> ▪ Any limitations in the data used for the model will also be present in the participation rates.
		Reported	Reported from national level data and collected by Eurydice	The rates reported at national level are based on thorough research	Pupil teacher ratios are restricted to public institutions for many countries
Demand	Population Projections	Eurostat	Population projections predict the number of people at each year of age for by year and country. This is used to determine the number people that will need teaching.	These are the most detailed and comprehensive population projections.	Excludes: Croatia, Lichtenstein, Iceland, Norway and Turkey.
		United States Census Bureau	Population 5 year age bands by single year and sex	Includes Croatia, Lichtenstein, Iceland, Norway and Turkey. It is possible to produce 1 year estimates from these by averaging the 5 year age bands across single years. While obviously the accuracy of these averaged 1 year figures is high as the Eurostat 1 year projections, this will allow these countries to be entered into the model.	Only provides 5 year age bands rather than single year age projections needed to accurately model the demand side.
Supply	Number of teachers	Labour Force Survey	Average of first 3 quarters from LFS, based on the number of people who report their profession as Teacher Variable identified with the advice of Eurostat – ISCO4D. This data is listed by sex and single year of age .	Allows the age structure of the teaching population to be fully described.	The data is missing particularly for small countries where sample sizes are too low to provide reliable estimates of teacher numbers.

		Eurostat	Number of teachers in 5 year age bands from 24 years.	Using actual numbers rather than survey based estimates is more accurate.	5 year age bands are too broad to determine the age structure of the teacher population accurately enough to model the replacement needs.
		OECD	Number of teachers in 10 year age bands, by sex and the level at of teaching.	Using actual numbers rather than survey based estimates is more accurate.	10 year age bands are too broad to determine the age structure of the teacher population accurately enough to model the replacement needs.
Supply	Number of new teaching graduates	Eurostat	Number of graduates by level of education, sex and field of education.	Can be used as a proxy for the number of new entrants to teaching ¹ .	It is accepted that there are other entry routes to teaching which are not included in this data set: <ul style="list-style-type: none"> ▪ Returners² ▪ Teachers who have not undergone teacher education

¹ The supply of teachers will be based upon those graduates from Teacher Education Programmes.

² The pool of potential returners to teaching including those who hold teaching qualifications as well as those who have in the past worked as teachers, will be considered separately in detail. This will form part of the hypothesis testing and will be based on a separate extract from the LFS.

Conclusions

Based on the Table 1 above, the following data sets have been selected for inclusion in the replacement needs model.

Pupil Teacher ratios (demand & supply)

The pupil teacher ratios will be calculated from the total number of pupils divided by the total number of teachers at each ISCED level. The model which uses the UOE collection to derive the number of teachers will use UOE teacher numbers to calculate the pupil teacher ratio. Equally the model which uses the LFS for the number of teachers will use the LFS total number of teachers to calculate the pupil teacher ratio.

Population Projections (demand)

Population projections are sourced from Eurostat where available, and from US Census Bureau where Eurostat data is not available

Participation rates (demand)

Participation rates will be taken from the UOE collection for 3-19 year olds. For pupils in ISCED level 3 who are older than 19, participation rates by age are available for some countries (OECD countries) from the UOE collection. Where post 19, ISCED 3 participation rates are not available from the UOE collection (non-OECD countries), the LFS can be used by dividing the number of ISCED level 3 pupils at each age (post 19) by the total number of people of that age.

Number of pupils (demand)

The number of pupils will be calculated from the population projections and participation rates.

Number of teachers (supply)

In order to increase the robustness of the model we have decided to calculate two models in parallel, one using the number of teachers from the LFS (variable: ISCO4d) and another using the number of teachers in the UOE collection (table: pers2).

The LFS has the considerable advantage of offering the age of teachers in one year age bands; this allows a detailed analysis of the age structure and the rate at which teachers leave the profession. However, being a survey, the LFS data does not cover smaller countries in great detail, resulting in missing data in some of these smaller countries.

The UOE data provides the age of teachers only in five year age bands; this considerably reduces the power of the age structure analysis and so the ensuing projections of the rate at which teachers leave the profession. On the other hand, the UOE data is a far more complete set, with very few missing values. This contrasts with the LFS which has a large number of missing variables particularly in smaller countries.

On balance, creating two models in parallel strengthens the overall projections by incorporating the strengths of both sets of data and offsetting them against their weaknesses. It allows comparing the results from the LFS and UOE based models in larger countries as a check of overall robustness.

In the report only the base case projections based on the UOE data have been presented. Occasionally reference has been made to the LFS base case projections which have been conducted but the latter have been removed from the report after assessment of their usefulness.

Table 2 Summary of data sources used in the replacement needs model

Demand Supply	/	
Demand supply	&	Pupil teacher ratios Calculated from the total number of pupils divided by the total number of teachers at each ISCED level. The UOE model will use UOE data for the number of teachers while the LFS based model will use the LFS number of teachers.
Demand		Participation rates Will be taken from UOE sources where possible.
		Population projections Sourced from Eurostat where available, US Census Bureau where Eurostat data is not available.
		Number of pupils Calculated from the Eurostat population projections and UOE participation rates.
Supply		Number of teachers Two versions of the model have been created. One with the number of teachers from the LFS, the other with the number of teachers from UOE.
		Number of new teaching graduates (supply) Number of graduates by level of education, sex and field of education (table grad5) – Eurostat.

Responses to the specific questions of Eurydice and DG EAC

Please note that the queries are in bold, responses are in normal text.

1. In terms of the table it is not clear what column three covers - you mentioned all levels (which levels are you talking about)?

Column 3 is a description of the data set, how it is laid out and the variables it contains.

Level of education refers to pre-primary, primary and lower secondary and upper secondary unless it is otherwise stated (e.g. including Special Needs).

Level 0 = Pre primary

Level 1 = Primary

Level 2 = Lower secondary

Level 3 = Upper secondary

2. Your comparison of LFS and UOE data is based on LFS covering all levels (including pre-primary and special needs education) while you use UOE for only ISCED levels 1-3 - why is this?

The column heading was incorrect. The UOE data on the number of teachers (pers2_d) in the second table is a summation of teachers at Levels 0, 1, 2 and 3. 'All Levels' includes teachers in higher education as well.

The number of special needs education teachers is not reported in the UOE data (pers2_d). It is included for over almost half countries in the LFS (with the exception of France, Greece, Ireland, Cyprus, Latvia, Luxembourg, Malta, Portugal, Slovenia, Croatia, Romania, Turkey and Iceland). The literature review will be used to explore special needs teachers where they are not reported in the LFS data.

3. You show comparisons only for big countries, while for small countries the problem of non-comparability between the two data sources might be bigger.

Yes, we showed data from some of the countries which we presented from the model, this was because, having run them through the model we had conducted all the necessary checks on their data.

It is true that some smaller countries may have wider variations between the UOE figures and the LFS. Where there is a lack of LFS data (for instance in some small countries) teacher numbers from the UOE collection can be used to provide some less powerful projections.

However, as the focus of the model is on projections, the single year age structure is the most necessary feature of the data. This is only apparent in the LFS. The significance of the single year age band is described below.

4. Why are you so committed to the use of LFS data for number of teachers? I am not saying you shouldn't, but why not using UOE?

In order to project the supply of teachers, the most important factor is determining the age structure of the teaching population. In order to accurately determine the age structure, teacher numbers must be presented by single year of age so that the body of teachers can be tracked year on year to identify the rate at which they leave the profession.

The Eurostat data (pers2_d) presents teacher numbers by 5 year age bands. This dramatically reduces the power of the projections. There are two possible work arounds with this data; however, where there is full LFS data available, we would not recommend either.

- a. Using a formula it would be possible to divide the 5 year age bands into 1 year age bands. However, this would not improve the accuracy as it is simply a manipulation of the original 5 year data. A projection would be possible, but it would not stand up to rigorous scrutiny.
- b. Projections could be generated at 5 year intervals. This would in effect treat the 5 year data in the same way as the one year data, and so consequently would have to change the reference years to corresponding 5 year intervals. This method is generally considered less satisfactory for projecting employment from the age structure because the 5 year age bands are too wide to argue that the same body of teachers is being tracked. It also clearly lacks the continuous trend data which is the strength of using single year age bands.

The LFS, with its single year age bands provides a sound basis for projections based on trend data. The UOE data, with its 5 year age bands provides a good snapshot of overall teacher numbers but it does not allow the age structure to be modelled with as much accuracy.

However, there are countries where the LFS data has a large number of missing values, because the sample size is too small. These missing values would weaken the projections. It is therefore proposed that two models will be developed, one using the UOE data on teacher numbers, and the other being based on LFS estimates of teacher numbers.

- 5. Comparison is made between LFS and Eurostat, in terms of denomination of sources it seems that it would be more accurate to speak of LFS (provided by Eurostat) and UOE (provided by Eurostat) since both sets of data (LFS and UOE) come from Eurostat.**

Yes, we will ensure that we refer to LFS and UOE

- 6. For variable "Participation rate", it is said that "Some anomalies in the Eurostat data make incorporation into the model difficult (e.g. percentages >100)", to our knowledge (maybe could be checked with Eurostat), this is due to the fact that data comes from two different sets of data: enrolment data comes from UOE and population data come from demographic sources (Census, population registers, etc.).**

We will use participation rates from UOE where possible.

- 7. For variable "Pupil teacher ratio": to our knowledge, UOE data (Eurostat) also provide such ratio.**

UOE does indeed provide pupil teacher ratios, however for some countries they refer only to public institutions. As we are using overall population projections to model the demand, it would be more consistent to construct the pupil teacher ratio so that all pupils and all teachers are included, rather than all pupils and only teachers in public institutions.

8. For variable "Number of teachers": to our knowledge, UOE data (Eurostat) also provide the number of teachers in 5 year age bands from 24 years, breakdown by sex and level of teaching may be available for such 5 year age bands but this should be checked with Eurostat.

UOE do indeed provide Teacher numbers in 5 year bands. However, to model the age structure, and ensuing replacement needs, single year age bands are strongly preferred.

9. Table: "Comparison of overall number of teachers on a selection of countries". As mentioned in your 4 points it is not clear what column 'All level' covers. Furthermore, do the UOE and LFS data cover both full time and part time teachers? We are not sure that part time is defined in the same way in LFS and UOE (Teachers with a workload lower than 90 percent of the full-time workload are considered part-time). From *Key data 2005* we know that part time teachers represent a relatively high proportion in DE, NL and UK but in NL part time is not self reported in the LFS ("Full-time/part-time distinction in the main job is declared by the respondent except in the Netherlands, Iceland and Norway where part-time is determined if the usual hours are fewer than 35 hours and full-time if the usual hours are 35 hours or more, and in Sweden where this criterion is applied to the self-employed" from Eurostat website on LFS). We suppose that level 1, 2 and 3 are ISCED level? When 2003 data on teachers have been extracted (we did not find the same data on NewCronos for the total number of teachers (full-time and part-time))?

The number of teachers from UOE sources was extracted from table pers2_d on the Eurostat website.

Full and part-time teachers are included in both sets.

While there are differences between the LFS and UOE number of teachers, we felt that the second table demonstrated their broad comparability.

The full-time / part-time distinction has not yet been explored in the data presented, but we have just received a second LFS extract which includes this data and will allow the translation of number of teachers into teacher hours, or full-time equivalent. If comparisons are made, we will take care to account the different definitions of full-time and part-time working.

4. Case study Netherlands: The forecasting model developed by the Dutch Ministry of Education

1) Introduction

Information has been obtained via the Dutch Ministry of Education, Culture and Science and the Sectorbestuur Onderwijsarbeidsmarkt (SBO). The following reports have been used for this case study:

- 'The Future Labour Market for Education Staff Until 2015' (Ministry of Education, Culture and Science, Rotterdam June 2006)
- 'Working in Education 2006', fact sheet, Ministry of Education, Culture and Science
- 'A Well-functioning Education Labour Market', Policy Strategy Education staff, Ministry of Education, Culture and Science

2) Description of the case study

This case study aims at presenting the Dutch model on calculating future potential shortages or surplus of teachers. The Dutch Ministry of Education, Culture and Science had commissioned to undertake a labour market forecasting exercise for primary, secondary and vocational and adult education until the year 2015.

This case study allows the comparison of the model used in the report on the 'Study on Mobility of Teachers and Trainers' to calculate future replacement needs for teachers, with the Dutch forecasting model. Additionally, it provides the Dutch labour market trends and the forecasted future shortages and surplus by level of education as well as the effects of a buoyant or depressed general labour market on take up of teaching posts.

3) Objectives and background context to the Dutch forecasting model

The Ministry of Education, Culture and Science deems it important to forecast future needs in education in order to ensure a high level of quality in education as well as to be able to respond to future problems the education sector might face. It is therefore important to investigate how the demand for education staff will develop the coming years and if the supply of (new) teachers will be adequate to respond to this need. In these levels of education, subject courses and regions where a gap might be expected, responsible authorities can, on the basis of the forecasted needs, take targeted policy action and avoid substantial problems.

The developments on the labour market are caused by a variety of factors. Some of the trends have been visible for a few years already and might become more apparent in the near future. The most important trends are:

- *A decrease in the number of pupils in primary education (after 2009).* Consequently, the demand for teachers at this level of education will decrease.
- *Ageing of the teaching labour force.* As a consequence of a substantial group of teaching staff going into (early) retirement, an increase in the demand for teachers will result. This trend will become more visible in secondary and vocational and adult education from 2007 onwards.

- *Intra-professional mobility.* The ageing of the teaching staff will be accompanied by an increase in vacancies for management post in education. As a consequence opportunities will arise for teachers to go into these management posts provided they are motivated to do so and their access is facilitated.
- *An increase in part-time work.* The actual number of people needed to fill all the vacancies in education is higher than the number of posts since in education the occurrence of part-time work is increasing. A higher percentage of teachers work part-time in primary education than in secondary education.
- *Increasing popularity of teacher training.* In the period 1998-2004, entry into teacher training increased by 25% and is currently more than 16,000 people a year. Moreover, it seems that 90-95% of teaching graduates for primary education opts for a job in education as opposed to 65% for secondary education.
- *Labour market condition susceptibility.* The education labour market has proved to be susceptible to labour market condition developments. The forecasts are made according to two possible conditions in the labour market: a depressed or a buoyant labour market.

4) Description of the Dutch forecasting model³

The forecasting model: background variables to be taken into account

The main principle of the model is based on 'predicting' the (future) labour market behaviour of teachers⁴. These predictions are based on past behaviour at aggregated level. For example, if in the past 10 years each year 10% of teachers left the education sector for another sector, then the same can be assumed for the coming years. As behaviour is influenced by labour market conditions, these wider labour market conditions are taken into account in the model.

Teachers who choose to work in another sector than education are in theory still available for a job in education. All those who are eligible for a teaching post but not working in the teaching profession are called the 'silent reserve'. Especially in times of teacher shortages, this group is called upon.

On the other hand there is a group of people working in other professions who change to the teaching profession. Traditionally this group consists of graduates from the teacher training for primary education and secondary education and the university level teacher training courses. In recent years, opportunities have been created in which it is possible to become a teacher via another route than the formal teacher training. People with a hbo/wo-course⁵ qualification can on the basis of the Interim Law on lateral intake⁶ become a teacher via a shortened trajectory of working and learning in two years. In this group are also counted people who enter the education sector from other sectors. The lateral intake

³ The forecasting model is called MIRROR which stands for Microsimulation Calculation model Regional Education Forecasts.

⁴ The same model is used for other staff categories, i.e. managers, teaching assistant and assistant management.

⁵ Hbo qualification is given to those who successfully followed higher professional education and wo qualification is given to those who successfully followed higher academical education.

⁶ This Law came into force in August 2000 and allows people, under specific conditions, to enter the teaching profession via other non-traditional trajectories to compensate teacher shortages.

increases the diversification of education staff which was one of the objectives of the Dutch government by having a more open and flexible education labour market.

Additionally, teachers can decide at any point of their career to work more or fewer hours, receive additional responsibilities or change schools. This also influences the availability of labour supply and therefore the demand for new teachers.

On the basis of the actual labour market behaviour in the past, odds are calculated for future labour market behaviour of personnel. At the same time relevant background characteristics are taken into account. For example, the labour market behaviour of men is different than that of women and labour market behaviour in a small school is different than that in a big school. Labour market behaviour is also influenced by the labour market conditions: in depressed labour market conditions, as was the case in the previous period, teaching graduates and teachers have a lower tendency to take up a job outside education. Conversely, buoyant labour markets may lead to teaching graduates and teachers more easily taking up jobs in sectors other than education. For these factors, variables are brought into the model based on: the economic growth, the unemployment rate and the trend indicator. On the basis of these variables, exit, entry and transfer within the teaching profession is calculated taking into account previous trends.

The future education labour market situation is determined by the demand and the supply of (new) teachers. The ratio between both determines in how far there is unfulfilled demand (vacancies).

The demand for new teachers

The need for 'new' teachers is mainly determined by the following factors:

- The number of pupils;
- The exit of teachers from the teaching profession; and
- Intra-professional mobility of teachers who become managers and visa versa.

A few additional factors have also an influence, these are:

- Class size. In the past changes in class size have had a substantial impact on the need for new teacher in primary education;
- Work organisation within schools. The introduction of job differentiation allows schools to fulfil the need for new teachers partly by employing teaching assistant;
- Changes in tasks in which teachers are working less without therefore accepting a different task somewhere else in education.

The supply of new teachers

The supply of new teachers consists of:

- Teacher training;
- The 'silent reserve';
- The lateral intake. These people are being assessed before they can enter the teaching profession;
- Intra-professional mobility; and
- Changes in teacher roles/tasks. For example an increase in the task volume means that more intensive use is made of the existing teachers and therefore the need for new teachers decreases.

The model allows for the inclusion of flexibility such as having a depressed or buoyant labour market condition since this will influence the entry of students into teacher training.

5) Replacement needs for teachers for primary and secondary education and adult and vocational education

Primary education

a) Scenario of a depressed labour market condition

In the scenario of a depressed labour market condition, no teacher shortage for primary education is expected for the coming years. However, there will be no surplus either. It is expected that those graduating from teacher training will find a job if the trend since 2004 of a decreasing entry into teacher training remains.

b) Scenario of a buoyant labour market condition

In the case of a buoyant labour market condition, it is expected that in 2010 there will be a small shortage of teachers in primary education: about 1,100 FTE (1.2% of the total demand). After 2010, this shortage will gradually increase. It is expected that by 2015 there will be a shortage of 1,400 FTE (or 1.5% of the total demand).

Secondary education

For both labour market conditions, buoyant or depressed, there is currently a balance between the demand for, and the supply of, teachers in secondary education. However, it is expected that there will be, in the coming years, for both labour market scenarios, a shortage of qualified teachers. For a depressed labour market condition the shortage would be around 1,100 FTE in 2010 (2% of the total demand) and for a buoyant labour market condition this would be 3,000 FTE (5% of the total demand). It is expected that these figures will rise in 2015: a shortage of 5,000 FTE qualified teachers for a depressed labour market condition and 6,000 FTE for a buoyant labour market condition.

Adult and vocational education

It is not possible to make forecasts in this sector whilst taking account of the labour market conditions. Moreover, because of the unlimited 'silent reserve' (as a consequence of the lack of formal demand for qualification) it is assumed that schools will react adequately when having shortages. It is expected therefore that even if some shortages might arise, these will be compensated. However, there might be a qualitative shortage.

6) Conclusions

The above case study provides interesting information on how future replacement needs can be calculated at the national level. The following observations can be made:

- An important aspect of the Dutch forecasting model is that in order to make the most accurate predictions account is taken of exogenous factors such as the growth in number of pupils, labour market conditions, entry into teacher training, etc. Labour market conditions have an impact on the behaviour of students entering teacher training, teaching graduates entering the teaching profession and qualified teachers re-entering or leaving the teaching profession. On the basis of this, future supply is calculated with a different percentage entering the teaching profession according to disadvantageous or advantageous labour market conditions.
- Account has to be taken of the 'silent reserve' and the fact that, especially in adult and vocational education, a proportion of the teachers is not formally qualified.

- For both primary and secondary education teacher shortages are expected to occur by 2010, albeit no shortage is expected for primary education in the case of a depressed labour market condition.

Annex B - Information Relating to Section 3

1. Differences between Teachers and Trainers across the EU 25
2. Age profiles of teachers by sex and level of education
3. Number of working hours for teaching professionals per country (LFS 2005)
4. Overview of gender and qualifications at each level

1. Differences between Teachers and Trainers across the EU 25

Member States	Main Differences
Austria	The difference is education. Unlike IVET trainers, teachers have usually completed a Lehramtsstudium (Teacher Training Course) at university or at a pädagogischen Akademie (Teacher Training College). IVET Trainers are also required to have a professional qualification.
Belgium	The difference is the workplace. Further differences in entry requirements, professional experience and qualifications flow from it. Generally, teachers are employed in IVET (so called 'regular' education as provided by the Ministry of Education) and trainers in CVET. Two exceptions: 1) The Flemish and Walloon institutes for entrepreneurship training (VIZO) and the Institut Wallon de formation en alternance des indépendants et petites et moyennes entreprises –(IFAPME) are both part of the IVET and CVET-system. 2) 'Social advancement education' is the only type of education in the 'regular education system' not belonging to the IVET-system.
Cyprus	There is no formal or legal definition of VET in Cyprus, thus there has not been a clear distinction between teachers and trainers in VET. Usually the term 'teacher' refers to educators at all levels of the formal educational system (primary, secondary and tertiary) whereas the term 'trainer' refers to persons providing training in the well-established training system in Cyprus. However, teachers and trainers are both represented in IVET and CIVET. The term 'trainer' is mostly used for persons working mainly in the non-formal part of the VET system, and more specifically in the public and private training institutions and in the enterprises.
Czech Republic	The differences are: Location (teachers in IVET and Trainers in CVET); Rate of legislative regulations they are subject to (teacher high rate and trainers low rate); Level of pre-requisites for the profession (high for teachers and low for trainers).
Denmark	The difference lies in the requirements to be in the profession. IVET teachers (comprising technical and commercial colleges) are employed on the basis of their professional skills and knowledge of a specific subject areas. A postgraduate educational training programme and 3 years experience are normal. The same goes for teachers in labour market training programmes (CEVT, AMU in Danish). Trainers, are normally skilled workers in the occupation for which they provide training, but with no specific training this role. Accordingly, there is no stage-organised training provision for trainer.
Estonia	The difference is the workplace (note that the term 'trainer' does not exist in Estonia). Vocational teachers teach both theory in the classroom and provide practical training in school workshops (in VET institutions). Vocational teacher is the generic term for

Member States	Main Differences
	<p>teachers for both IVET and CVET (no differences between these teachers).</p> <p>The term trainer is not used: there are workplace supervisors. A workplace supervisor is a specialist in his/her specific field in a company. They get to supervise student sent from VET institutions, supervise new employees or trainees in practical (apprenticeship) training.</p> <p>There are regulations around qualifications and experience to become a vocational teacher. There are none for workplace supervisors.</p>
Finland	<p>The difference lies in qualifications requirements:</p> <p>All teachers at VET institutions and polytechnics have pedagogical education worth 60 points in the European Credit Transfer System (this is the equivalent of full-time study for one academic year).</p> <p>Trainers/workplace instructors do not have any formal qualification requirements. The Finnish education system has not officially recognised the trainer function. Colleges and adult education centres have only teacher posts, and the teacher is responsible for all the training, including student supervision during periods of on-the-job learning in enterprises. As far as apprenticeship is concerned, apprentices work in enterprises under the guidance of a trainer, an older, experienced worker or foreman. Their theory instruction takes place in VET institutions or vocational adult education centres and is provided by qualified teachers.</p>
France	<p>The difference lies in qualifications, workplace and regulations regulating the professions.</p> <p>There are two types of teachers in France: in mainstream education; and in vocational and technical education.</p> <p>In any of the above cases, for the most part teachers are civil servants, and their status and rank is determined by national entrance examinations for admission to the profession. Teachers then teach the same discipline throughout their career.</p> <p>There is no national regulation governing the status of trainers or other training professionals. A large majority of trainers are private contractors, working full- or part-time. They are selected on the basis of their qualifications and/or skills and professional experience in a particular sector.</p>
Germany	<p>Differences between personnel active in VET at the level of: formal qualification, legislation governing activities, work contracts, salary. Basic distinctions:</p> <p>Trainers are subjects of the 'industrial world' governed by economic considerations and profit-making, vulnerable to economic developments and dismissal; salaries are determined by the employer. A master craftsman diploma or qualification in an appropriate recognised occupation is evidence of qualifications.</p> <p>Teachers are subjects of a non-profit 'educational world' with life-long job guarantee ('Beamten' / civil servant status), and with salaries subject to collective bargaining. Qualifications: VET teachers: Higher Education diploma. <i>Werklehrer</i> (practical skills teachers) master craftsman or skilled employee plus a one-year course at a <i>Fachschule</i> (CVET school).</p>
Greece	<p>The difference lies in the vocational dimension they are responsible for (education versus training).</p> <p>Vocational education and vocational training (either initial or continuing) are distinct but complementary sectors; both sectors and the schools/institutes that operate within each sector provide vocational knowledge and skills. In Greece, teachers and trainers are engaged in all sectors or types of VET.</p> <p>Educators in Vocational Education are classified as teachers, whereas those in Vocational Training are classified as trainers.</p> <p>However as both sectors provide general knowledge and practical skills, theoretical lessons and in practice training. In that sense, teachers are the practitioners providing general knowledge and/or basic concepts, whereas trainers are those providing practical knowledge and skills, operating workshops and on-the-job training.</p>
Hungary	<p>The main difference lies in their qualifications prescribed by law and in the objectives of their work (whether they provides theoretical knowledge or practical</p>

Member States	Main Differences
	<p>skills).</p> <p>Instructors of vocational training schools can be grouped as:</p> <p>Teachers: Teachers of general subjects; Teachers of vocational theoretical subjects</p> <p>Trainers (of the practical element of vocational training): Vocational trainer; or Practical trainer (if employed by an enterprise providing practical training in alternance or apprenticeship training).</p> <p>The main difference between vocational teachers and vocational trainers is that while vocational teachers teach vocational theoretical subjects, vocational trainers may instruct in the phase of VET preparing for the practice. Accordingly, they differ concerning the qualifications required from them and their pre-service training.</p> <p>Also, there are differences in the circumstances of their work: vocational teachers teach subjects to students that change every few hours; vocational trainers instructs continuously in places different from class education.</p>
Iceland	<p>The differences lie mainly in their qualifications.</p> <p>In the Icelandic Upper Secondary Levels School Systems (IVET):</p> <p>Generally, the Upper Secondary School Act does not require VET teachers to have professional experience but most schools in the upper secondary level system do not employ vocational theory subject teachers and practical subject teachers unless they are experienced in their field.</p> <p>VET teachers are required to complete study in education and instructional methodology but are not required to be master craftsmen or have working experience.</p> <p>Work-place trainers must be master craftsmen, have at least two years of experience but are not required to complete study in education and instructional methodology.</p>
Ireland	<p>Within IVET, there are only teachers; no trainers are employed in this area. There are both teachers and trainers only in CVET.</p>
Italy	<p>The difference lies in the role and professional statutes that differs according to whether they are in IVET or CVET. However they are also differences within IVET:</p> <p>In IVET, there are 2 main professional profiles for teachers and trainers:</p> <p>Teachers working in State vocational schools</p> <p>Trainers working in vocational training centres</p> <p>Teachers are classified as State employees having passed a State exam to obtain a teaching qualification, while trainers mainly work in private organisations holding a national collective agreement for vocational training.</p> <p>Differences in professional requirements: Specific subject degree for teachers/ Certificate (secondary education) or degree and professional experience for trainers.</p> <p>Trainers take up the most of the vocational component of education, while teachers mostly 'teach' in classroom/state school contexts.</p>
Latvia	<p>Trainers do not exist in Latvia, neither in a VET school or in a workplace.</p> <p>Vocational education teacher however exist – that is the collective term for those teaching in basic vocational lower and upper secondary vocational, and continuing vocational programmes.</p>
Luxembourg	<p>The difference lies in their location – whilst they are differences <i>between</i> types of teacher in IVET, what is regarded as trainers clearly work outside of the school context (whether vocational or general secondary school).</p> <p>Teachers working in vocational training colleges usually have civil servant or similar status. Differentiation is made between general subject teachers and practical subject teachers. General subject teachers undergo the same pre-service training regardless of their posting in a vocational training college or a general secondary school.</p> <p>Trainers in charge of the apprentices are skilled workers having a diploma as master craftsmen which includes training in applied pedagogy with a focus on tutoring apprentices and the planning CVT. However, mastercraftsmen diploma only exist for crafts professions.</p>
Malta	<p>The key difference between VET teachers and VET trainers in Malta lies in the extent of pedagogical training, and in the public status and recognition that they</p>

Member States	Main Differences
	<p>enjoy.</p> <p>VET teachers belong to a publicly recognised profession, represented by a trade union functioning as a professional association. They have a code of conduct, and entry into the profession is regulated, with the requirements specified in advance. The knowledge and competence base of VET teachers has been codified in teacher training programmes, and is also evident in the criteria that are used to evaluate teacher performance.</p> <p>Trainers, on the other hand, do not belong to a 'profession' as such. There are no clearly defined entry routes, no career progression paths, and no established set of standards or codes of conduct. Their interests are not upheld by a specialised union, and an association as well as a network targeting trainers has only recently been set up.</p>
<p>Netherlands</p>	<p>The term trainer is not clearly defined as it is used in very different contexts and thus is based on different concepts. Generally, the difference lies in trainers having higher specialised knowledge and skills than normal teachers, however trainers sometimes can enjoy the status of teachers, while also be represented in companies.</p> <p>Generally speaking:</p> <p>A teacher teaches a specific subject within a registered programme at an educational institution. At the level of institutions, however, different methods have been developed. Then teachers receive different names related to these methods like tutor, or coach etc. They develop themselves at the workplace or attend courses given by a trainer. Teachers are supported by other colleagues who fulfil parts of traditional teaching tasks under the responsibility of a teacher.</p> <p>A trainer can be seen as a specialist in a specific area. He/she can be a teacher with more than the average skills/knowledge in this particular field based on experience. He/she also can be an employee in a company with the specific task to give instructions to employees in the company. This function is based on the old model of <i>bedrijfsschool</i> (this is a school managed by a company, which trains their own employees within their company). Trainers sometimes consider themselves as functioning at a higher level than teachers.</p>
<p>Norway</p>	<p>The difference lies in the nature of their work and the types of pupils they are therewith responsible for.</p> <p>'Teacher' covers both educational staff teaching in classrooms and staff instructing in school workshops.</p> <p>In upper secondary IVET, the term 'trainers' primarily denotes staff involved in training of apprentices and trainees as defined by the Education Act, meaning: apprentices, trainees, and practice candidates.</p> <p>Persons training apprentices and trainees are called 'instructors' in Norwegian, which can be most appropriately translated as 'trainers' in English.</p>
<p>Portugal</p>	<p>The difference lies in their location of work and ensuing differences in professional requirements.</p> <p>Teachers work within the education system, while trainers work in the vocational training system. In this context, there are also different requirements and demands regarding recruitment and regulating work.</p> <p>Teachers should be graduates from higher education, with variations relating to their subject areas and the level they teach in.</p> <p>The only requirement to become a trainer is to hold a Certificado de Aptidão Pedagógica - CAP (Vocational Aptitude Certificate), which requires attending a pedagogical training course lasting 90 hours. There are no trainers' certificates for specialised sectors of training.</p>
<p>Slovakia</p>	<p>The difference lies in the nature of their teaching, their education.</p> <p>Teachers provide lessons that are predominantly theory based, and trainers provide lessons that are predominantly practice based.</p> <p>Furthermore, teachers are tertiary educated; trainers, as a rule, have only secondary education including a certificate of apprenticeship and at least of three years of</p>

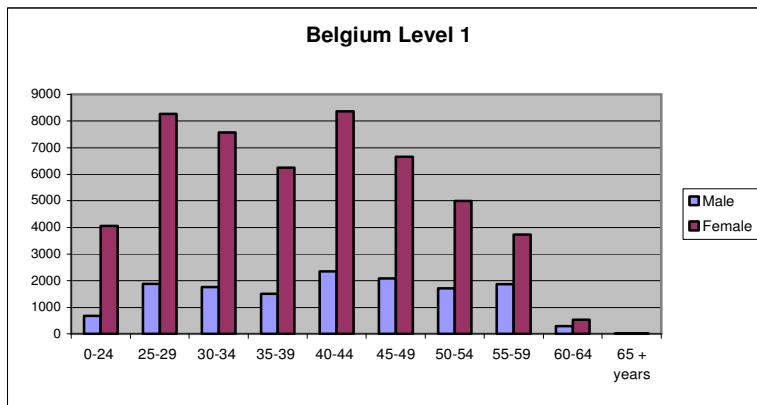
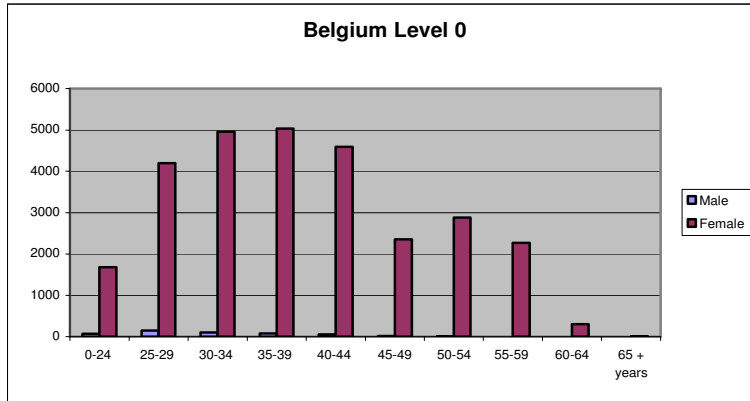
Member States	Main Differences
	<p>practice.</p> <p>In the case of VET schools for special education needs students, additional training in special education is required of all teachers and trainers</p>
Slovenia	<p>The main differences between VET teachers and VET trainers relate to the legal requirements in terms of their qualifications, work experience, workload and salary.</p> <p>Vocational-college lecturers and instructors, VET teachers of general subjects and teachers of vocational-theoretical subjects: all must possess a higher education degree of some kind depending on what they teach. Only teachers of vocational practical subjects, laboratory assistants and practical training managers at schools are not required to hold a higher education degree as a rule. They must however have three years work experiences, as do teachers of vocational-theoretical subjects as well.</p> <p>Trainers in apprenticeship must possess at least the qualification of a master craftsman (foreman or shop manager), which can be acquired after 3 years of work experience in the relevant trade or business by passing a special examination.</p> <p>The qualifications of various kinds of instructors in companies and mentors in training that is organised out of the regular school system are not regulated. Internal company regulations may exist. Instructors, trainers and mentors of various kinds working in companies are not included in education legislation. Information on the minimum requirements, experience and workload is unavailable.</p>
Spain	<p>Officially, there is no 'trainer' figure among teaching staff of vocational training systems. Neither are there different labels between one another. Certain functions or activities that are similar to the terminology of 'teacher' or the 'trainer' do exist in vocational training, according to the type of lessons given, theoretical or practical. But differentiated training does not exist, neither different systems of selection, or different continuous training programs. We only find 'trainers, monitors or tutors' in the area of continuous training in companies, but there is no type of regulation in this respect.</p>
Sweden	<p>The difference lies in their education to enter the profession, and by whom they are employed.</p> <p>For IVET-teachers within upper secondary schools and municipal adult education, a teacher's education is defined by the Education Act, whereas there are no general educational demands on the trainers.</p> <p>Teachers are employed by an educational institution (municipal, regional or independent school), whereas trainers are employed by enterprises or regional (e.g. health care) or municipal (e.g. childcare) institutions.</p> <p>In some cases, the municipalities pay a small amount to the trainers for their work, but this is in no way a standard procedure. Trainers are therefore formally external but nevertheless a part of the educational system.</p>
United Kingdom	<p>The difference lies in the location of their work.</p> <p>The term teacher is usually reserved for those working in schools and colleges (though, confusingly, teachers within further education (FE) colleges are appointed as lecturers). The term trainer is usually reserved for those employed outside of state school and college provision, mainly in a work-based setting serviced by other training providers.</p> <p>Teachers in secondary schools (IVET) and colleges (IVET and CVET) undergo qualifications requirements depending on their sectors (do not have to be higher education for teachers in colleges, but a certificate and experience are required). Some form of teaching qualification is however required today in any case of teaching.</p> <p>For trainers in other training providers (both IVET and CVET): there is no formal requirement for trainers to hold a recognised teaching qualification. Where the provider is in receipt of State funding, however, there is an expectation that trainers will work towards obtaining a full teaching award (Certificate in Education or Post-Graduate Certificate in Education). Trainers, however, will hold qualifications appropriate to their own occupational area of work, together with work experience. Such trainers may also either hold or study for a range of nationally-recognised training and development awards. All trainers with responsibility for assessing National Vocational Qualification</p>

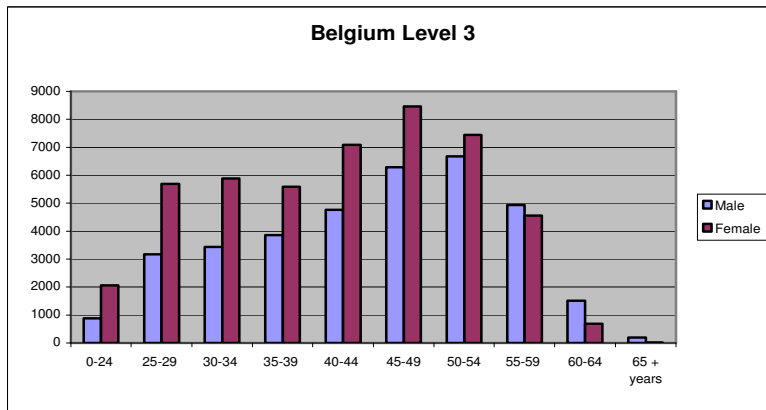
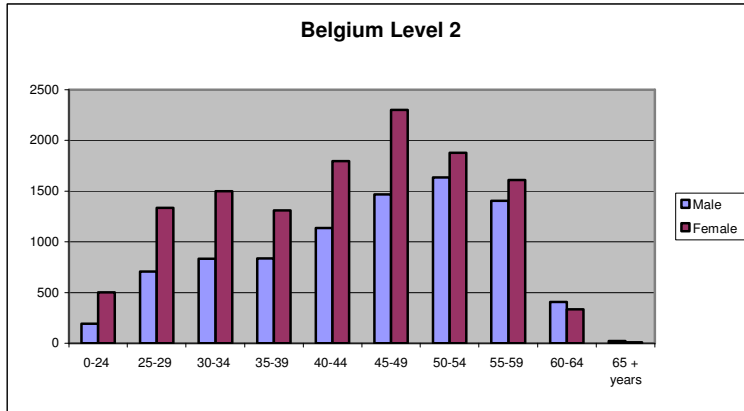
Member States	Main Differences
	(NVQs) competences of their trainees must obtain a recognised assessor award.

2. Age profiles of teachers by sex and level of education

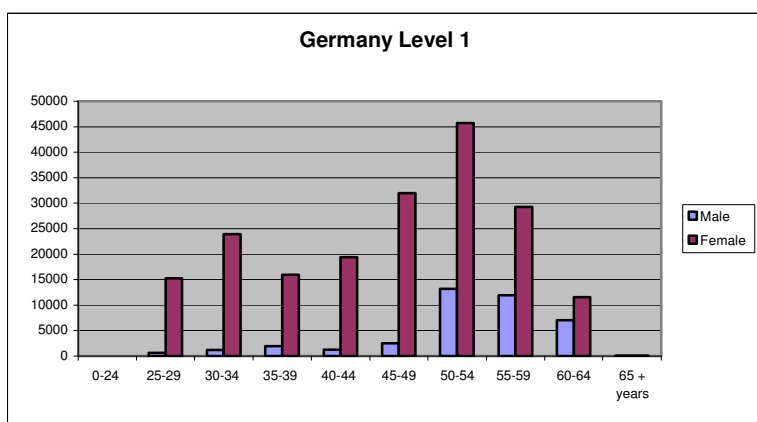
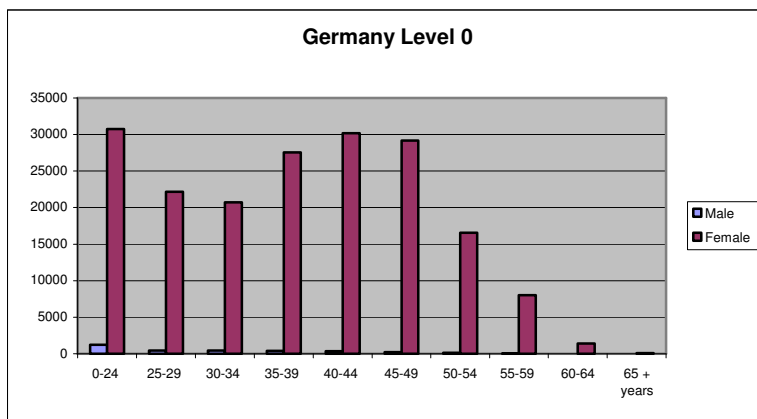
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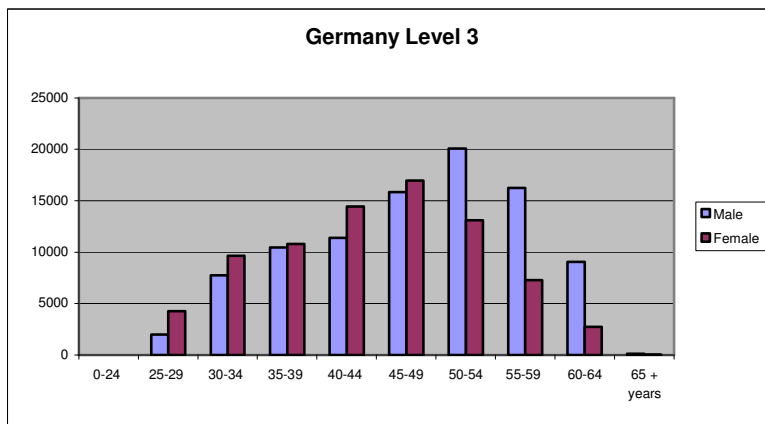
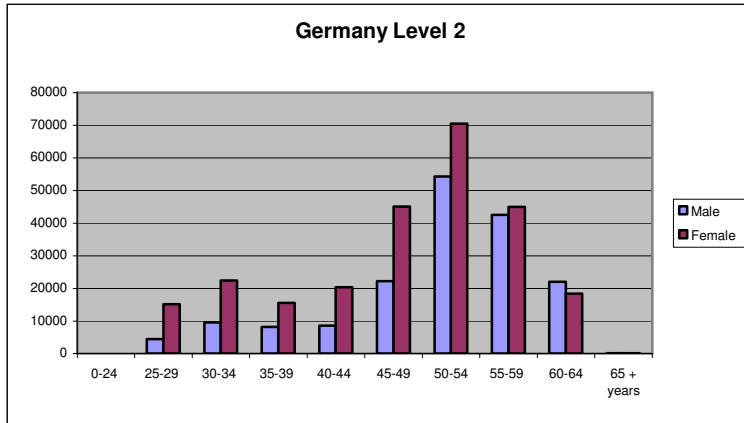
Belgium



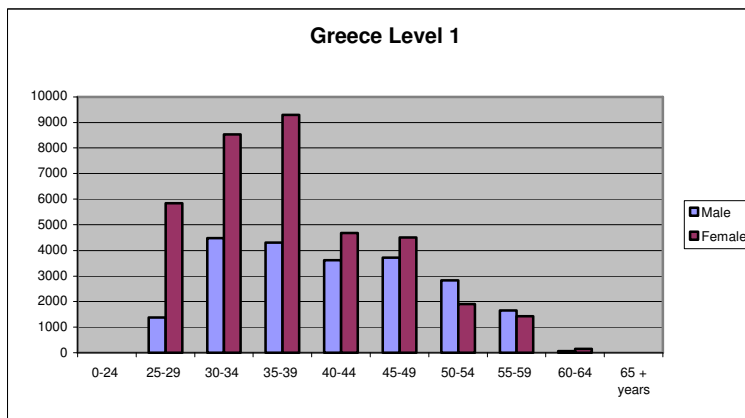
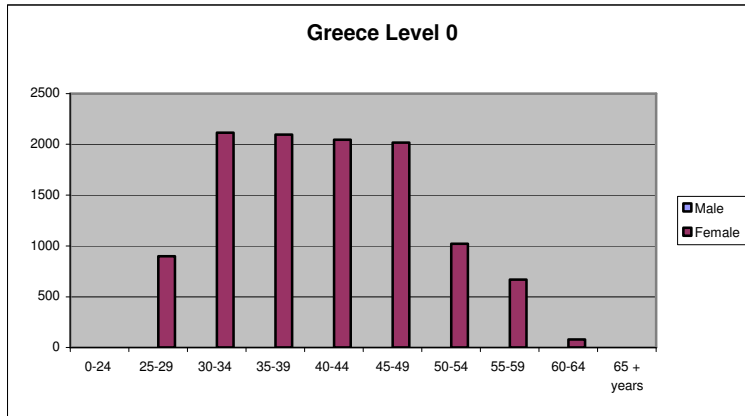


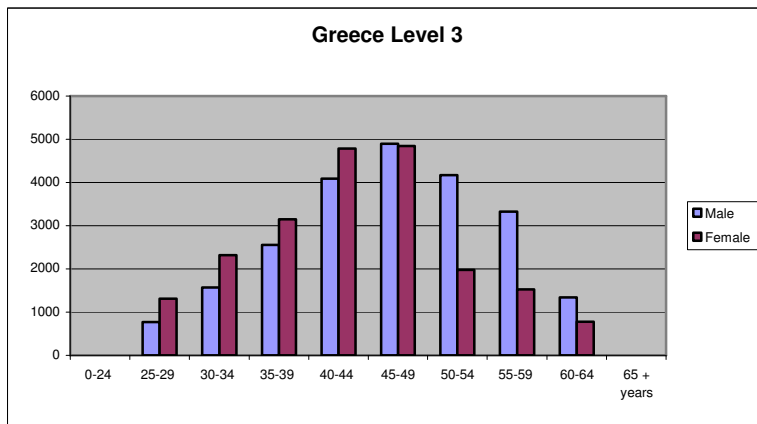
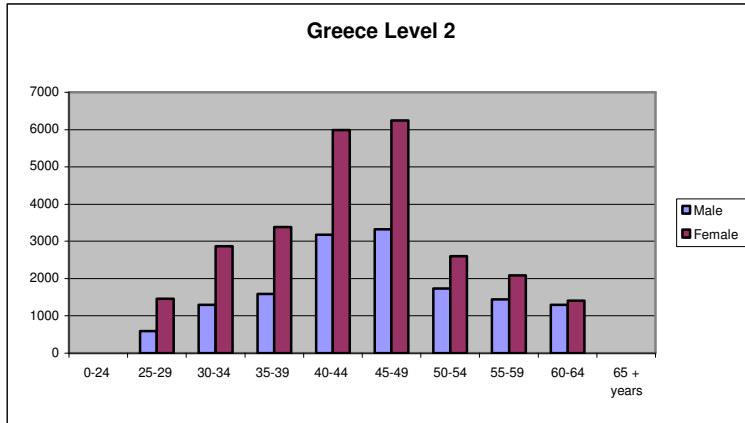
Germany



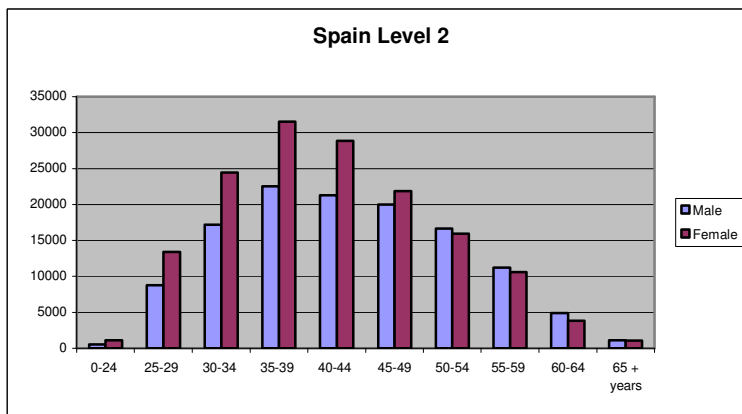
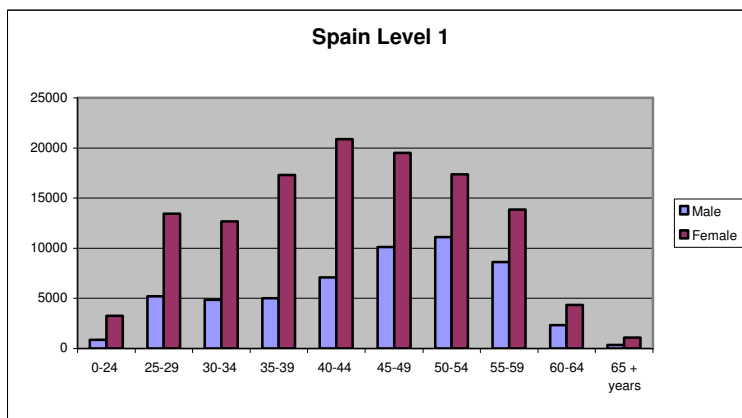
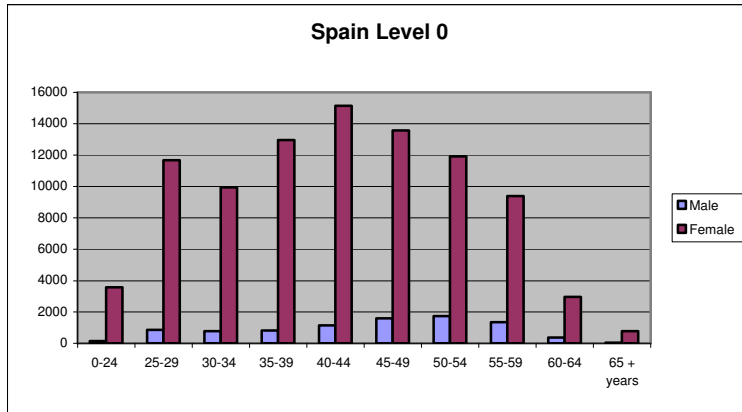


Greece

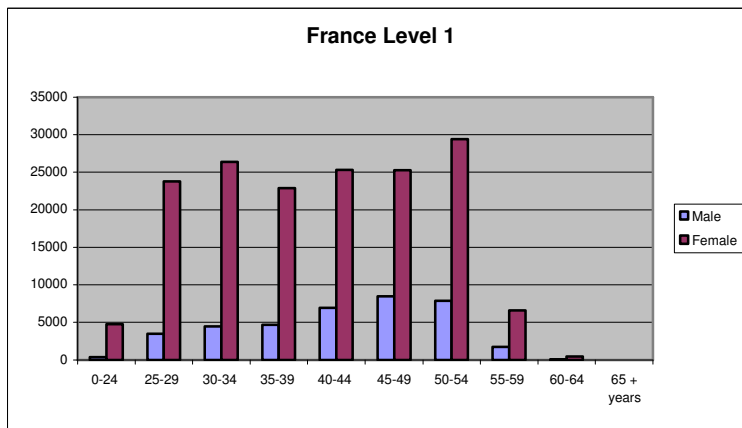
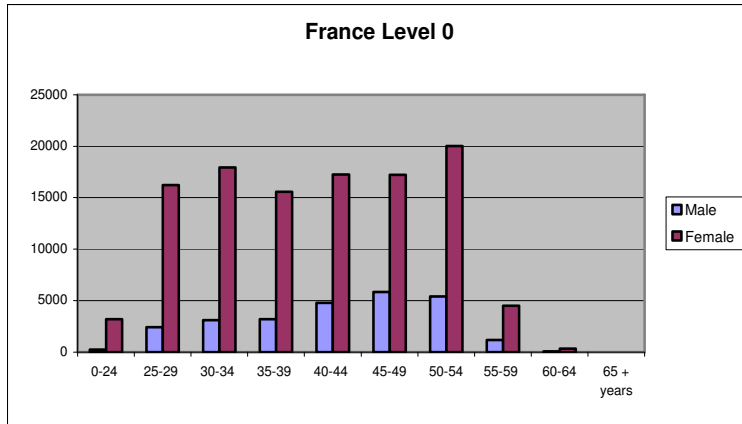


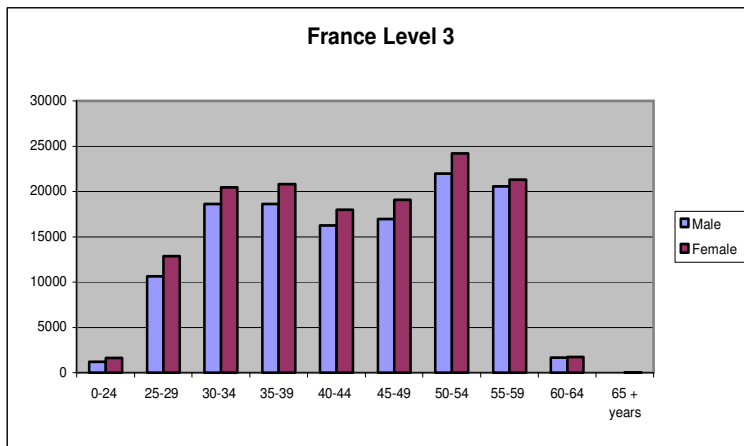
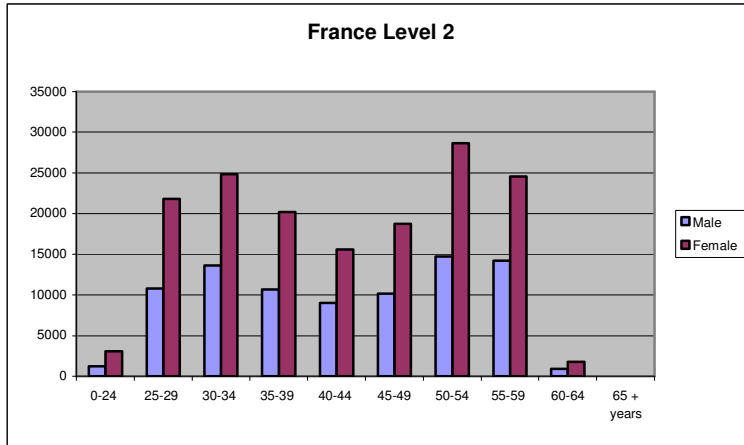


Spain

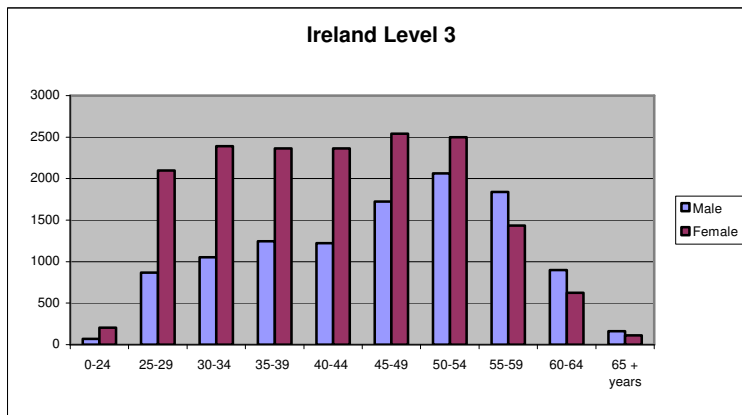
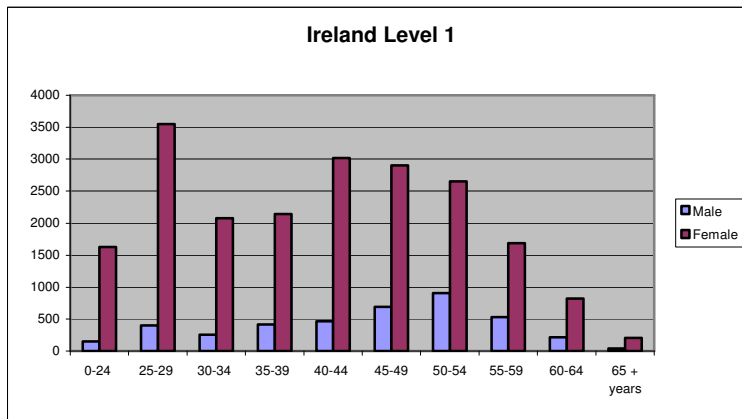
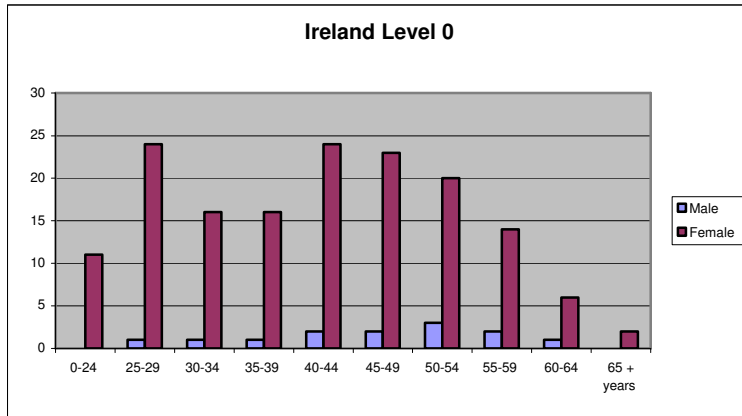


France

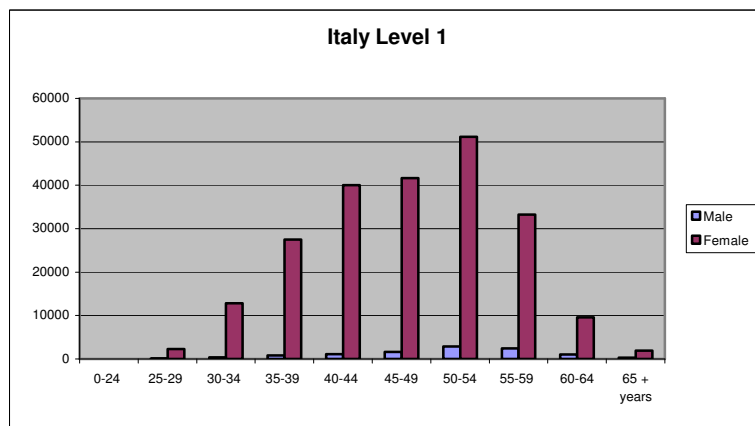
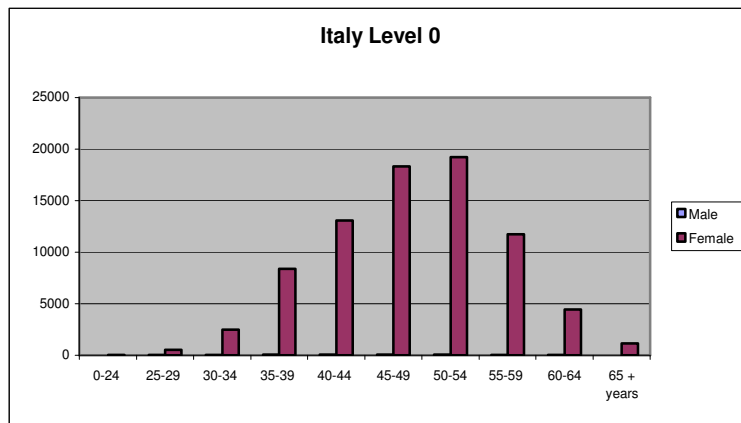


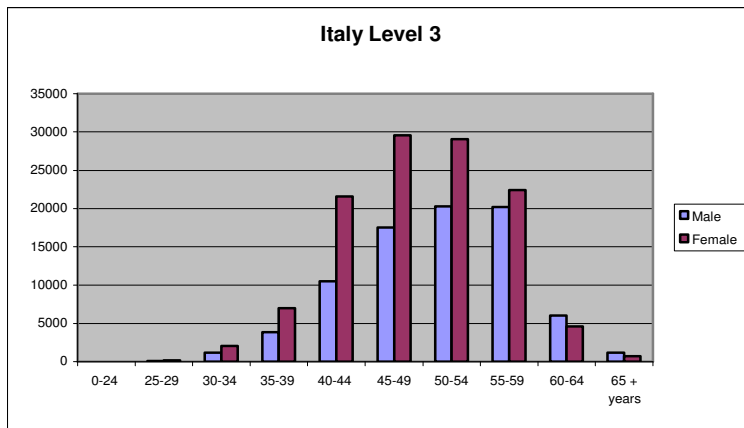
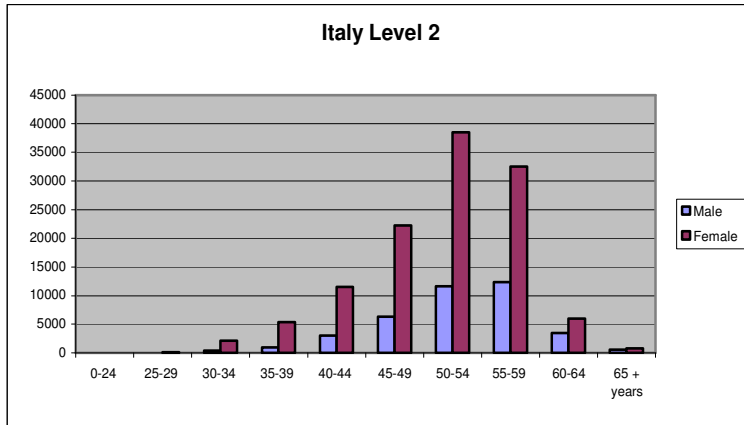


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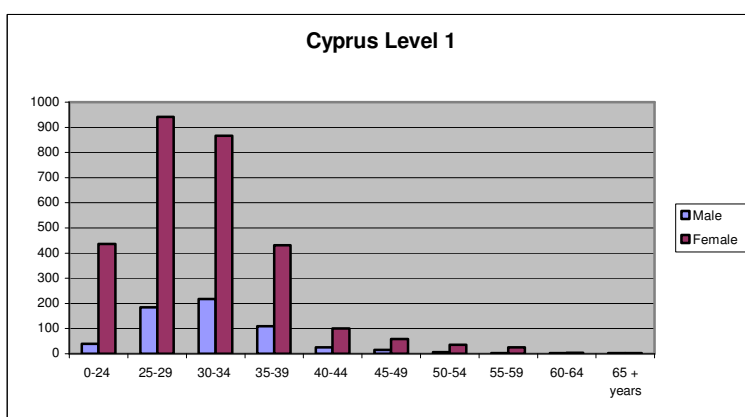
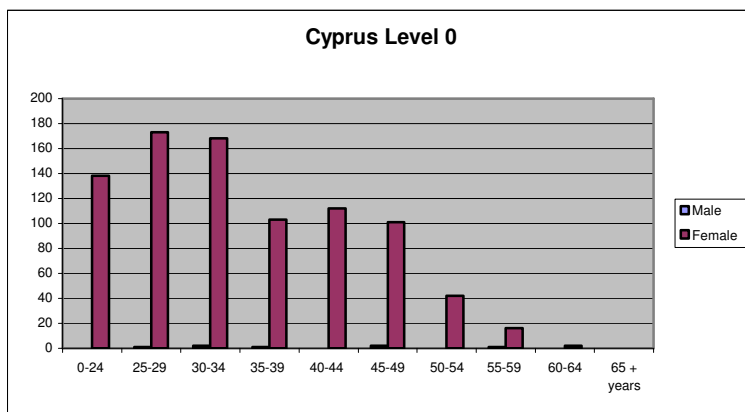


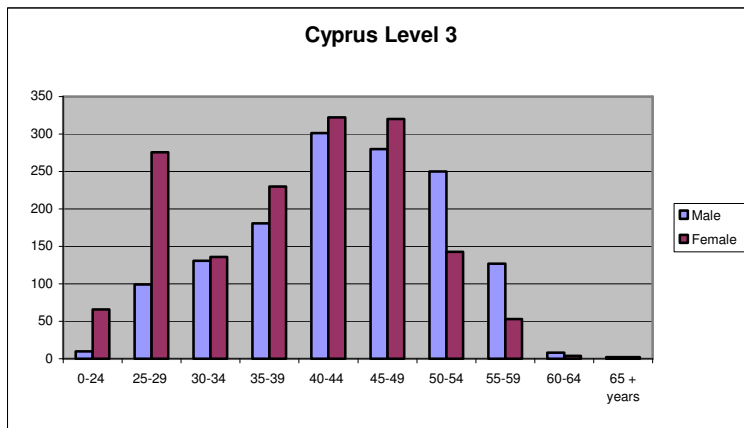
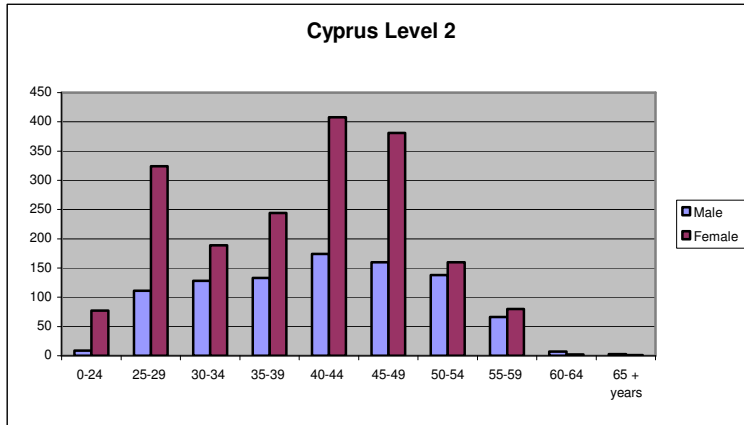
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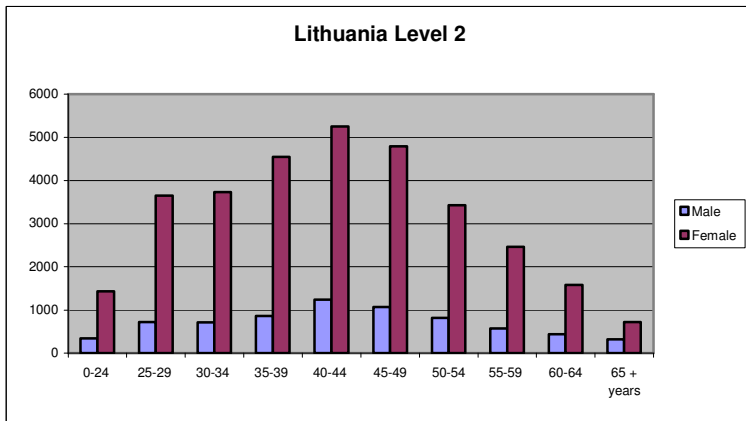
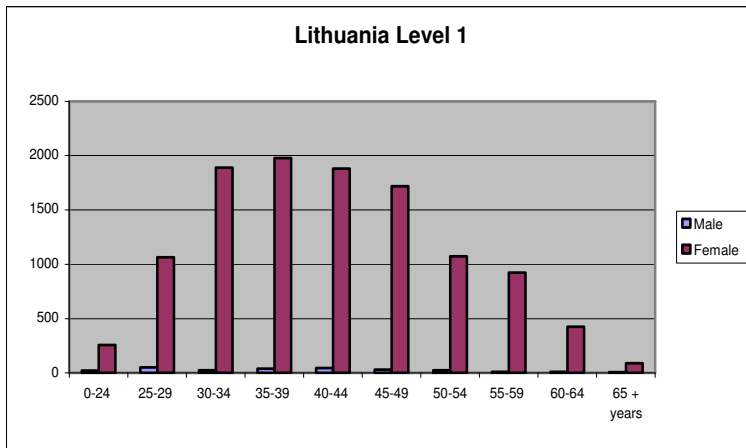
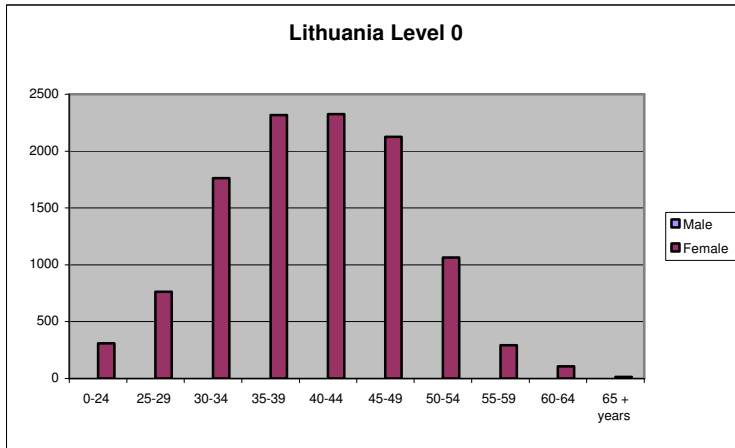


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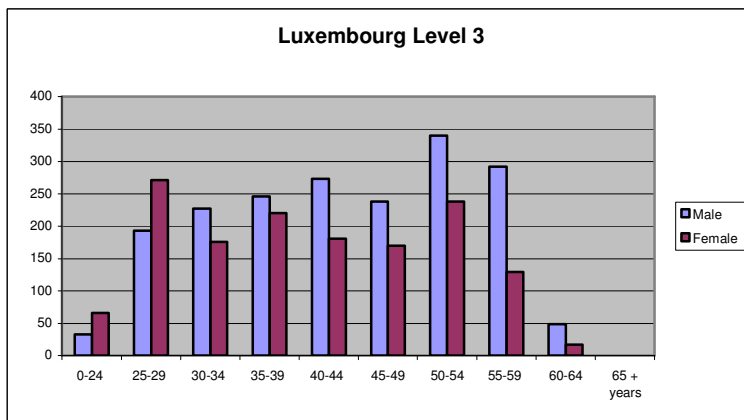
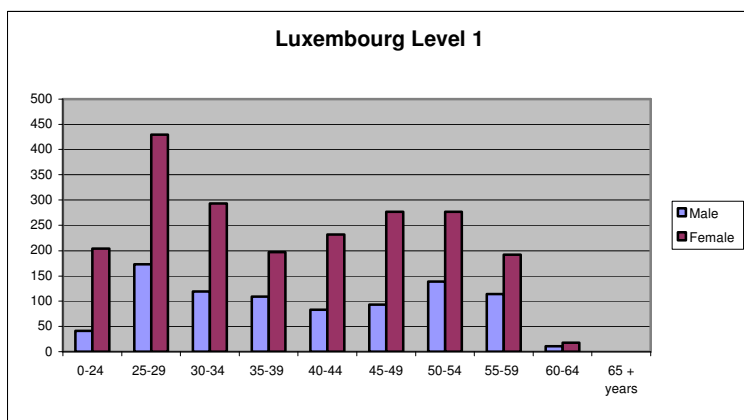
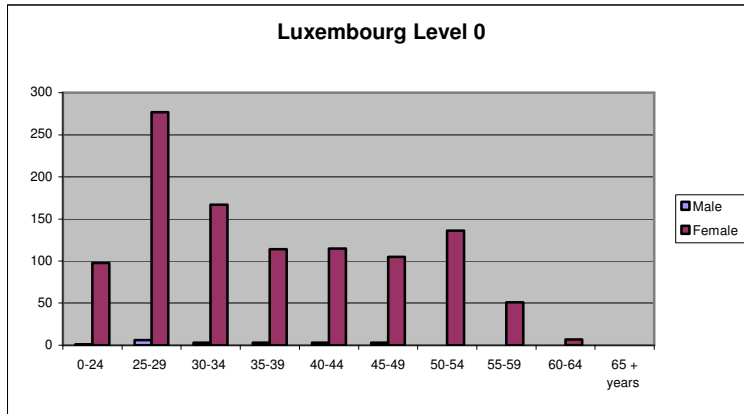




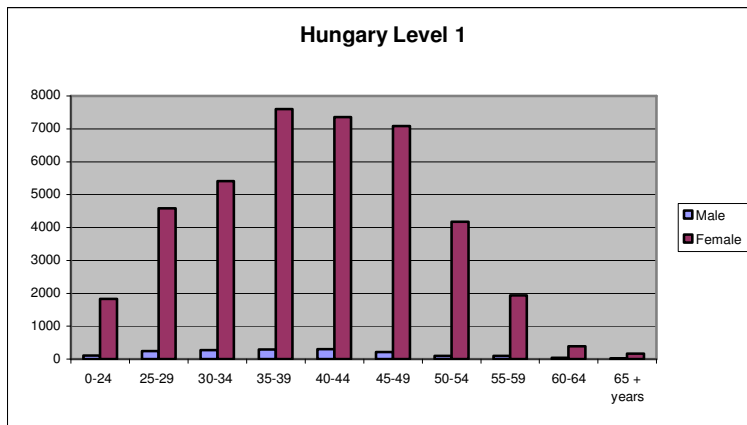
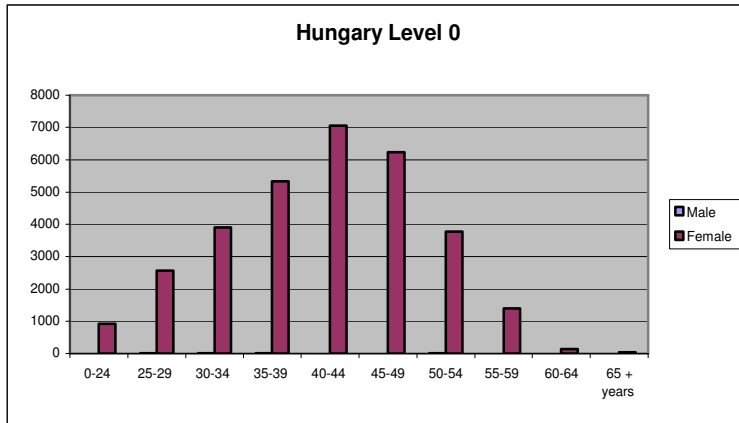
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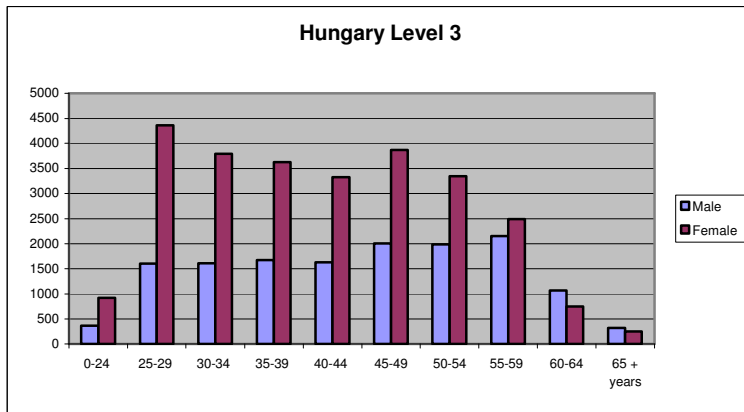
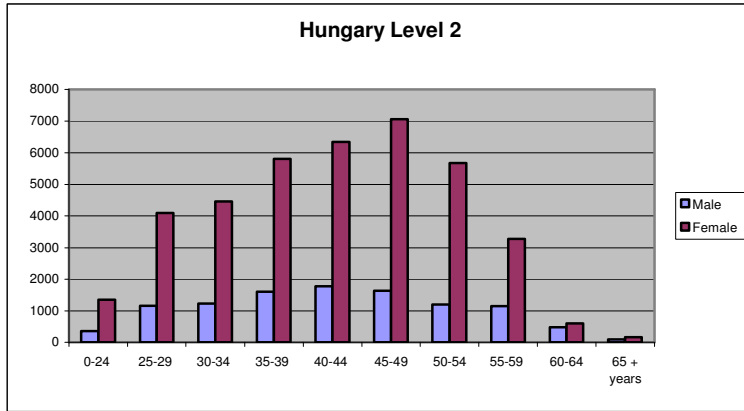


Luxembourg

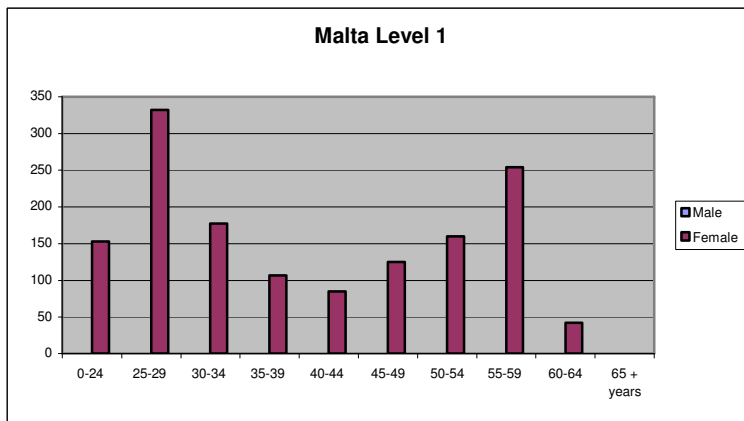
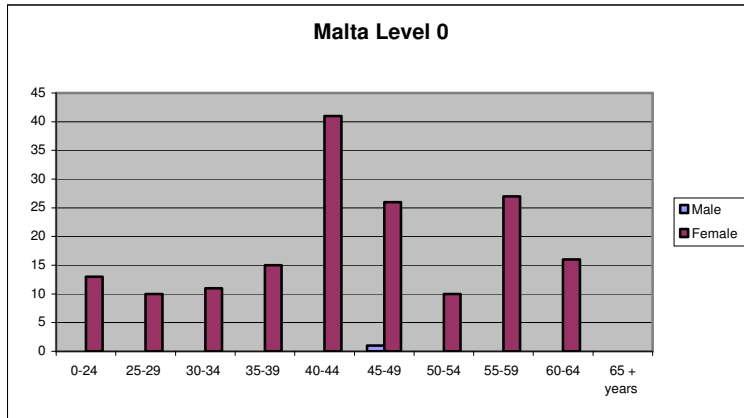


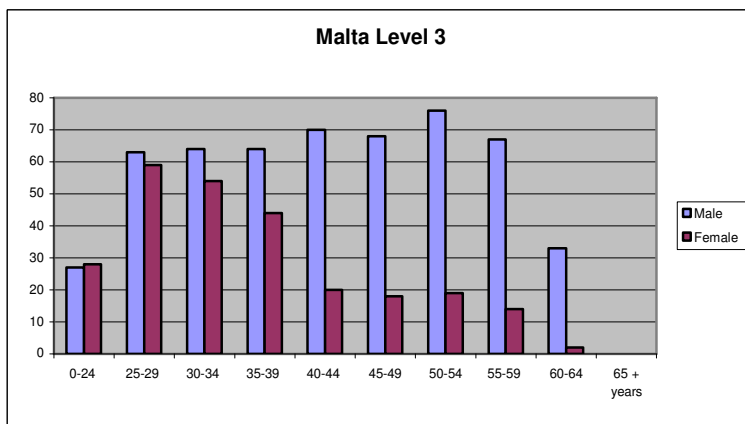
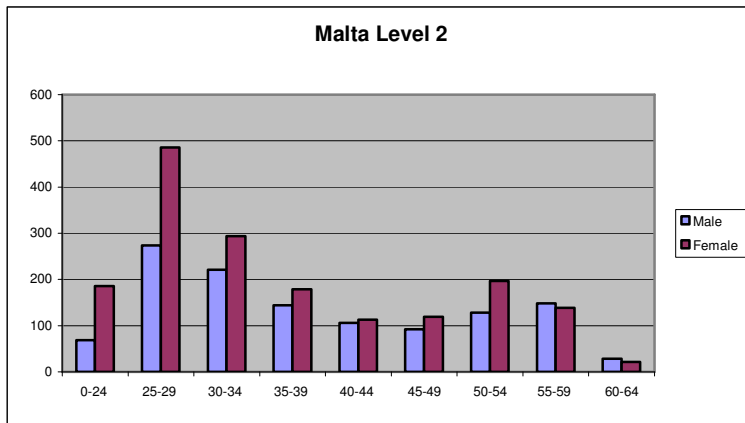
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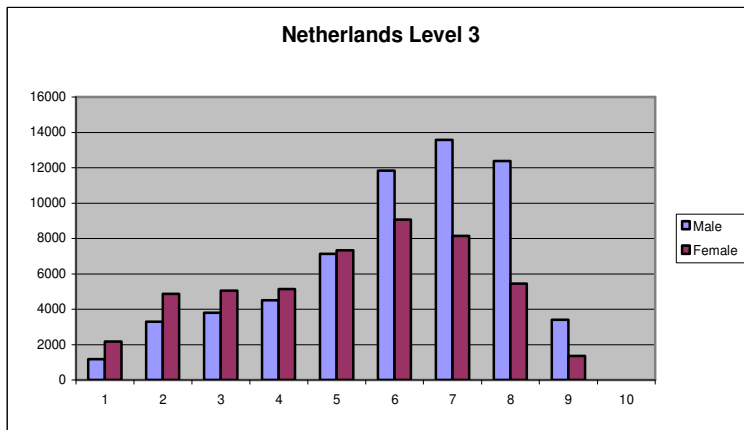
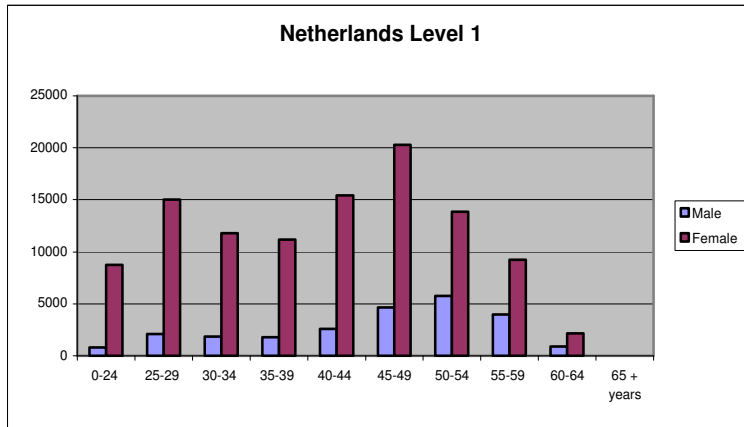


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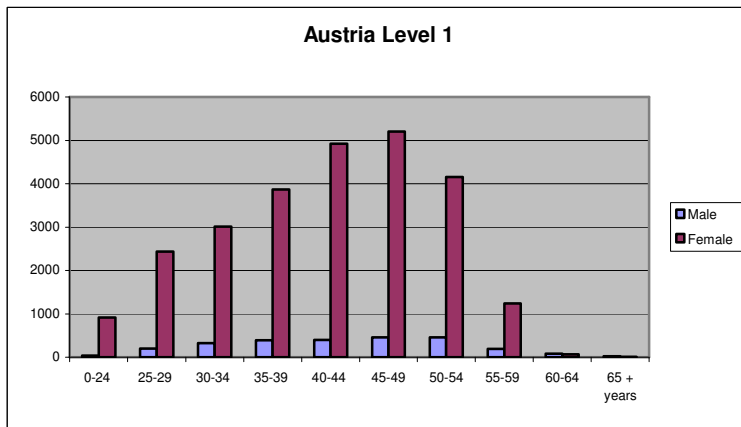
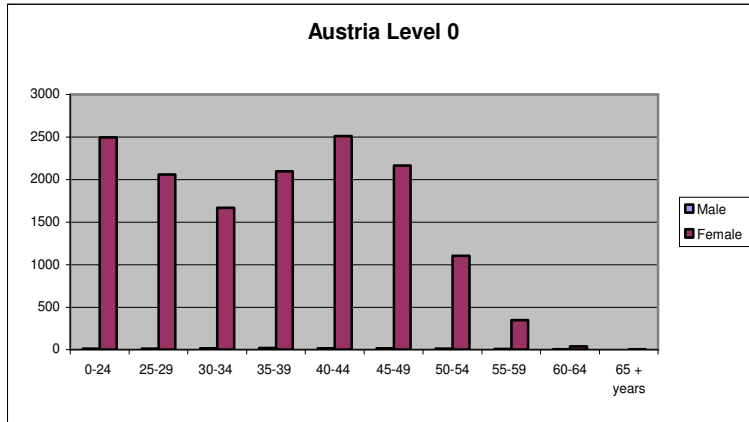


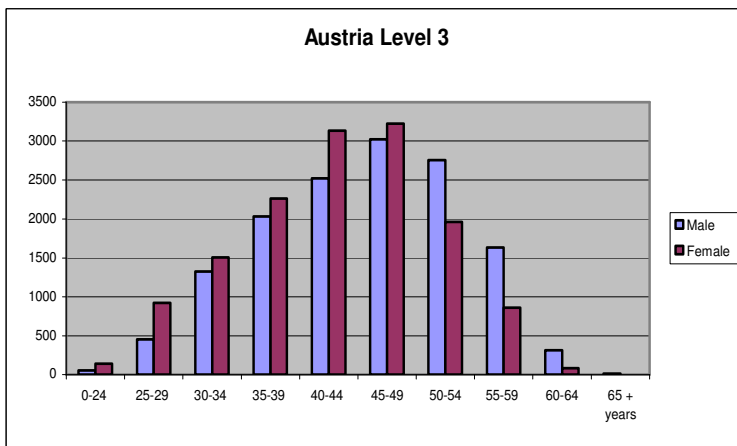
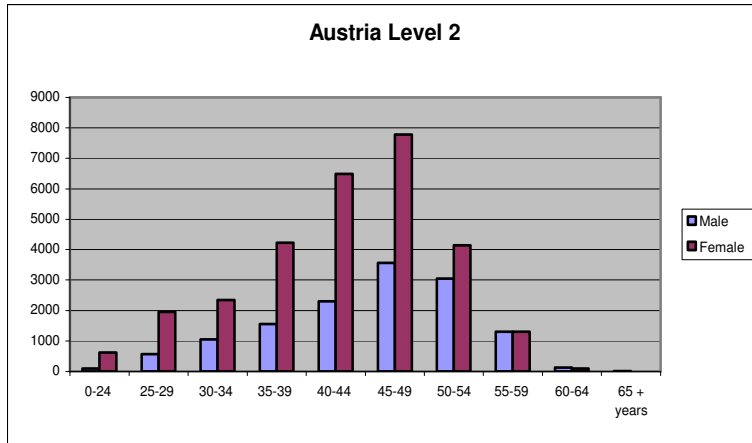


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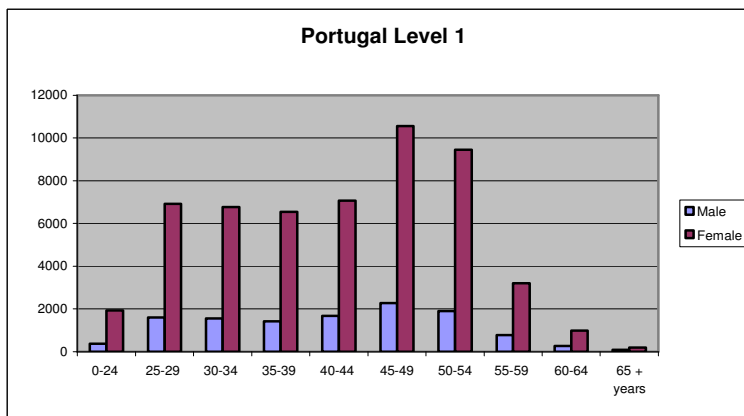
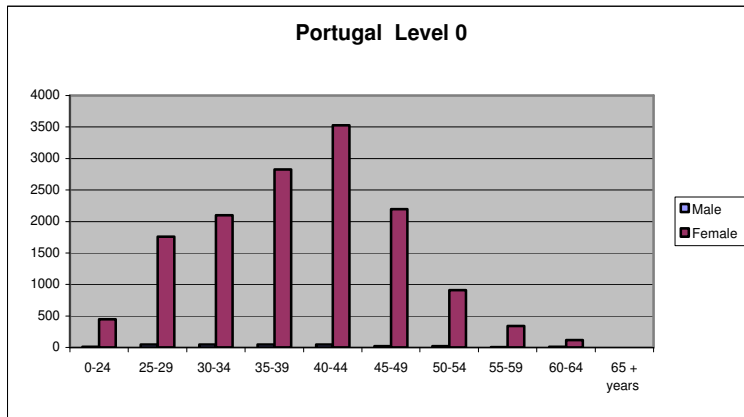


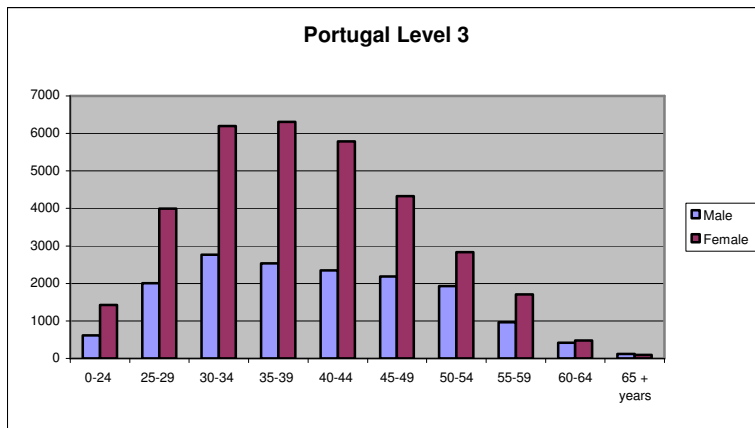
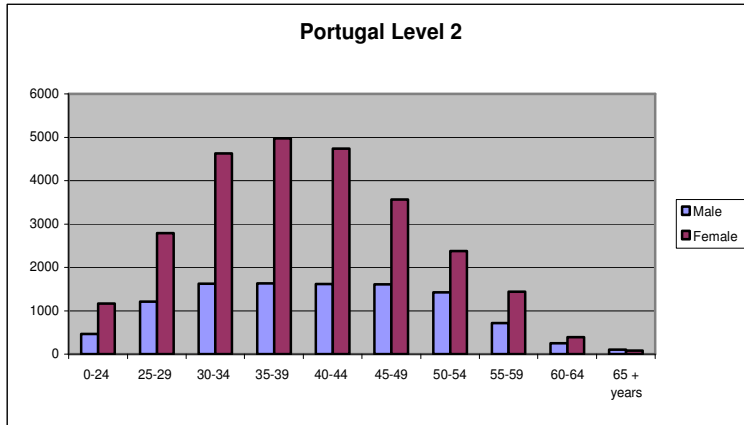
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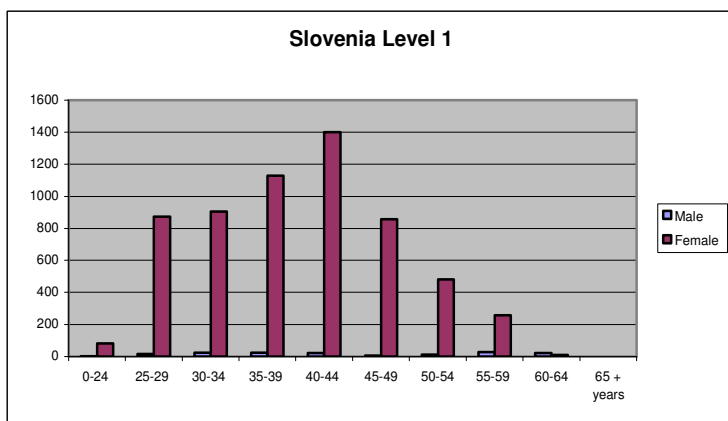
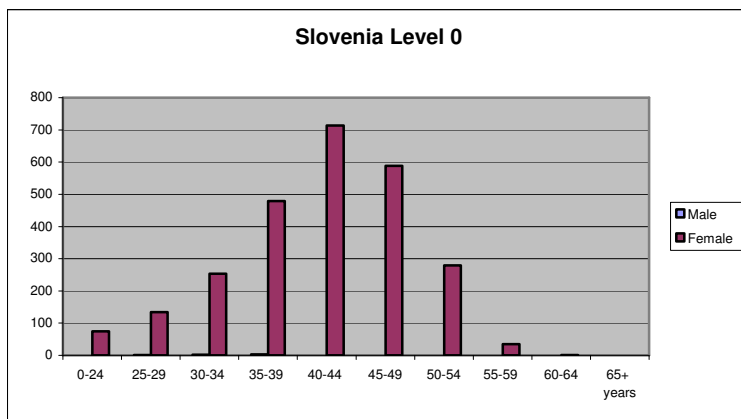


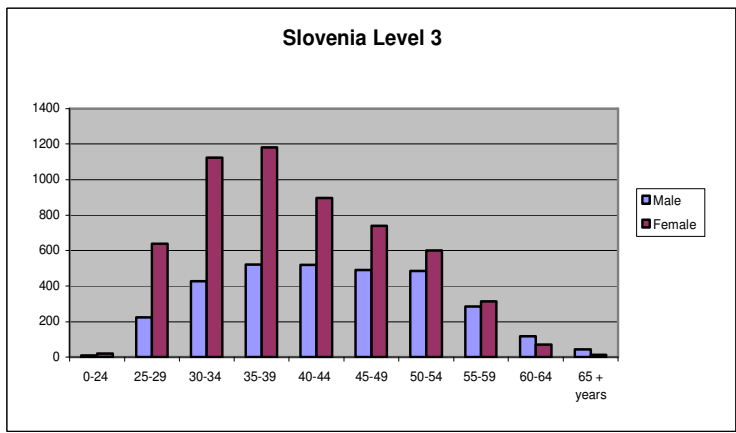
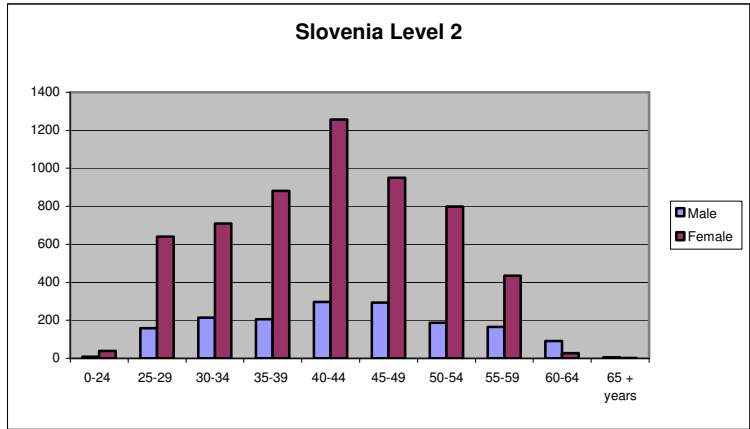
Portugal



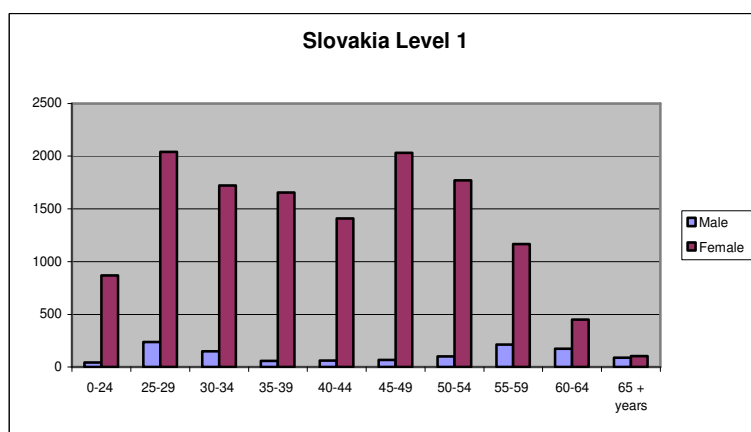
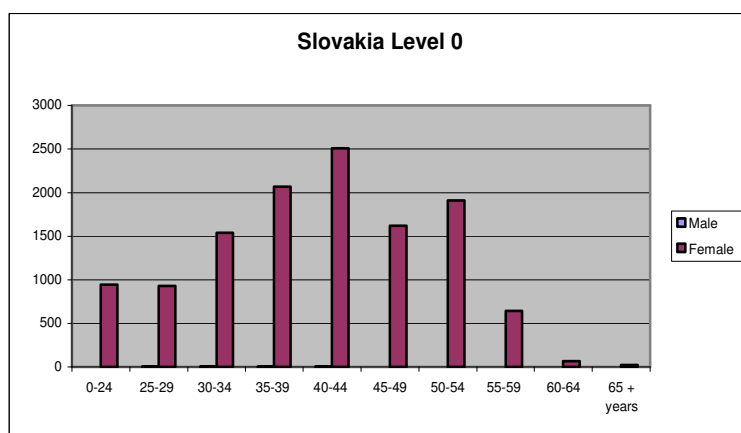


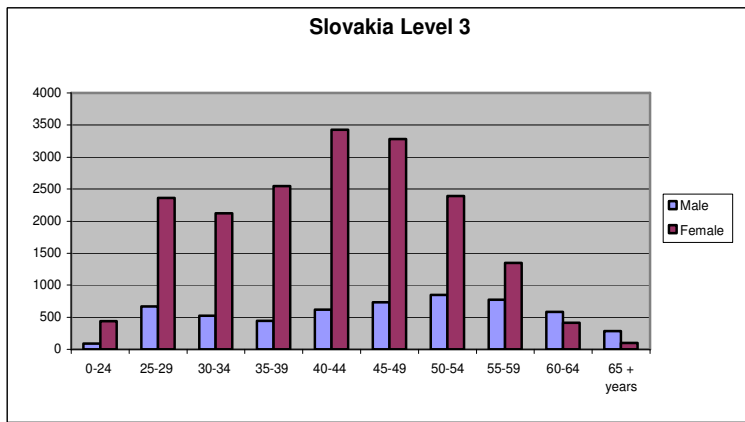
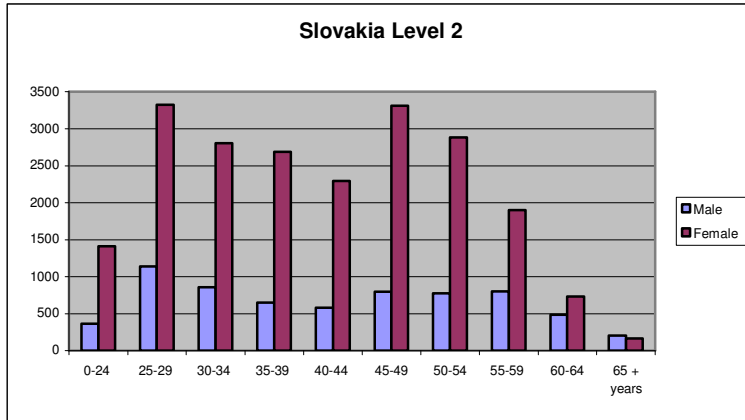
Slovenia



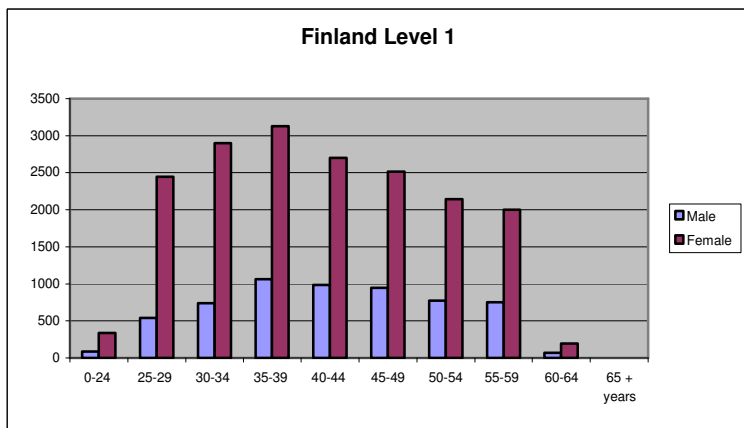
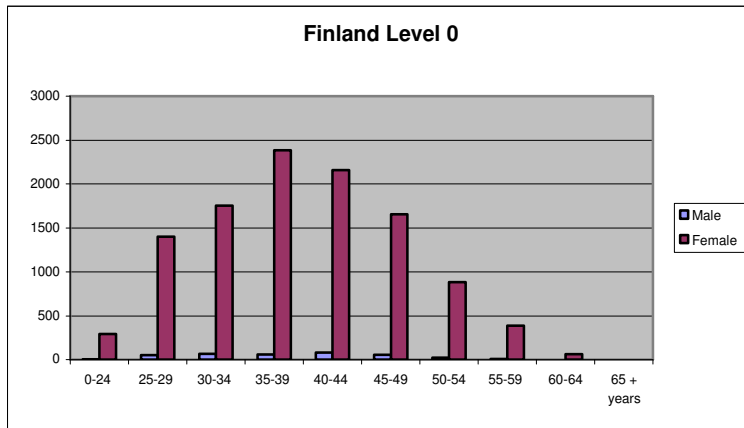


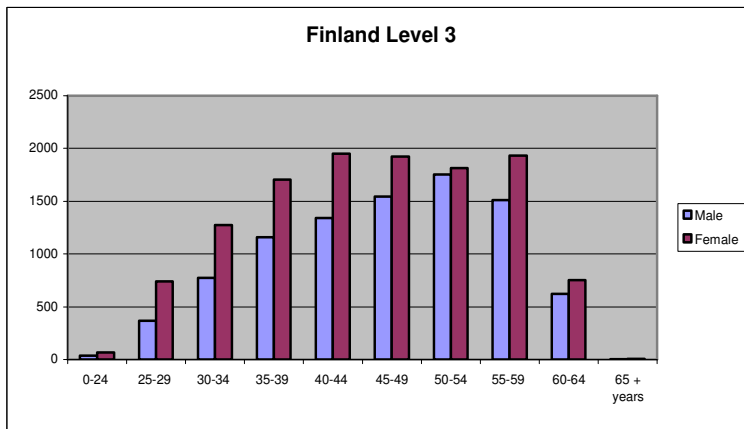
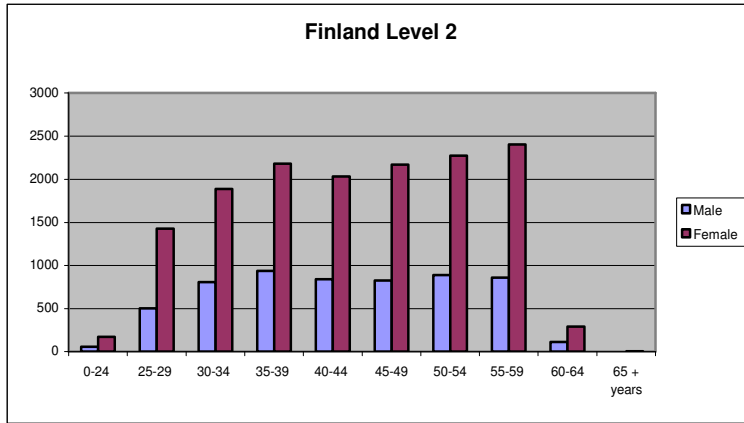
Slovakia



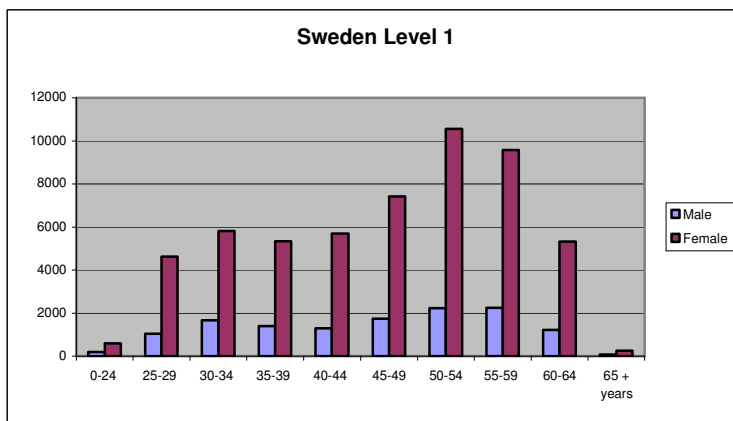
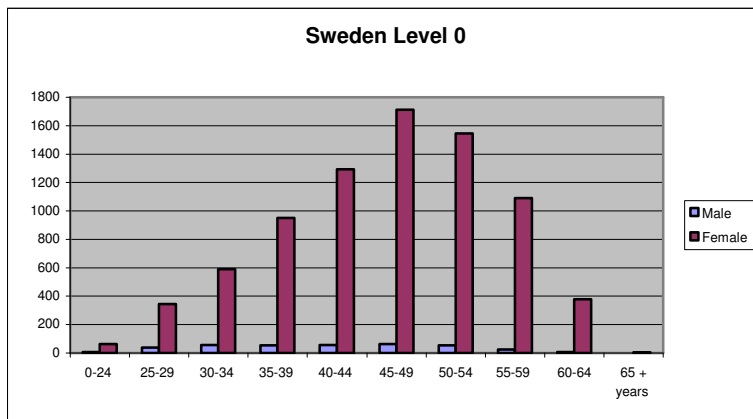


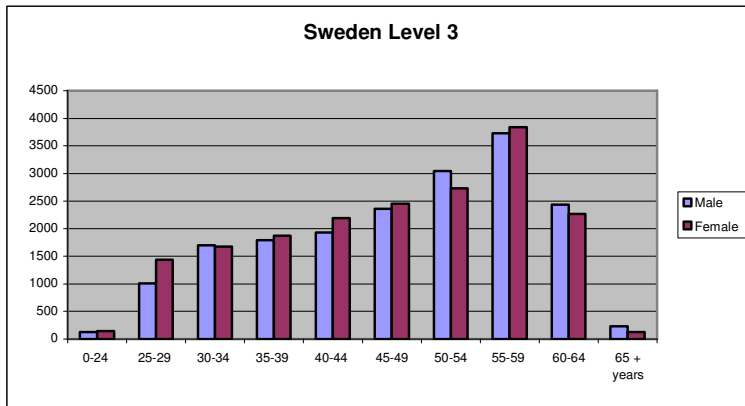
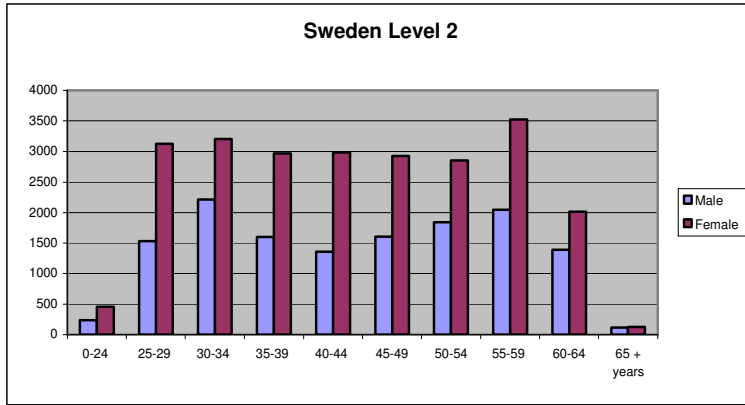
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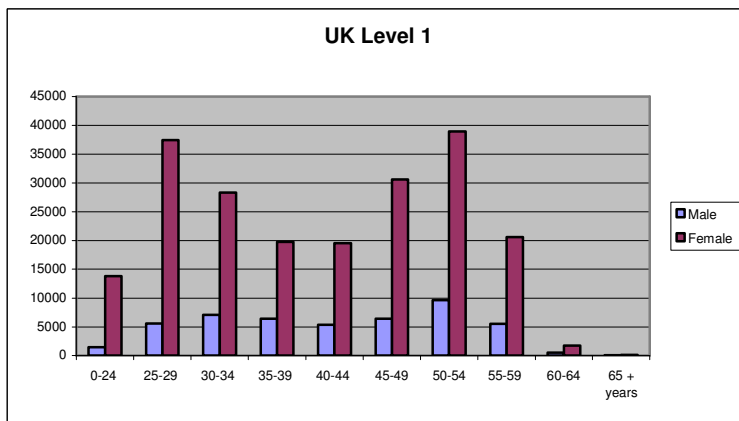
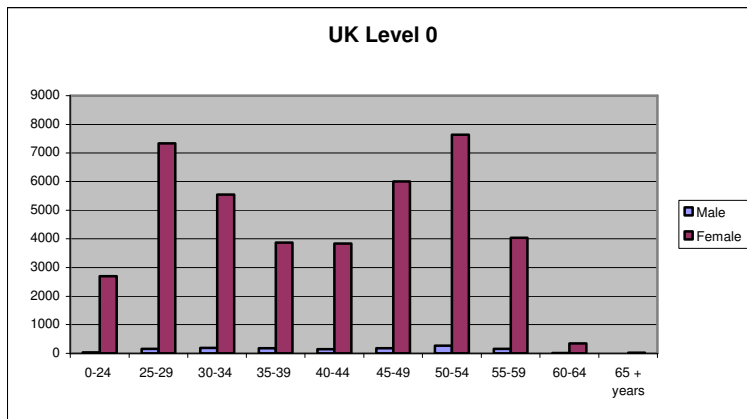


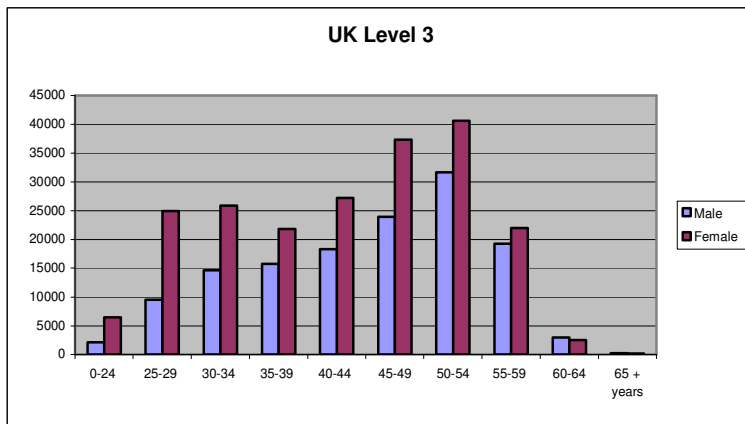
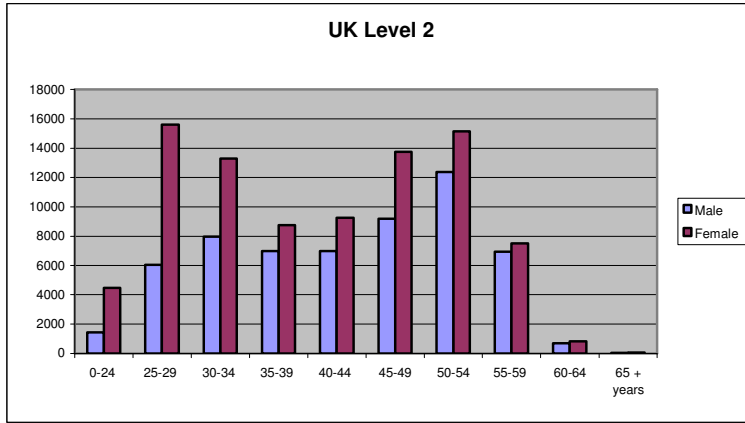
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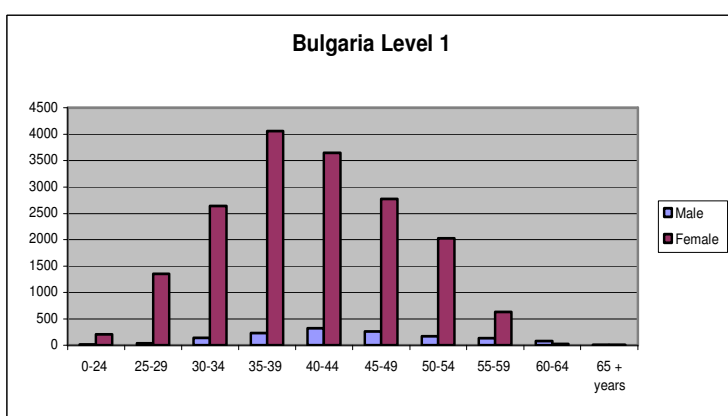
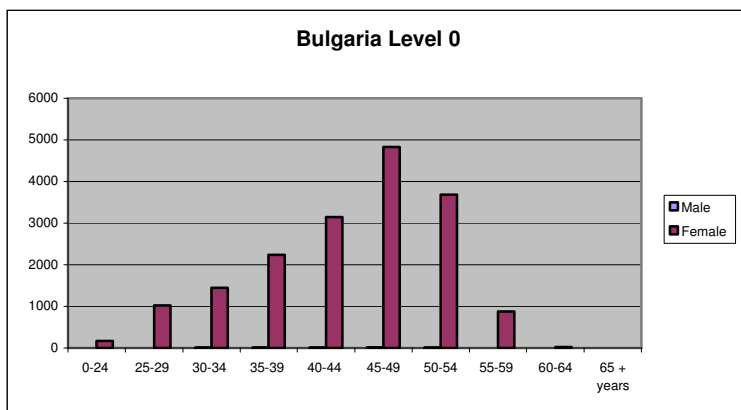


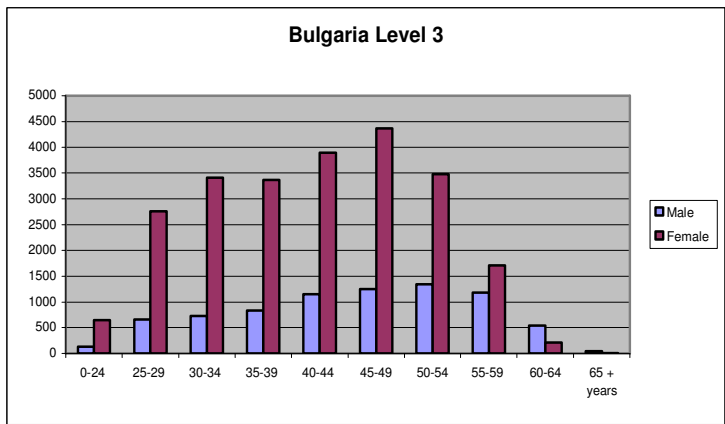
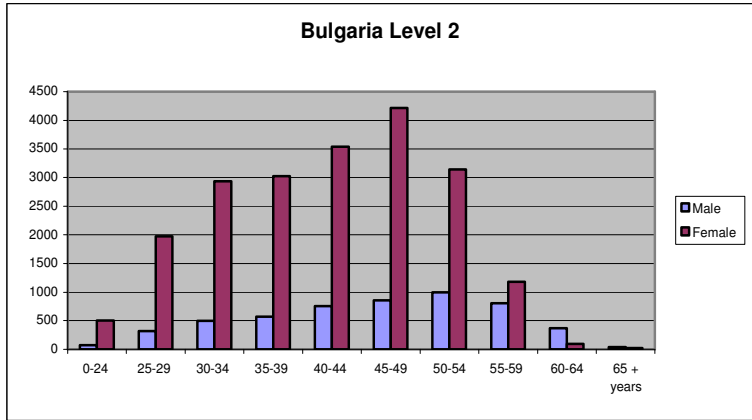
United Kingdom



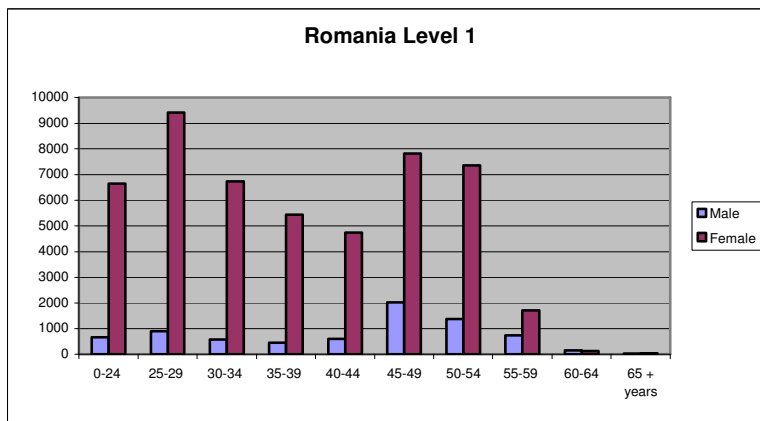
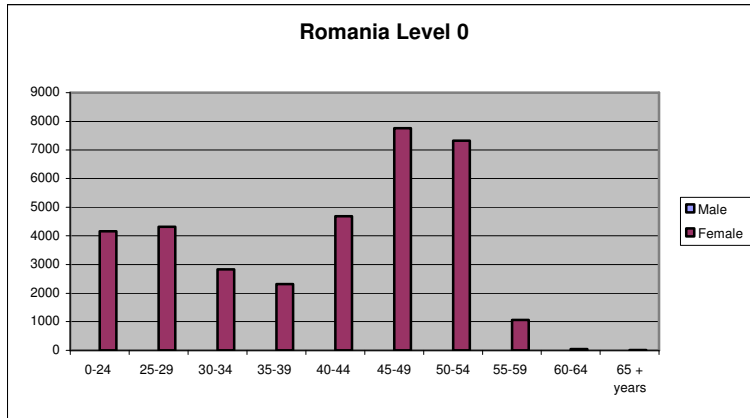


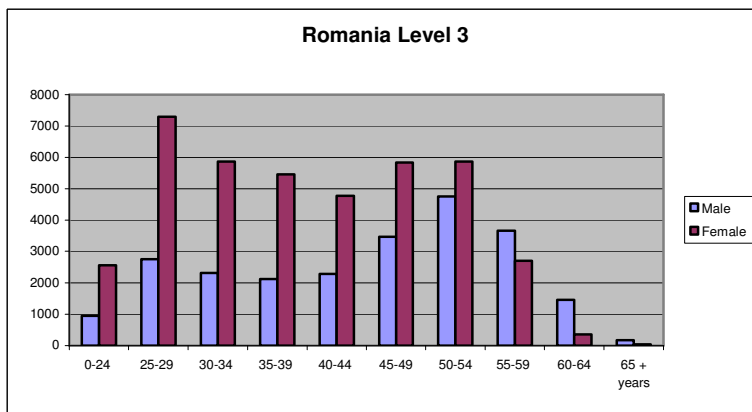
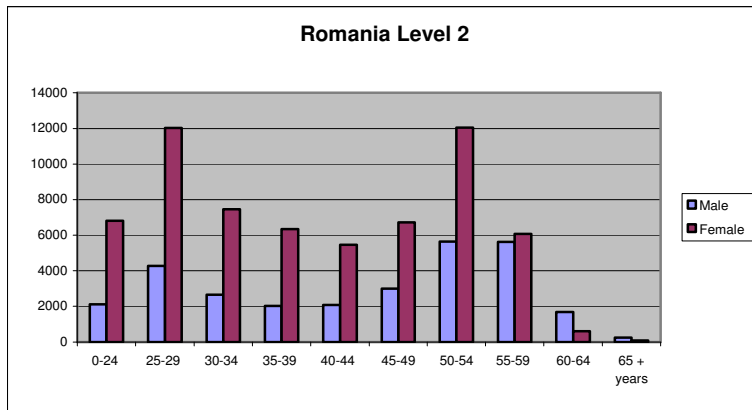
Bulgaria



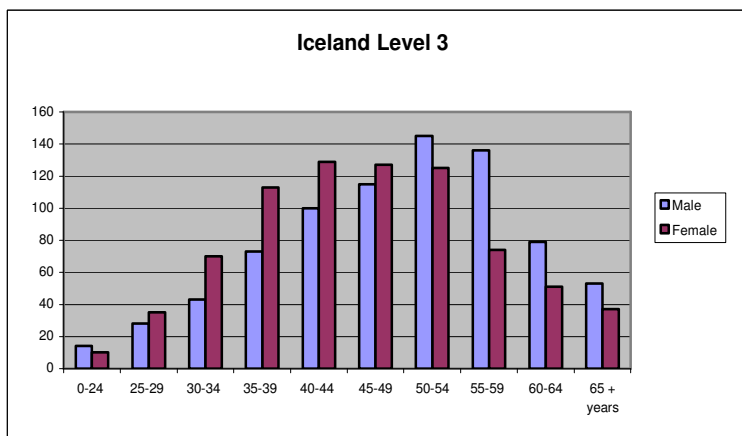
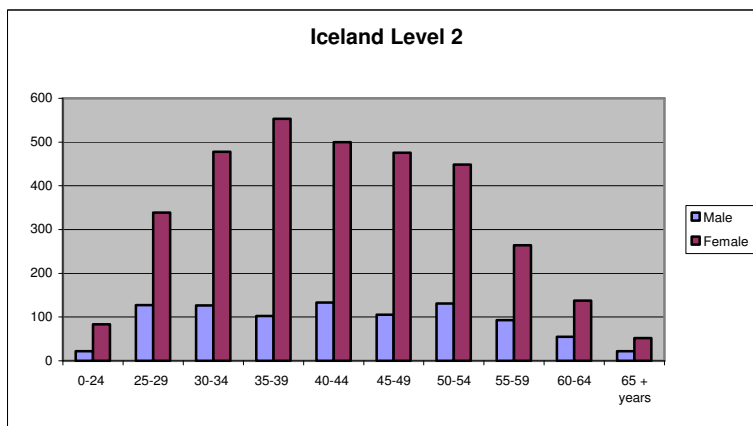
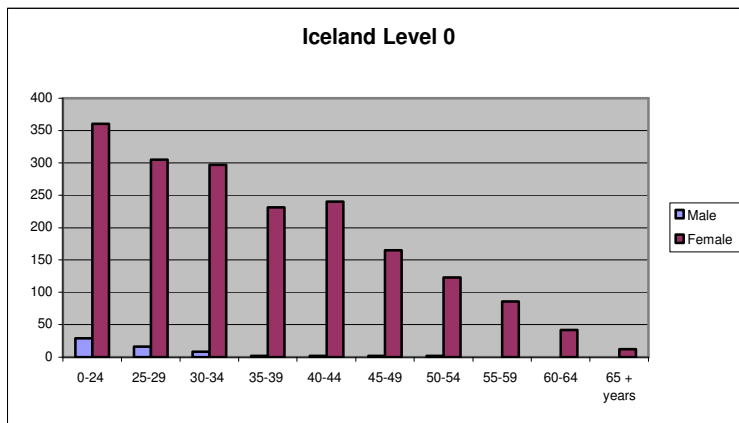


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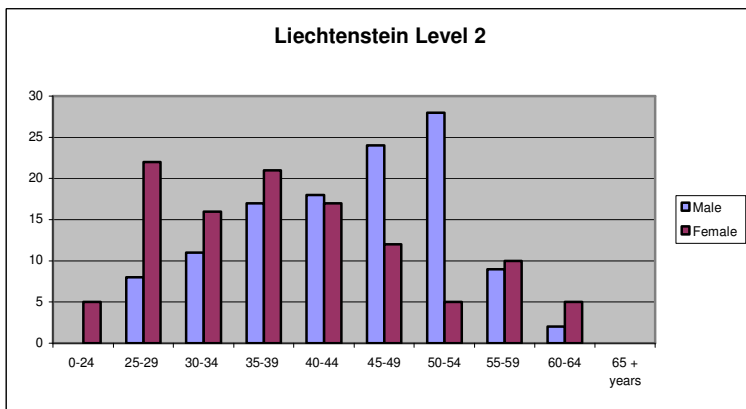
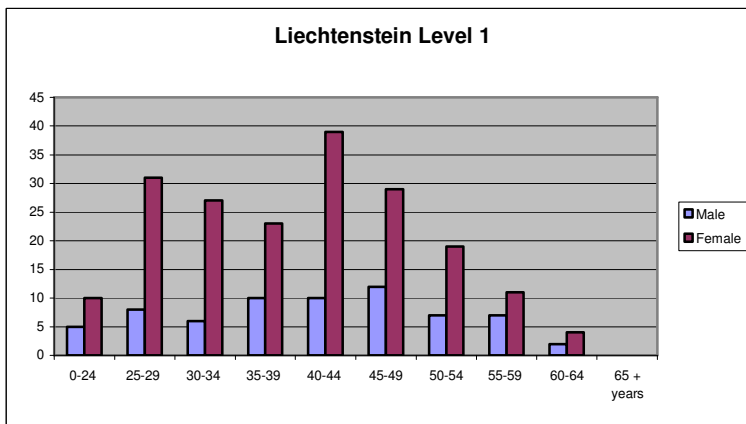
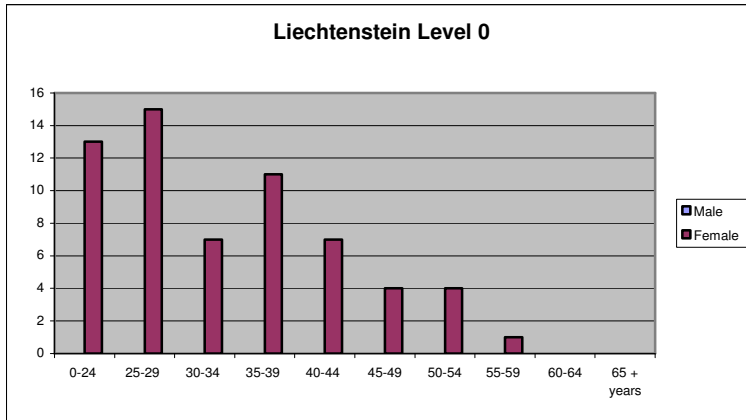




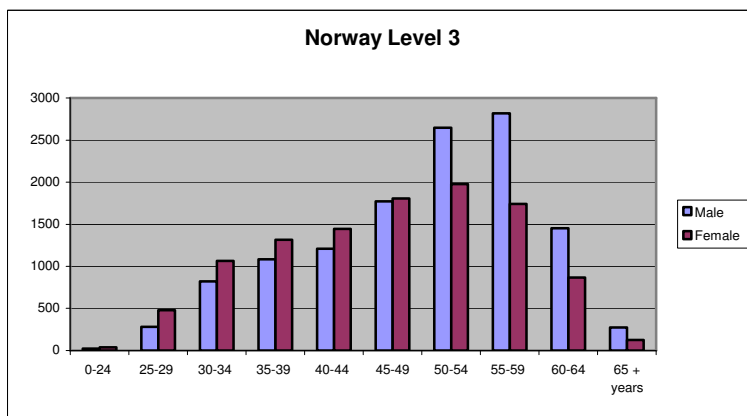
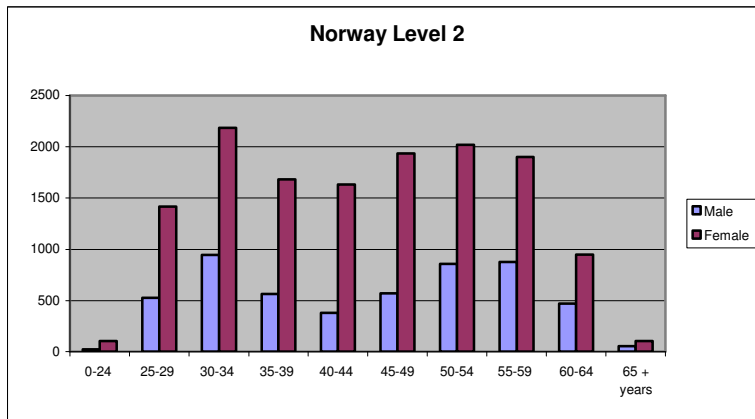
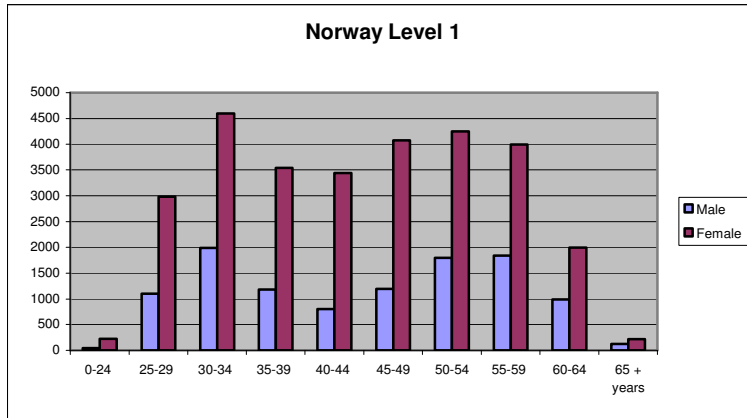
Iceland



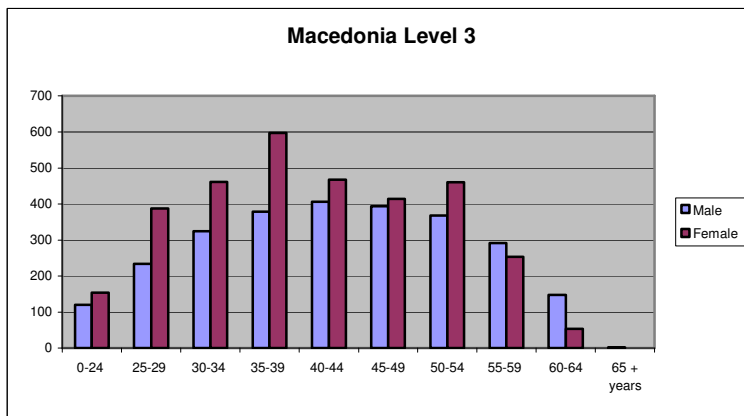
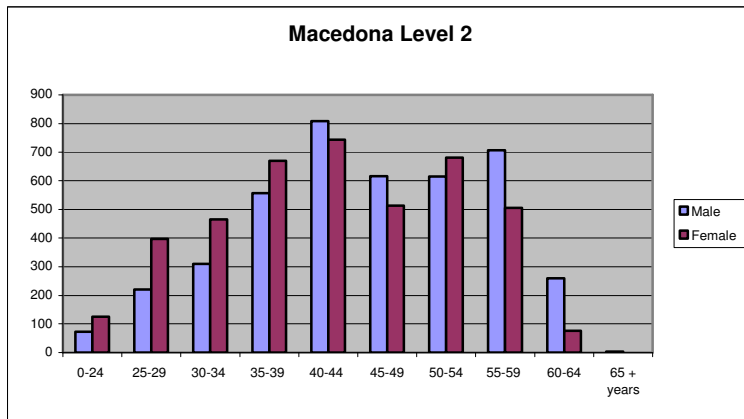
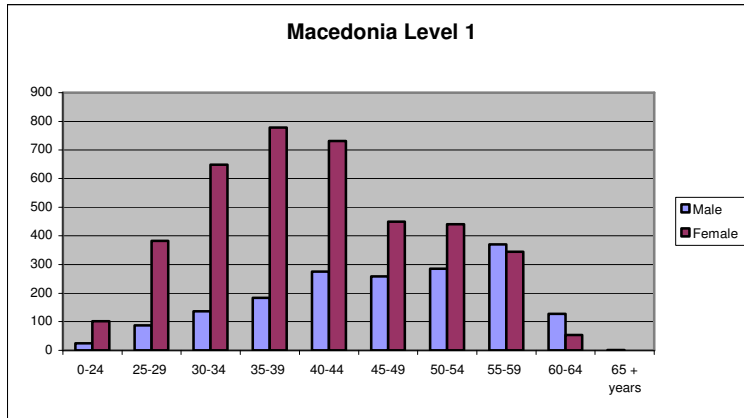
Liechtenstein



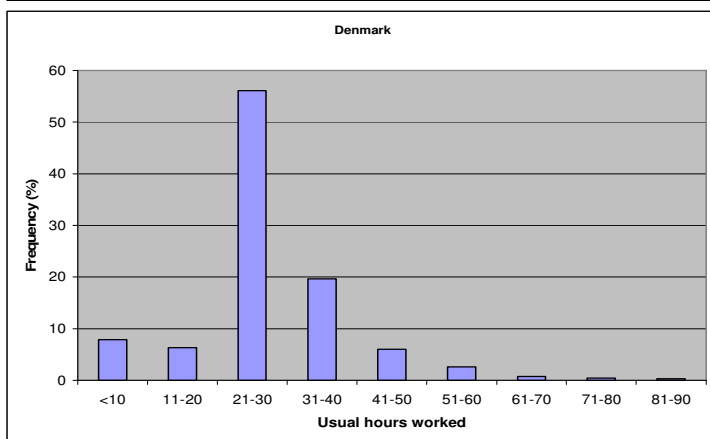
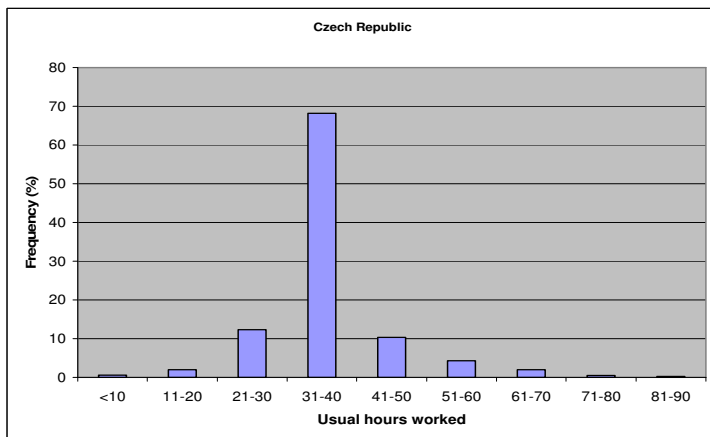
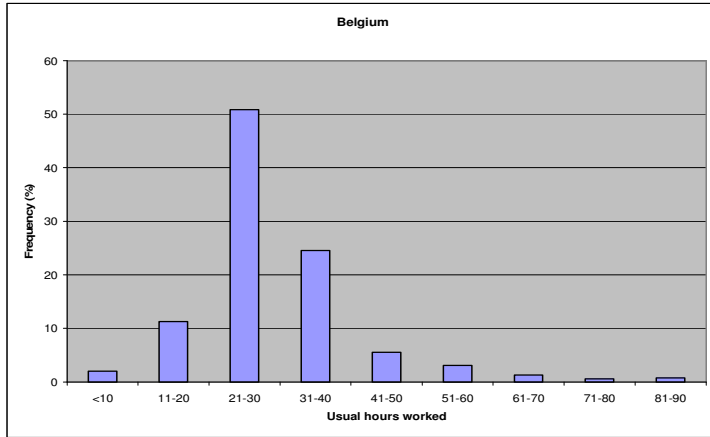
Norway

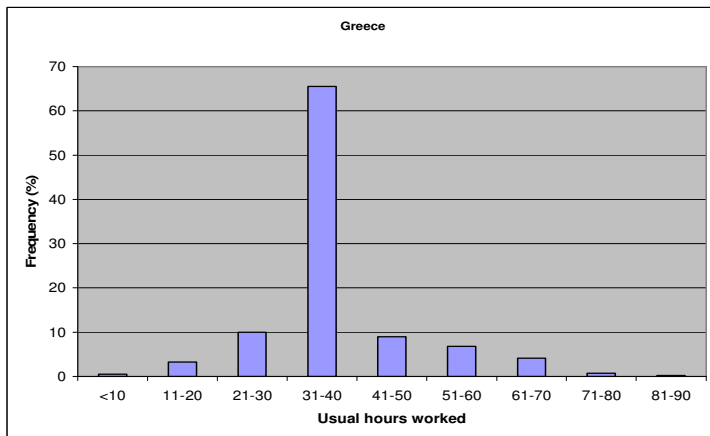
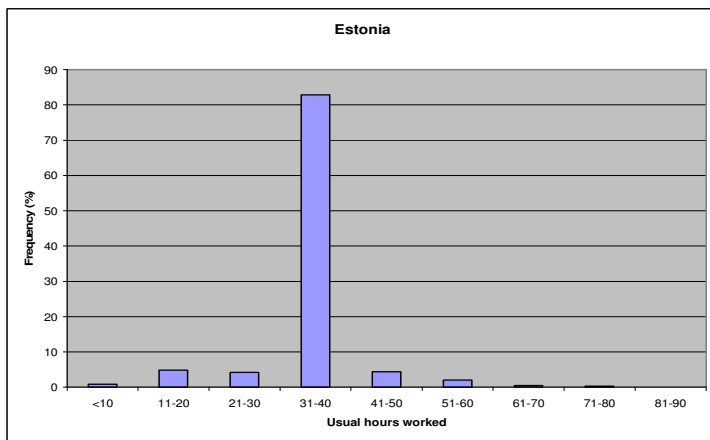
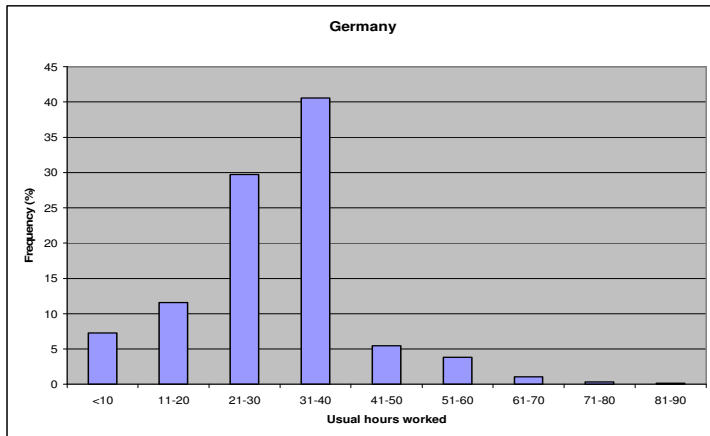


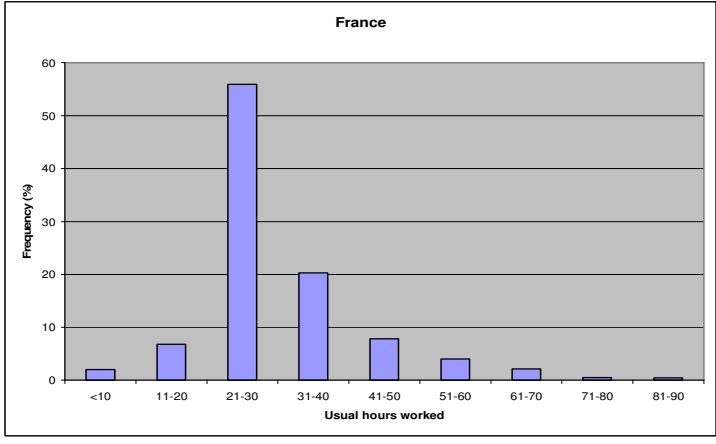
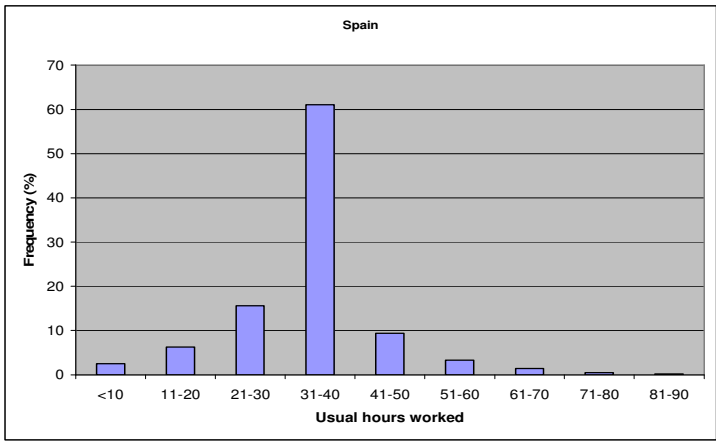
FYR Macedonia

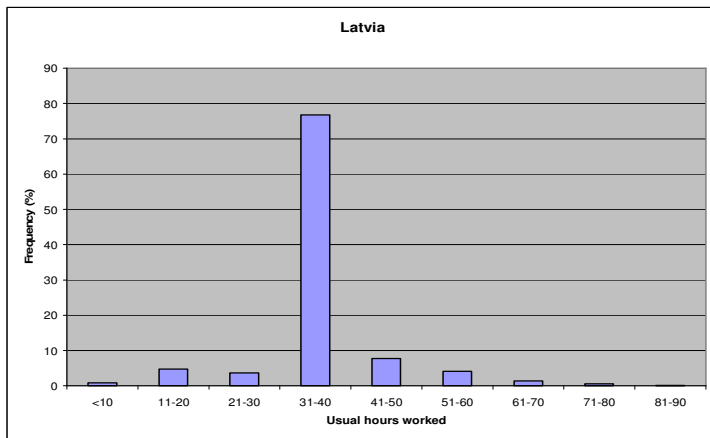
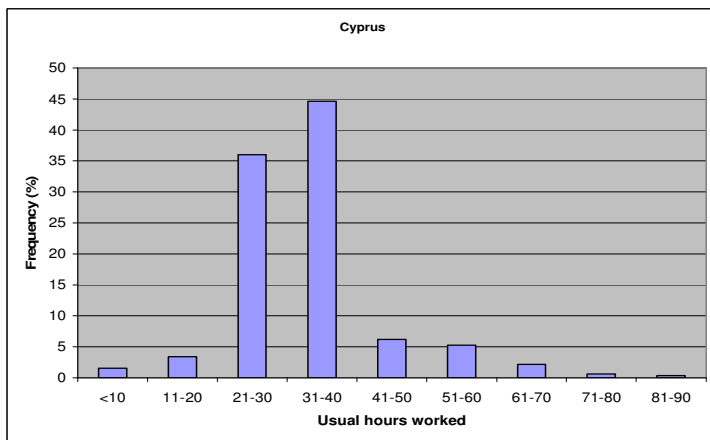
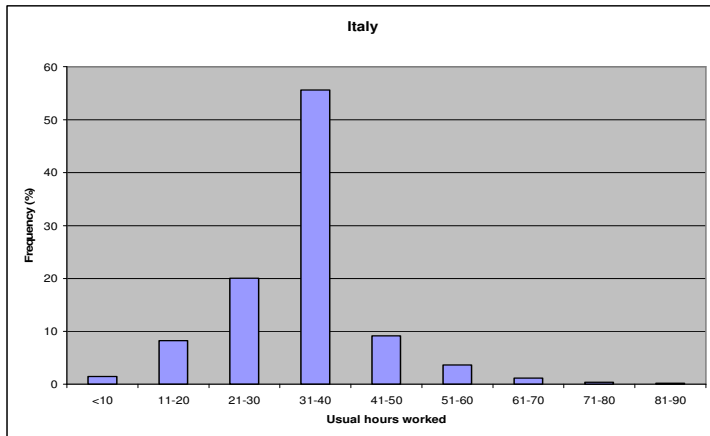


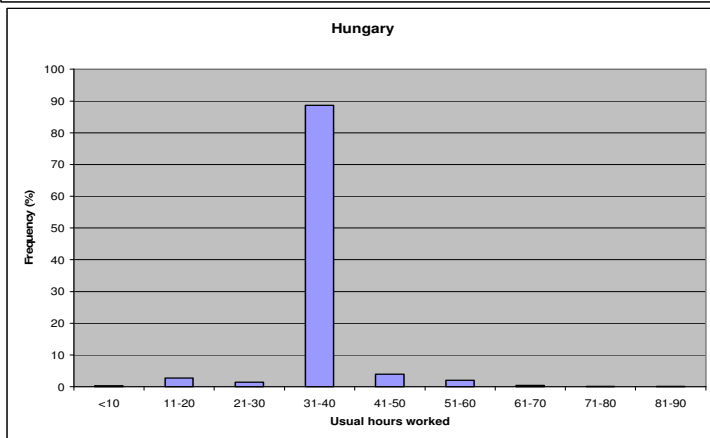
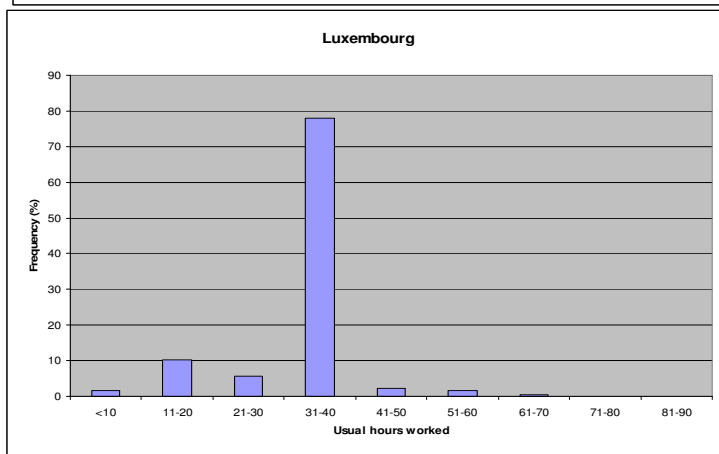
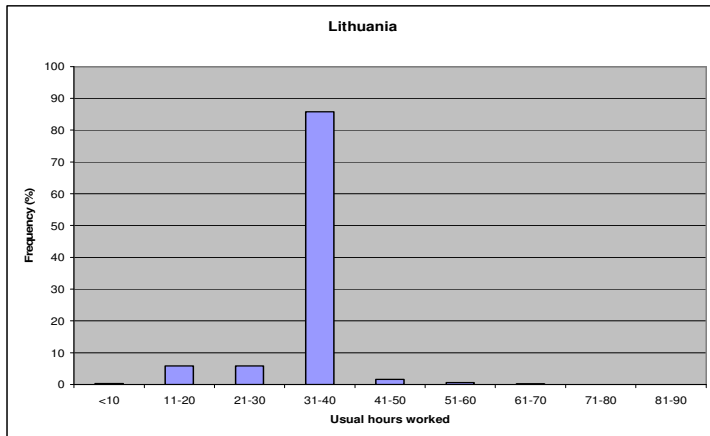
3. Number of working hours for teaching professionals per country (LFS 2005)

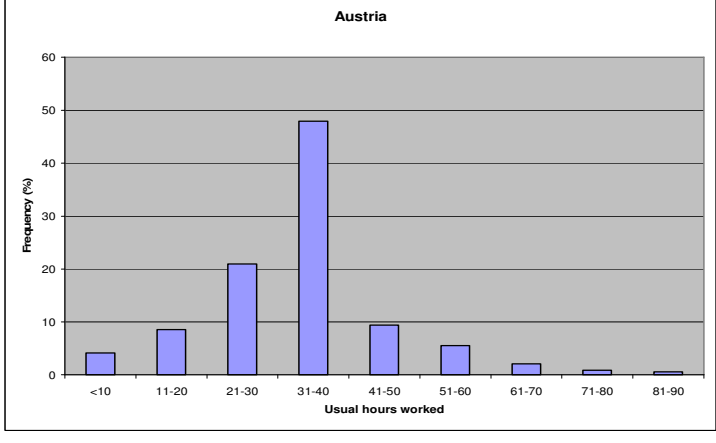
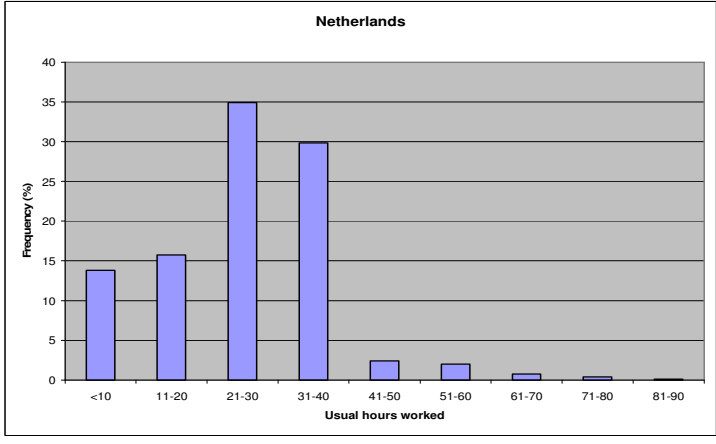
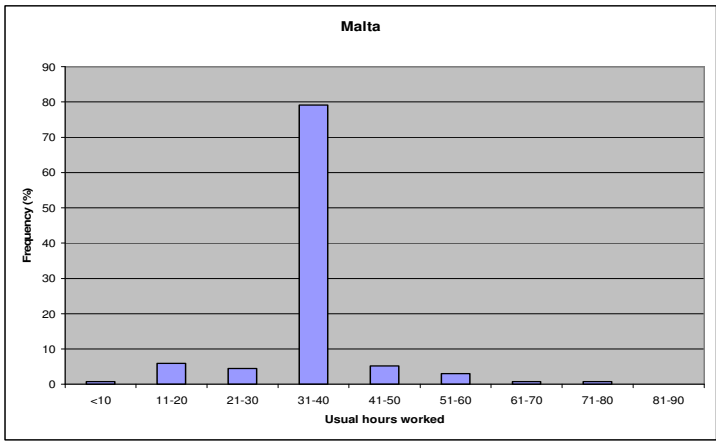


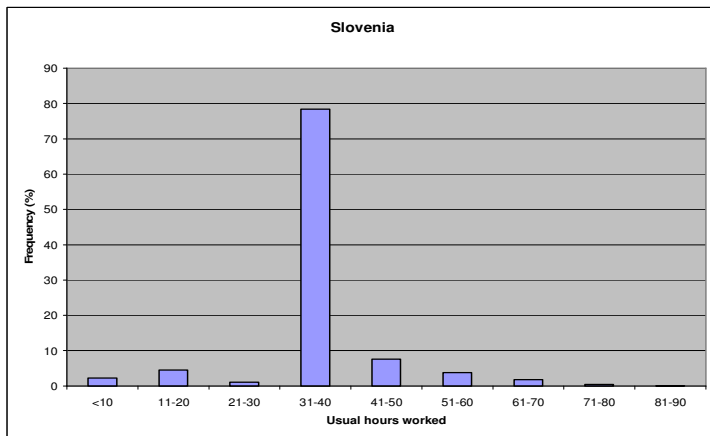
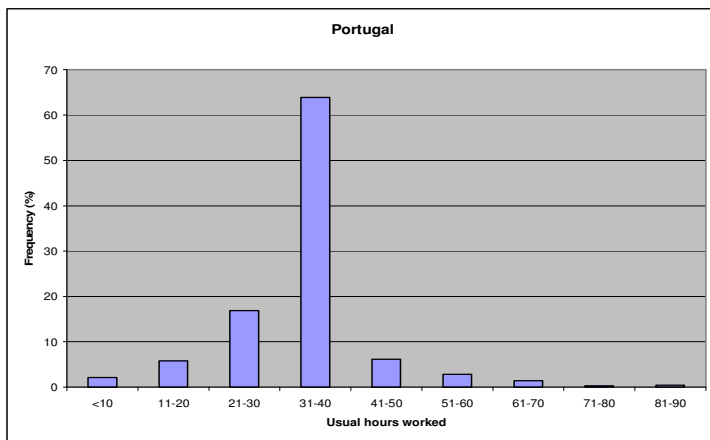
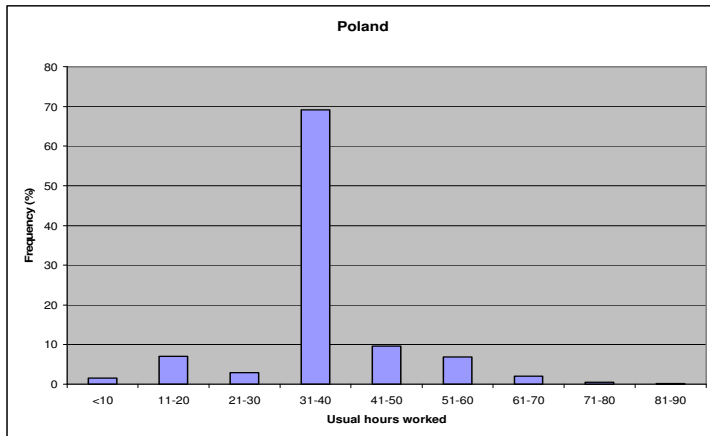


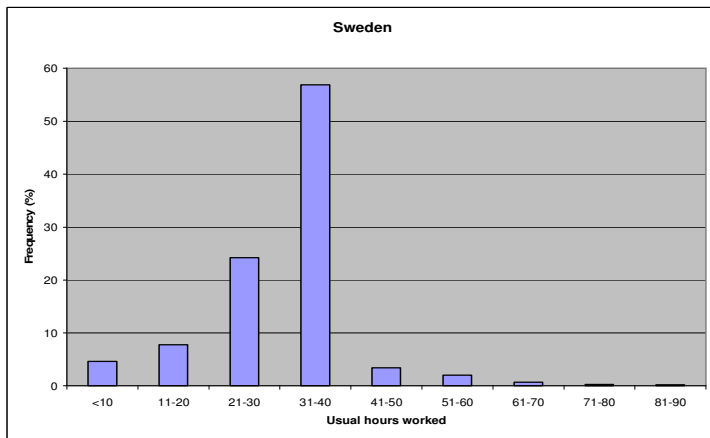
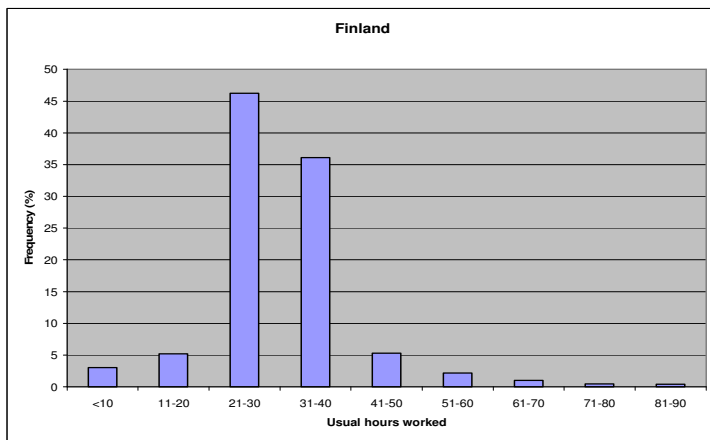
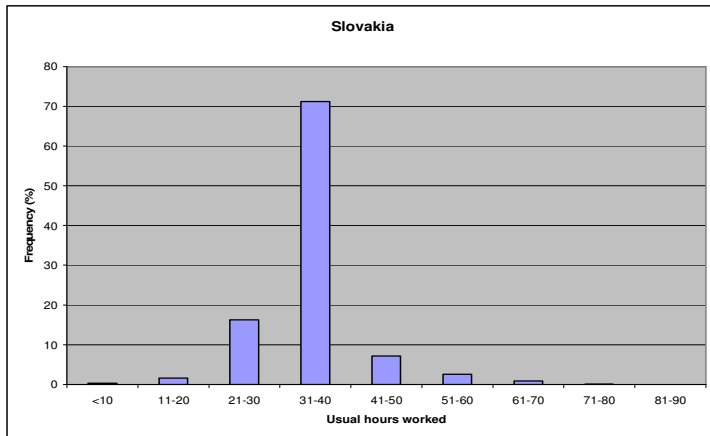


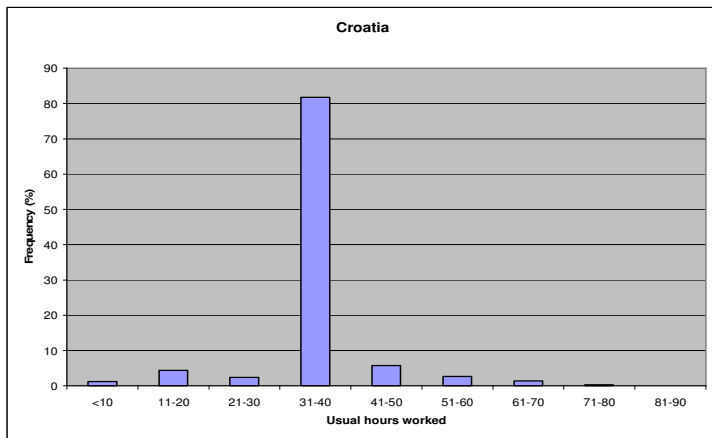
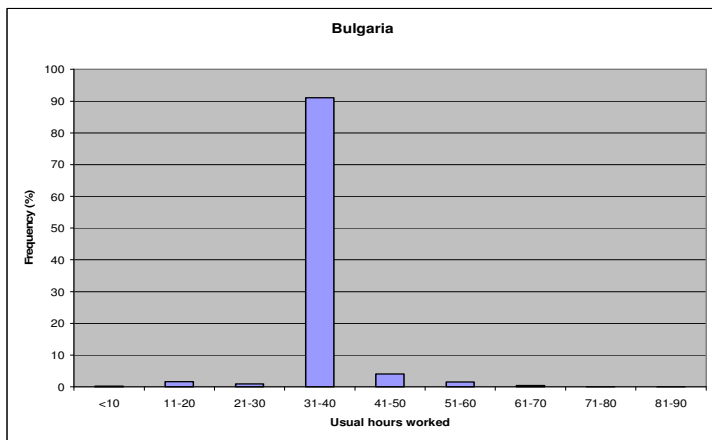
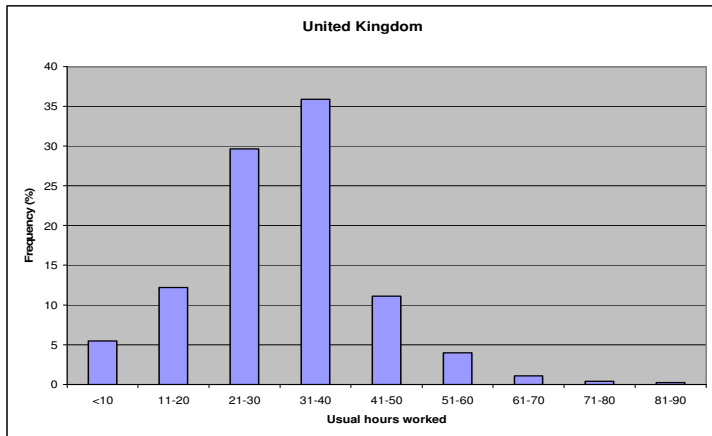


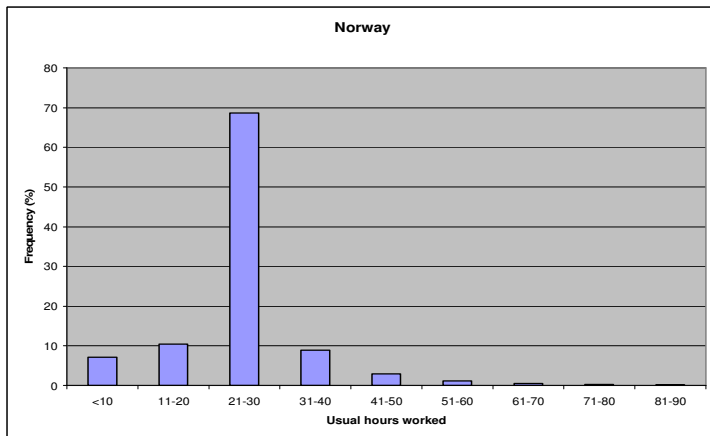
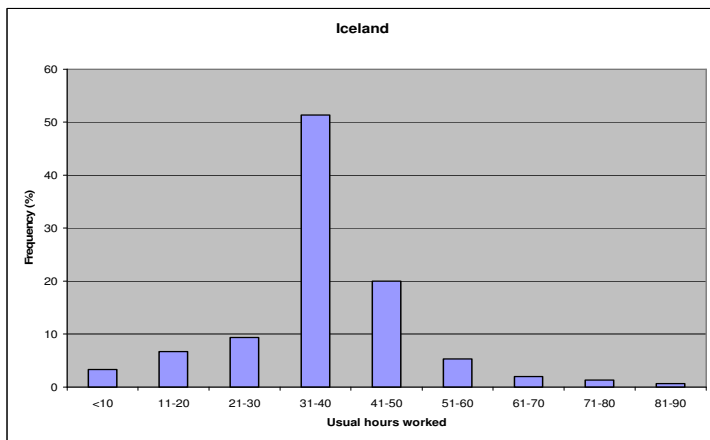
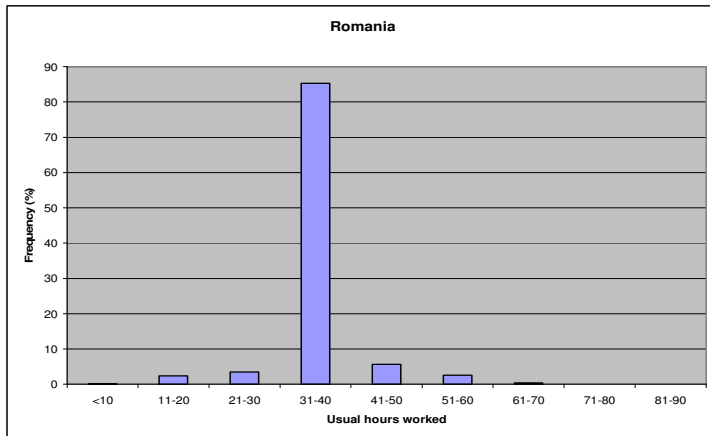






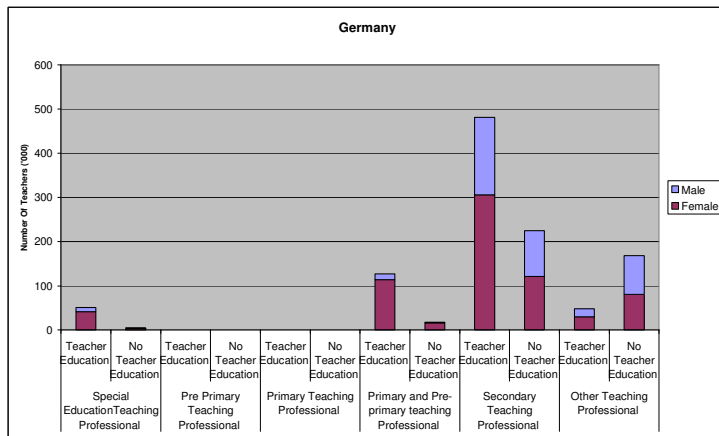
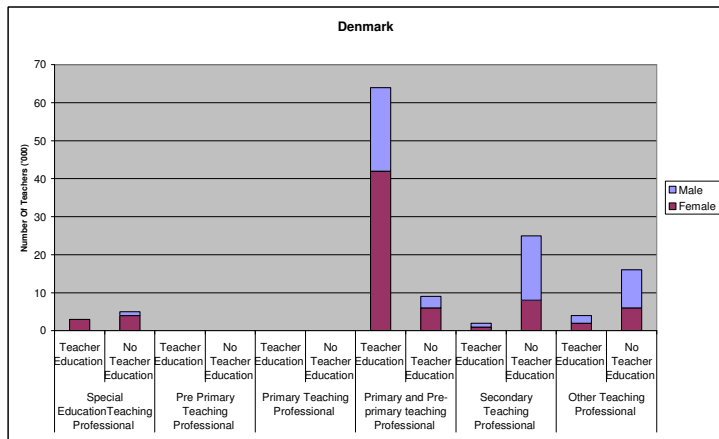
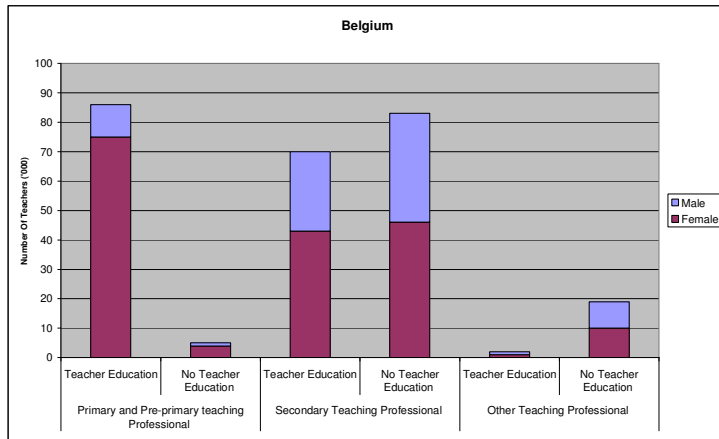


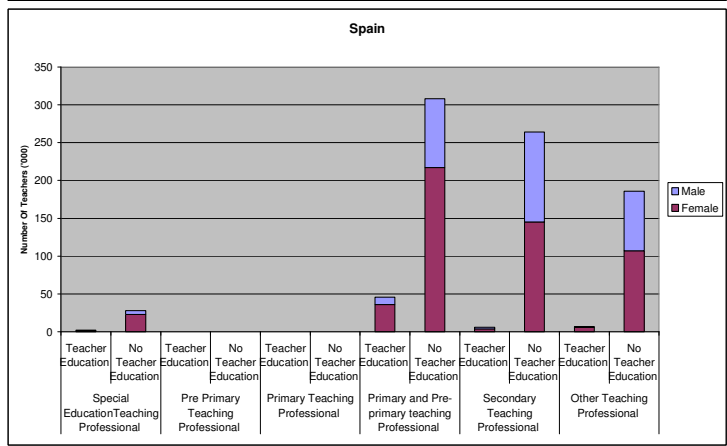
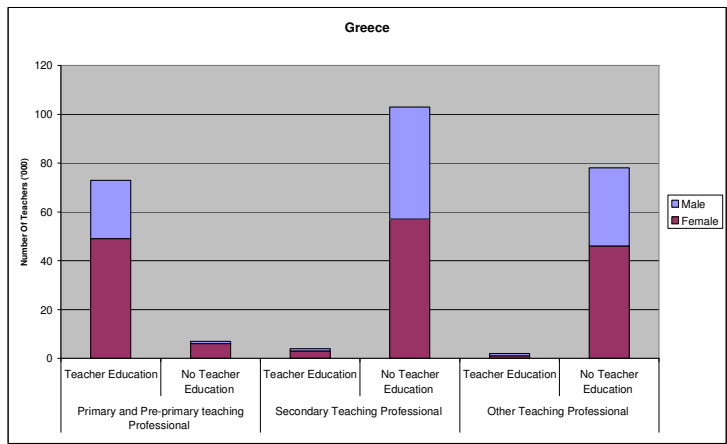
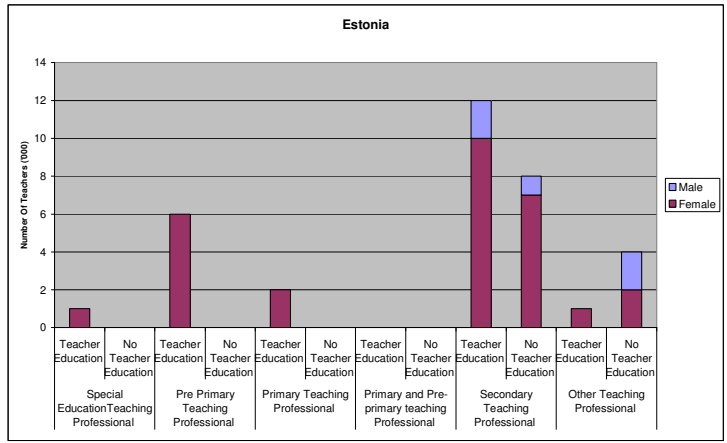


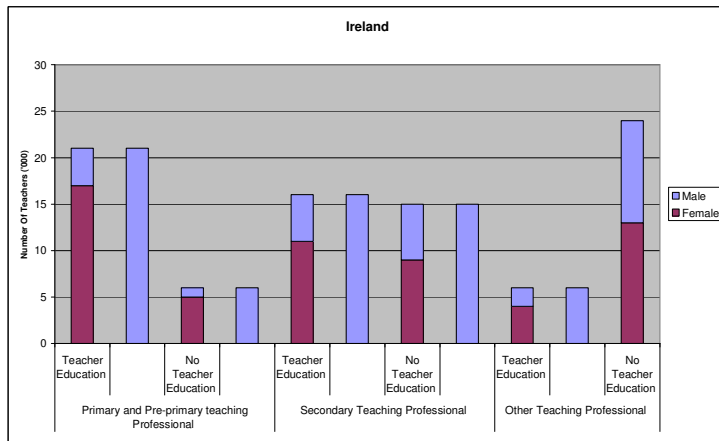
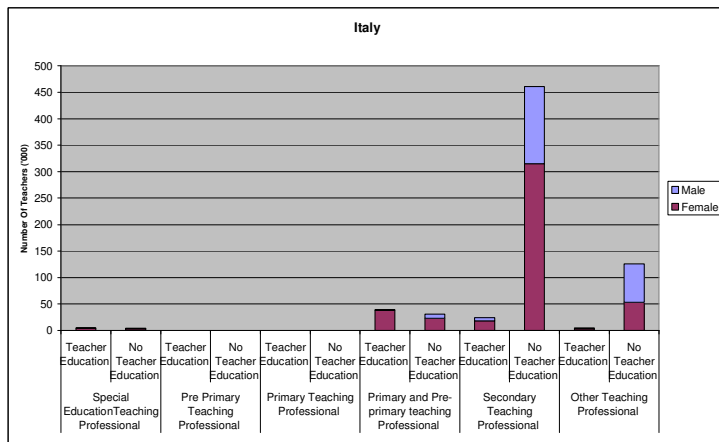
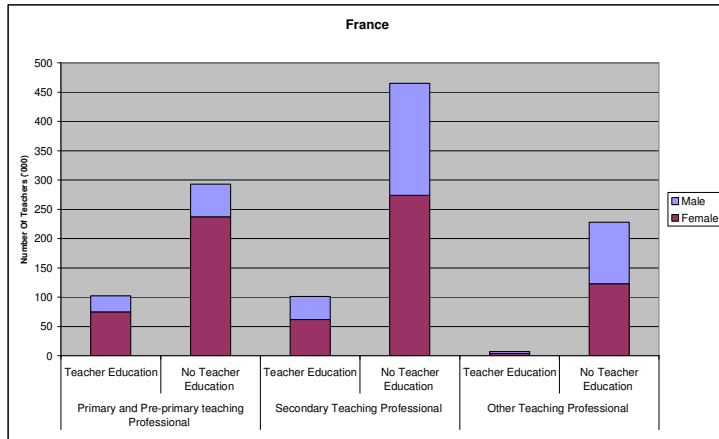


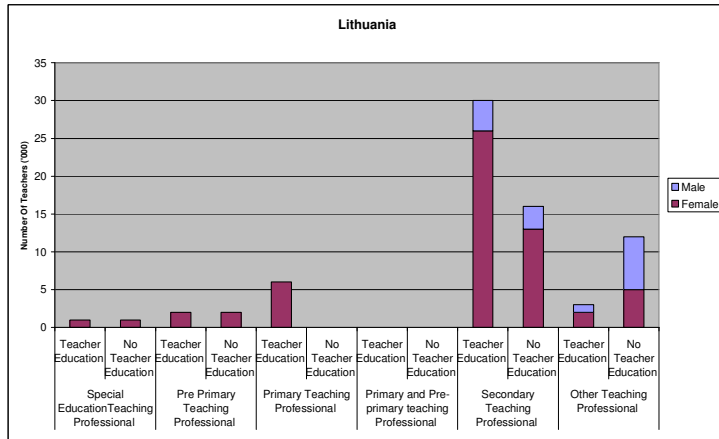
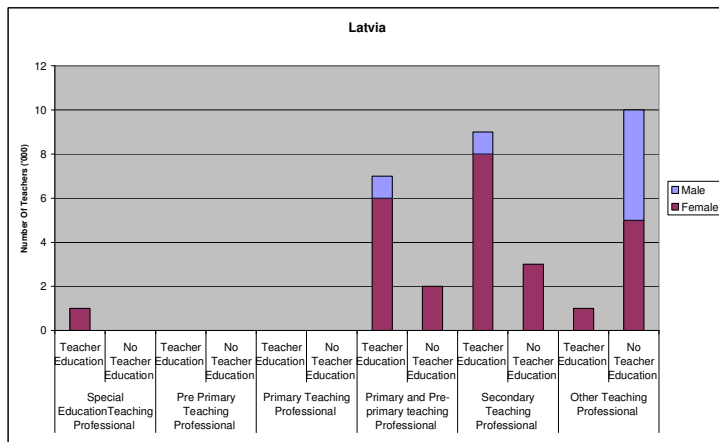
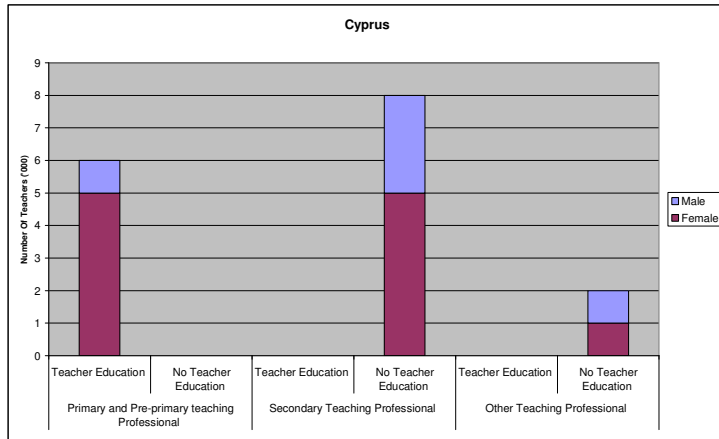
4. Overview of gender and qualifications at each level

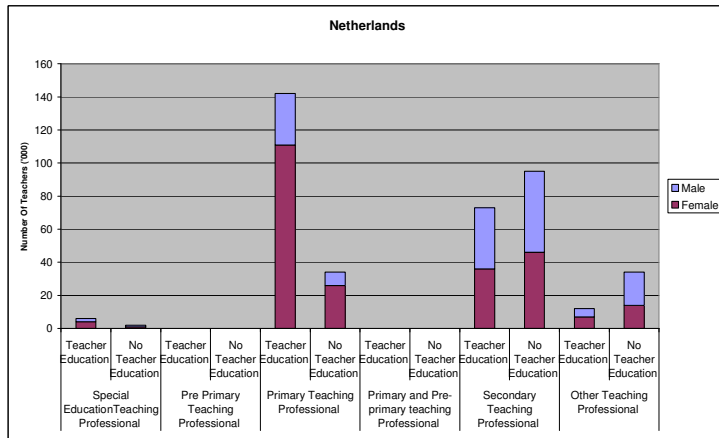
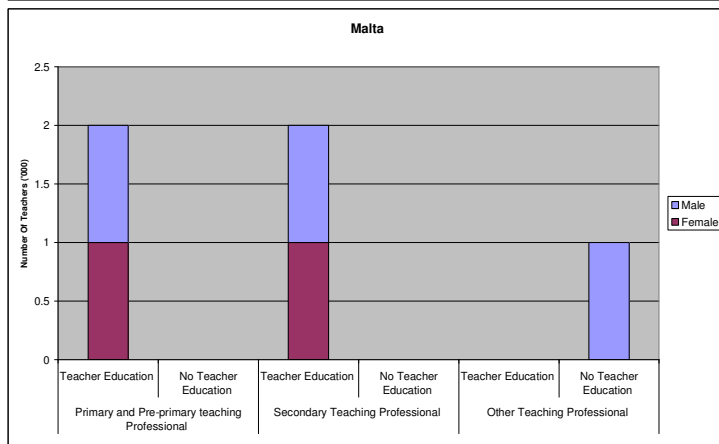
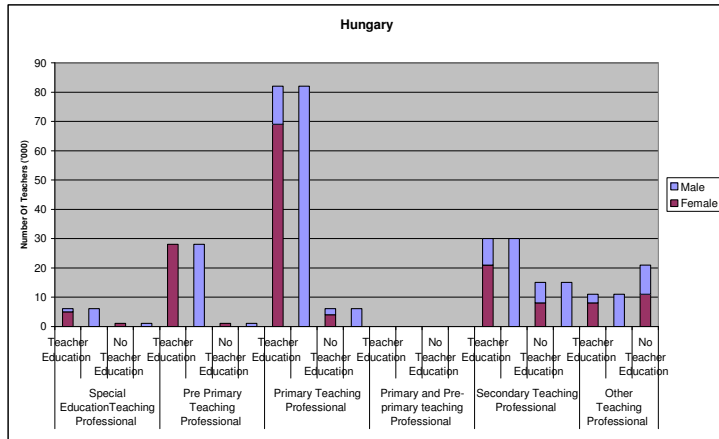
Notes on interpretation: teacher education signifies that the respondent has a teaching qualification as their highest level qualification. No Teacher education means that either no teaching qualification has been gained or a higher qualification has been achieved.

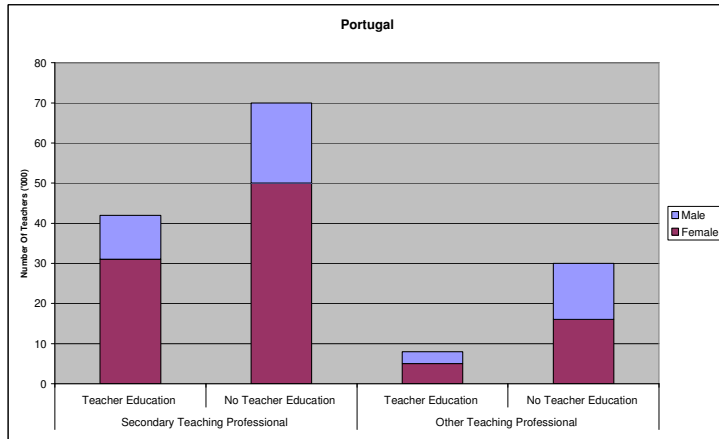
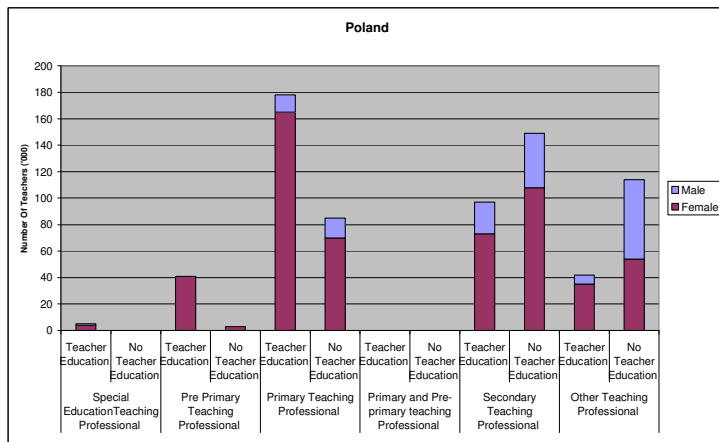
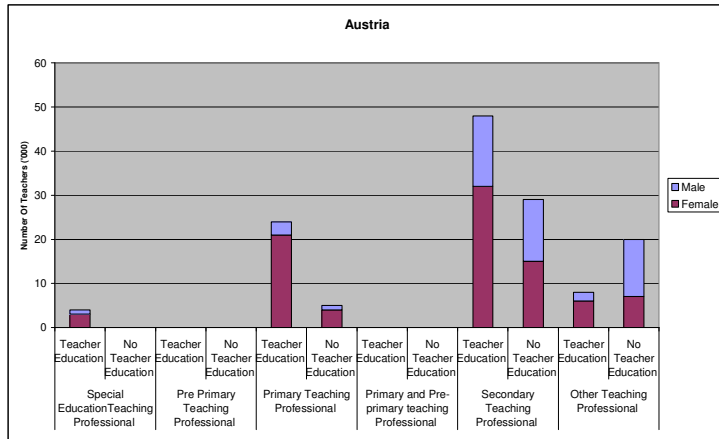


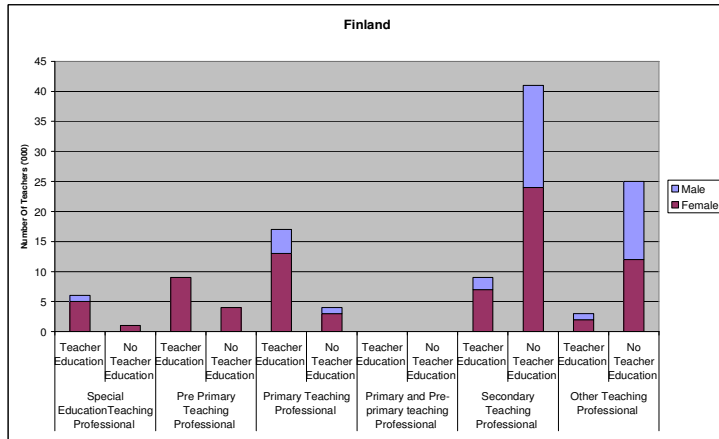
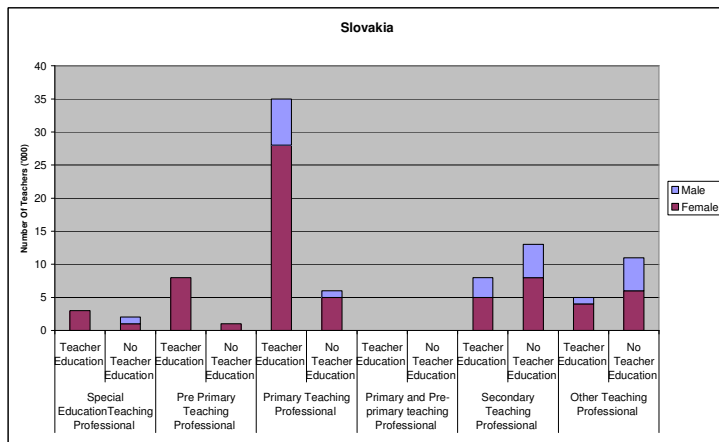
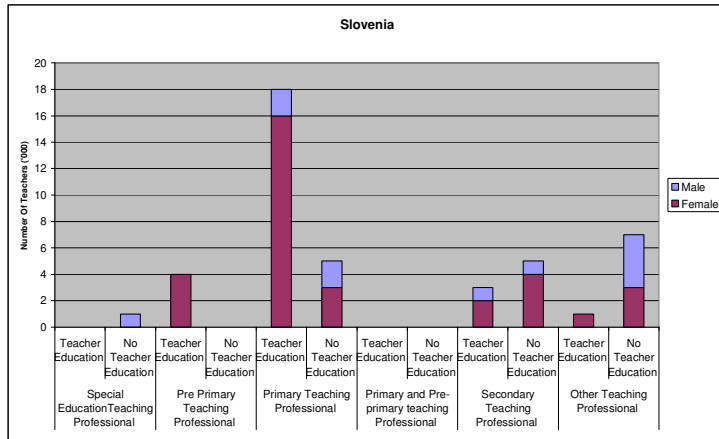


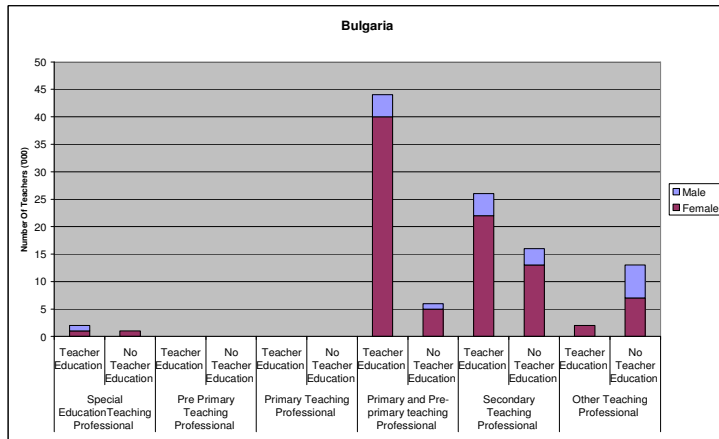
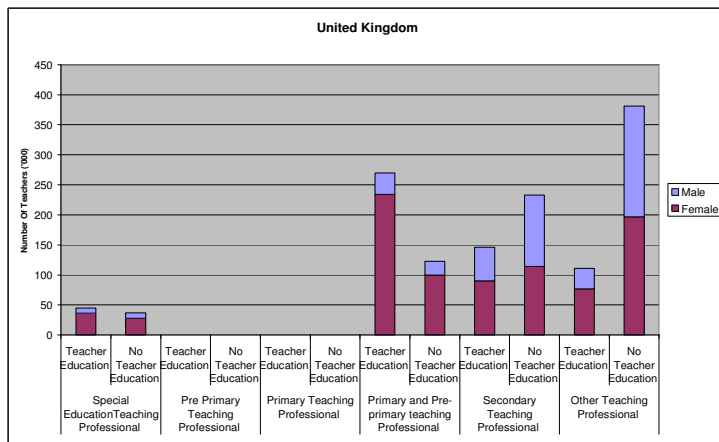
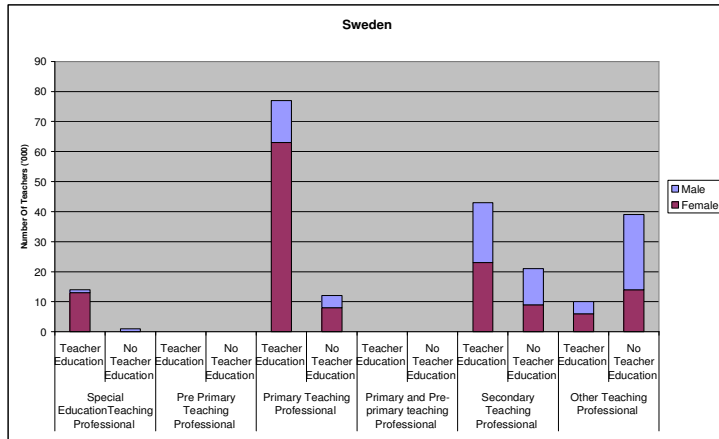


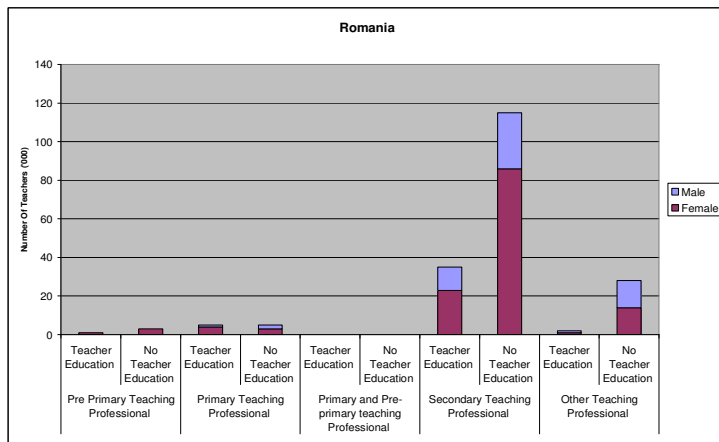
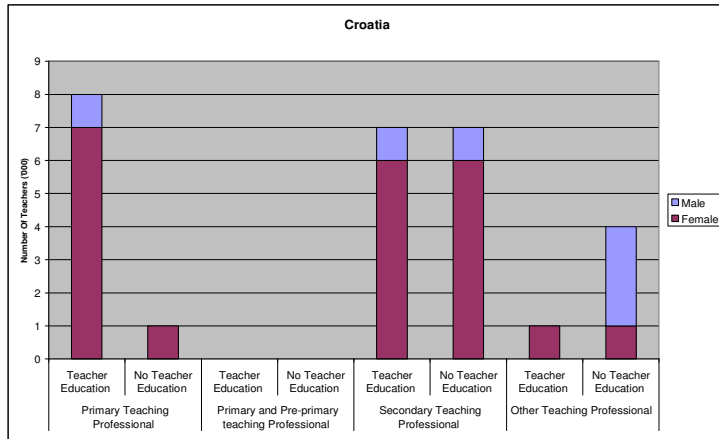


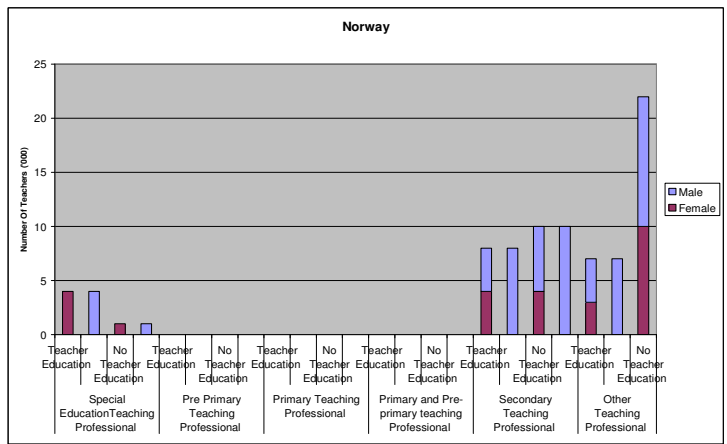
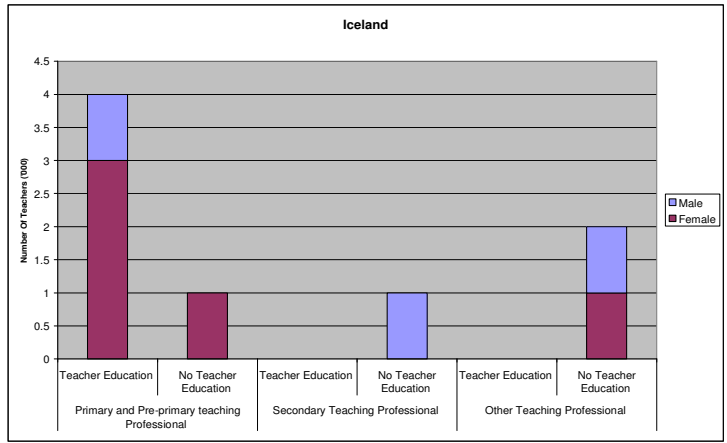












Annex C – Information relating to Section 4

1. Overview of main characteristics upper vocational secondary education and necessary qualifications for teachers and trainers
2. Characteristics of initial vocational training and necessary requirements for trainers

1. Overview of main characteristics of upper vocational secondary education and necessary qualifications for teachers and trainers

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
Austria	<p>Intermediate secondary technical and vocational schools provide not only a thorough general education but also practical vocational training for specific occupations. Intermediate secondary vocational schools are full-time schools except for the colleges for working adults).</p> <p>Upper secondary technical and vocational schools provide general and vocational education (double qualification), and lead both to the exercise of an occupation and to general university requirements (matriculation and diploma examination). Education is full-time and lasts five years. The curriculum is divided into three equal parts: general education, vocational theory and vocational practice.</p> <p>Students on most courses at upper secondary technical and vocational schools must take part in compulsory practical training in business and industry during the summer. A work placement is recommended for courses with no compulsory practical training. Schools will provide support in finding a suitable placement (trainee) post.</p>	<p>Teachers at intermediate or upper secondary technical and vocational schools are subject area specialists. The nature of training courses and admission requirements depend on the subjects to be taught. The training of teachers of general subjects in intermediate and higher technical and vocational schools is the same as that of academic secondary school teachers. Teachers of theoretical subjects in higher vocational schools must have professional experience in the relevant area in addition to university training. Special training is provided for teachers of practical subjects and teachers of theoretical subjects in intermediate vocational secondary schools (e.g. in vocational teacher training schools and teacher training schools).</p>
Belgium French	On completion of full-time education (at either 15 or 16), pupils can choose to follow a block release course	The administrative and salary status of block release staff in secondary education organised in centres for

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
Community	<p>at secondary level (lower vocational and/or higher vocational and technical) and can enrol in a CEFA (<i>Centre d'Éducation et de Formation en Alternance</i> – centre for education and block release training).</p> <p>These centres are attached to an institution providing full-time secondary technical and vocational education. Trainees receive two types of training: practical training within an undertaking and theoretical vocational and general education in the centre (CEFA).</p>	<p>block release education and training is governed in accordance with the regulations in force for staff working in full-time secondary education or on social advancement courses, according to the case.</p>
Belgium Flemish Community	<p>Vocational secondary education (<i>Beroepssecundair onderwijs</i> - BSO) is practical education combining the acquisition of specific skills with general education. It may provide access to higher education, but it normally leads to employment.</p>	<p>Teachers are subject specialists and are allocated to teach one or more subjects. There is no obligation to follow in-service training. There are different forms of teacher training:</p> <p><i>Teacher training in full-time higher teacher training institutions</i> - This course lasts 3 years, and comprises concurrent general and pedagogical training, together with the study of one or two specific disciplines in the case of future lower secondary teachers.</p> <p><i>Teacher training at universities</i> - Students enrolled in university education in certain specialised subjects may obtain a supplementary certificate entitling them to teach.</p> <p>The above teacher training programmes are to teach in lower and upper secondary education.</p> <p>Many teachers in technical and vocational secondary education also hold the qualification for pedagogical training.</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
Belgium German Community	Under the secondary education system, the qualification stream offered in technical and vocational education is designed primarily to prepare pupils for employment, while allowing them the option of entering higher education.	Teachers of vocational education courses and technical courses, for which no full-time training is available, may follow part-time teacher training through social advancement courses (adult and further training). Courses include theoretical and practical teacher training and teaching practice and lead to the certificate of pedagogical aptitude.
Cyprus	While maintaining close links with industry and other state-run and private training institutions, Secondary Vocational Education is integrated into the national school system. Playing a significant role within the educational, economic, industrial and social environment of Cyprus, it provides a broad range of technical and vocational education, initial training and retraining programmes to eligible Gymnasium leavers and adults.	No information was found.
Czech Republic	Secondary vocational schools: these training institutions are historically associated with different forms of practice-oriented apprentice training which was accompanied, to a limited extent, by general education. These institutions were later replaced by so-called apprentice schools, whose status was however not equivalent to that of the selective schools (gymnázia, secondary technical schools). After the World War Two, the status of such schools rose to rank equally alongside other upper secondary schools. They were run by companies and after 1990 they came under the control of the Ministry of Education,	Teachers of practical training and teachers of vocational training can acquire the same professional qualifications as teachers of technical subjects. They may be also tertiary professional school or upper secondary school leavers holding maturitní zkouška certificate. If this is the case they have to achieve their teaching qualification concurrently. The teachers of vocational training must have an apprenticeship certificate in the relevant field of study.

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>Youth and Sports, and from 2001 regions.</p> <p>The participation of companies in vocational training, particularly at school level, is developing. To improve their educational programmes, the schools are collaborating with Labour Offices, local enterprises, trade unions, professional associations and the Chambers of Commerce. Business interest in vocational training is also manifesting itself in the fact that some enterprises are once again establishing their own (private) secondary vocational schools or organising vocational training in their premises. The participation of businesses in the financing of vocational training is, however, very limited. It is characteristic of vocational education that pupils are not trained to work for a specific company. Generally, interest in these types of study has decreased in favour of fields of study completed by maturitní zkouška examination (full upper secondary education which gives access to higher education).</p>	
Denmark	<p>Vocational education and training programmes are offered as part of general upper secondary education. Higher Preparatory Examination Programme (HF): The HF-programme was introduced in 1967. Originally, the idea was to create a 2- year programme aimed specifically at prospective candidates for teacher training in connection with a reform of the teacher training itself. There was, however, concern that this concept would result in an educational 'cul-desac', and the course design was therefore changed</p>	<p>In order to gain a permanent teaching post at a Gymnasium, the candidate must have a university degree in one or more of the subjects forming part of the curriculum in general upper secondary education, that is, visual arts, biology, Danish, computer science, design, drama, English, business economics, philosophy, film and media studies, French, physics, geography, Greek, history, physical education and sport, Italian, chemistry, Latin, mathematics, music, natural science, classical studies, religious education, Russian, social studies,</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>into an alternative route to higher education.</p> <p>The HF is a 2-year programme, and the final examination qualifies students for entrance to higher education. The HHX- and HTX-programmes: in addition to the vocational education and training programmes, technical and business colleges also provide programmes leading to the higher technical examination (<i>Højere Teknisk Eksamen</i> - HTX) and the higher commercial examination (<i>Højere Handelseksamen</i> - HHX), respectively.</p>	<p>Spanish, technical studies, creative art and German. They must also have undergone professional postgraduate teacher training for teachers of the <i>Gymnasium</i> and HF.</p>
Estonia	<p>In Estonia, initial vocational training is provided in schools. Although other forms of vocational training are not introduced in Estonia, in some occupations (for example, smith, and goldsmith) only apprenticeship is used for initial training. In recent years, the tendency to continue education at upper secondary level (<i>gümnaasium</i>), instead of in VET institutions, has increased among pupils satisfactorily completing basic education. The proportion of those who opted for upper secondary schooling in this way rose from 56.2% in 1991 to 73,9% in 2002/03. Meanwhile, the number of basic education certificate holders who went on to Vocational Education and Training (VET) institutions fell to 25,4%. At the same time, however, interest in VET has increased among those successfully completing upper secondary education.</p>	<p>Teachers who have received similar training to teachers who teach in upper general education schools, teach general education subjects in VET schools. Passing an additional course of vocational pedagogy is required.</p>
Finland	<p>Post-compulsory education in Finland is divided in general and vocational upper secondary education.</p>	<p>Teaching staff at vocational institutions and polytechnics are required to have:</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>The former is provided by general upper secondary schools and the latter by vocational institutions. The objective of vocational upper secondary education and training is to provide the students with the knowledge and skills necessary for acquiring vocational skills and with the capabilities to find employment or to become self-employed.</p>	<ul style="list-style-type: none"> - work experience in the field of at least three years (not required of the teachers of core subjects); - completed pedagogical studies of at least 35 credits; and - either 1) an appropriate higher academic degree; 2) an appropriate polytechnic degree; or 3) the highest possible qualification in their own occupational field.
France	<p>The vocational <i>Lycées</i> and the agricultural vocational <i>Lycées</i>, allow young people to continue their general education and to benefit from vocational training leading to a first qualification certificate. Preparation for these certificates, which always includes a period of in-company training, can be organized along the lines of an apprenticeship, which is a form of alternating initial vocational training subject to an employment contract. It combines the acquisition of know-how in a firm with theoretical education in an apprentice training centre (<i>centre de formation d'apprentis</i> - CFA) and leads to a certificate of vocational or technological education or another recognized certificate.</p>	<p>Vocational <i>Lycée</i> teachers are generally <i>professeurs de Lycée professionnel</i> (PLP) recruited by competition, or sometimes, for general subjects, certified teachers.</p>
Germany	<p>The education available for 16- to 19-year-olds at upper secondary level includes:</p> <ul style="list-style-type: none"> – general education; – vocational education and training; – mixed general and vocational education. 	<p>Training for teaching careers in general education subjects at the upper secondary level or at <i>Gymnasien</i> is provided, as for all teaching careers, in two training phases (see 3A.4). The first phase usually comprises a nine semester (in an artistic subject area, sometimes 12-semester) study course comprising at least two subject areas including subject-oriented didactics. The course</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>Most young people attending the upper secondary level follow vocational education and training courses. In vocational education and training, pupils can gain an entitlement to proceed to a higher level within the education system alongside the vocational qualification. In this respect the <i>Mittlerer Schulabschluss</i> and the <i>Fachhochschulreife</i> are of primary importance. The purpose of such measures is to put vocational education on a par with general education.</p>	<p>includes at least one practical placement in a school lasting several weeks, and at least one didactic or subject-specific teaching placement.</p>
Greece	<p>An alternative to continuing studies at a post-compulsory level (upper Secondary Education) is provided by the Technical Vocational Education Schools (TEEs). The particular purpose of the technical vocational education schools (TEEs) is to provide technical and vocational knowledge, to transmit modern and specialised technical and professional knowledge and to create a professional consciousness so graduates will be sufficiently trained when joining the labour market, enabling them to contribute to the quantitative and qualitative development of production.</p>	<p>The TEE teachers are qualified after having studied for four years in University Faculties in their speciality. Technical Education Institute (TEI) graduates after studying in courses that last 3,5 – 4 years are entitled to be hired in Technical Vocational Education Schools (TEE). They teach subjects of technical nature and have attended pedagogic courses for one year at the Pedagogic Technical School (PATES), which a law of 2002 has renamed and transformed into Higher School of Pedagogic Technological Education (ASPAITE) and is included in the Technological Sector of Higher Education. They are also public servants. In workshop subjects of TEEs, graduates of lower Schools that have already been abolished can be hired as assistants. Compulsory in-service training for TEE teachers is organised in the same fashion as in Primary Education.</p>
Hungary	<p>One may define the area of VET in alternance as a professional training sector for clients that have no student/pupil status with the training institution. There</p>	<p>The legislation does not specify any minimum qualification requirements for being a teacher/tutor in this sector. The school-based continuing educational and</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	are a number of various types of short, medium and long-term vocational education and training programmes with a great variety of content.	adult training institutions (single structure schools, vocational and short term vocational schools etc.) normally employ registered and qualified teachers and the out-of-school public educational institutions also tend to be accredited both institutionally and content wise and require qualified teaching staff.
Ireland	<p>There are a number of training programmes, all designed to provide initial vocational training.</p> <p>These are:</p> <ul style="list-style-type: none"> - apprenticeship; - traineeship; - full-time specific skills training; - integrated education and training courses; - vocational training courses for early school leavers. 	<p>There is no national system for the pre-training or in-service of teachers, trainers and tutors employed in vocational and education and training. The majority employed in this sector have been recruited on the basis of a second level teaching qualification or trade or business qualification. However, significant work has been undertaken in this area by FAS, the National Training Authority both in the training of their trainers; in the registration of approved trainers and in leading the establishment of trainer's network. Individual universities have provided programmes for staff in the sector aimed at specific target groups (e.g. people with disabilities) and the Department of Education and Science has funded national Certificate and Diploma Programmes in the field of vocational education and training on an in-service basis, primarily for staff on YOUTHREACH, Senior Travelling Centres and Adult Literacy Services.</p>
Italy	Set up within the system of integrated higher education training is the system of higher-level technical education and training (IFTS). The system is designed to speed up the access of young people to the world of work and to retrain those who already have work experience. This is done through courses	As regards teachers, the only limit stipulated for IFTS courses is that 50% of them must come from industry. The remaining 50% can come from an academic or school background.

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	which are designed to provide young people and adults (employed or otherwise) with more specific cultural knowledge and in-depth and targeted technical and vocational training.	
Latvia	No specific programme within upper secondary education systems but as part of initial vocational training.	
Lithuania	Four options of vocational school (<i>profesinė mokykla</i>) training have been introduced since 1990/91. The first is aimed at young people who have not finished basic school. By undergoing this option, they may do so, and also acquire very simple qualifications. There are two types of teaching programmes, one lasting 2 years (when provision of only vocational education is offered), the other lasting 3 years (when provision of both vocational and general lower secondary education is offered). Those wishing to embark on the second option have to finish basic school. While pupils who attend this option obtain professional qualifications, essential economic training, and general cultural instruction, they are not awarded a secondary school certificate. Studies last for two years. The third option is aimed at those who have finished basic school. As a result of this option, they can acquire both professional qualifications and a secondary school certificate. Here, courses last for three years. Finally, the fourth option is aimed at those who have finished their upper secondary schooling but are not academically inclined, and prefer to be trained as	<p>Qualification requirements for teachers are determined by the Ministry of Education and Science, and they apply equally to teachers engaged in the initial VET and to the teachers engaged in labour market training. The general requirements are as follows:</p> <ul style="list-style-type: none"> - at least 3 years studies at a higher education school or college; - successful completion of the study programme of a specific subject; - teaching qualification. <p>A college diploma confers the right to work in an institution offering education not higher than lower secondary. A higher education diploma confers the right to work in all types of educational institutions. A person who has completed a non-pedagogical higher education or college-type study programme may be employed as a teacher only upon acquiring a qualification of a teacher. Pursuant to the Law on Education of the Republic of Lithuania, the graduates of vocational schools may also be engaged in VET institutions as vocational teachers, if</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>workers. Depending on the complexity of the prospective occupation, the duration of studies will be between one and two years. Initial vocational training institutions enrol pupils aged at least 14.</p>	<p>they possess an obligatory certificate of the minimal course in pedagogy and psychology. In fact, there are no trainers as such, with qualifications especially geared to vocational schools. Instead, the activity is performed by teachers of general education and vocational subjects respectively, as well as instructors, known as foremen, who help students acquire practical skills in firms</p>
<p>Luxembourg</p>	<p>The vocational branch constitutes an intermediate cycle in technical secondary education and provides apprenticeships that alternate between practical training in a company and academic education provided by a technical <i>lycée</i>. It covers a wide range of professions in the fields of industry, the crafts and commerce. The training generally lasts three years and leads to the certificate of technical and vocational proficiency (CATP). The vocational branch has provided apprenticeships at two levels since 1991. The first, which normally lasts two years, confers a partial vocational qualification that leads to a certificate of technical and vocational initiation (CITP). The second level confers holders of the CITP the additional qualification required to obtain a CATP. It is provided in the context of both the vocational regime and continuing vocational training. This two level apprenticeship programme is designed for young people who have difficulty learning theoretical subjects although they are able to learn practical vocational skills and aptitudes normally.</p>	<p>In addition to teachers in technical secondary education (who must all have received university training), there are also instructors of special subjects (such as <i>mercéologie</i> or in the paramedical field) (who must hold an academic qualification such as for a short course of higher education) and instructors of practical courses (who must hold a master craftsman's certificate). Some civil servants have also received practical pedagogical training in Luxembourg after completing initial training.</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
Malta	The Malta College of Arts, Science and Technology (MCAST), which falls under the Ministry of Education, provides technical/vocational post-compulsory secondary education.	The College employs 230 FTE teachers. Although some of the teachers will be progressively trained, many will have entered education and training with a business or industrial background. The College will deliver a variety of in-service training courses for staff to gain professional qualifications and investment in staff development is a priority for the College.
Netherlands	Secondary vocational education provides both theoretical instruction and practical training in preparation for the practice of a wide range of occupations for which a vocational qualification is necessary or useful.	For secondary vocational education graduates from other HBO (higher professional education) courses with a certificate of education and people educated to HBO level can be appointed, in addition to HBO teacher training graduates. The institution decides if a person has sufficient qualities to teach – if necessary with a complementary training. Persons can be appointed as teacher in vocational secondary education if they have other professional experience or training, provided they take complementary didactic training. Teachers are subject specialists.
Poland	Technikum schools (4-year technical secondary school) are institutions offering 4 years of full-time technical and vocational upper secondary education for students aged 16 to 20. It offers the Matura examination necessary for admission to higher education.	Upper secondary school teachers ought to have completed a university education (magister degree) or equivalent. The highest qualifications are held (school year 2002/03) by general secondary school teachers – 98.7% of those (full-time) teachers have completed higher education. In vocational schools, this percentage is lower, 95.7% in technical and vocational secondary schools and 78% in basic vocational schools.
Portugal	Vocational teaching is intended to respond to the needs of the job market at local and national level and	The vocational qualification of upper-secondary teachers, including those in professional, vocational or artistic

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>as such the courses given in each school should relate to the characteristics and necessity of the respective region. Vocational courses that are taught in vocational schools are regulated and recognised by the Ministry of Education. The training of skilled workers by vocational schools is an alternative to the regular teaching system for those whose immediate aim is entry into the job market. Courses at vocational schools also give access to higher education, particularly polytechnics, via the taking of national exams for regular education in specific subjects. There have been two types of training created for the path oriented towards the world of work: training and education courses and technology specialisation courses at post-secondary level.</p>	<p>education, can be obtained via degrees that give the appropriate scientific training in the respective teaching area and complemented by the appropriate pedagogy.</p>
Slovakia	<p>Vocational secondary schools prepare pupils for:</p> <p>a) trades and vocational activities corresponding to the particular branch of apprenticeship pursued. Studies last for two or three years and end with a final examination;</p> <p>b) certain more demanding trades and some technical-economic activities of an operational nature. Studies last for four years and end with a school leaving examination. Secondary vocational schools provide theoretical and practical courses to pupils and practical training and education outside classes. They may also provide purely theoretical teaching and out-of-school education or practical training and out-of-school education. Apprenticeship centres provide</p>	<p>Secondary school teachers are trained in various university faculties and other higher education institutions, depending on the nature of the particular subjects within their specialist teaching areas. The course takes five years and ends with a final state examination. Graduates of technical universities and other higher education institutions, not possessing the pedagogical training necessary to teach their specialised subject at secondary schools, may receive further training in the form of pedagogical-psychological education at technical universities. The system of in-service teacher education is the same as for primary school teachers.</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>vocational training for less demanding occupations to pupils who have completed compulsory school attendance at primary school for less than nine years or for pupils who did not succeed in completing the nine years of primary school. Training at the apprenticeship school ends with a final examination.</p>	
<p>Slovenia</p>	<p>Two basic aims are built into the curricula of technical education: preparation for professionally oriented higher education and basic knowledge to enter the labour market and to start work in industry, in trade or in service activities. Specific knowledge and practical experience are provided through a “probation” period after the pupils leave school. Students that successfully finished four years of education in secondary technical school takes vocational <i>matura</i> (<i>poklicna matura</i>) as a form of final exam.</p>	<p>The initial education of secondary school teachers is provided by 4-year university courses (students must complete a 4-year university course plus one year for the preparation of a thesis; the course therefore lasts 5 years). Courses for teachers of general academic subjects generally include two disciplines in parallel within a course (with the exception of science teachers in 4-year secondary schools who have to complete a one-discipline course). In addition to one or two disciplinary fields, the intending teachers acquire pedagogical, psychological and special didactic knowledge. Graduates are awarded a certificate and the title of “Teacher of one or two subjects”. Initial training is not organised as an extra for teachers of technical-theoretical and vocational practical subjects. After completing higher education (non-teacher) studies and a minimum of 3 years of work experience, intending secondary teachers must follow a special postgraduate non-degree course for teaching in secondary school. This is also another way for unqualified teachers to enter the teaching profession. If other professionals wish to become secondary teachers and teach not only technical subjects but also general subjects at general and technical or vocational schools,</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
		they can obtain the teaching qualification by passing a special post-graduate non-degree programme.
Spain	Initial vocational training in Spain is divided into vocational upper secondary education (intermediate-level vocational training), and specific advanced vocational training and specialised art education. Specific intermediate-level vocational training is open to pupils over 16 years of age. The secondary education certificate is required for enrolment in this intermediate-level vocational training course. However, pupils may also enrol even though they do not meet the established academic requirements, provided they are able to prove through a special test that they have the required aptitude to benefit from the course. The main objectives of this level are to ensure that pupils acquire the vocational skills which are characteristic of each qualification, that they understand basic legislation including their right and obligations and that they acquire the knowledge and skills required to work safely, with self-confidence and professional maturity.	The teachers who work in vocational training are subject specialists and are qualified to teach specific vocational training and, in certain cases, some subjects of ESO and <i>Bachillerato</i> . The qualifications required of these teachers are the <i>diplomado</i> , the <i>ingeniero técnico</i> or the <i>arquitecto técnico</i> . These qualifications are obtained in faculties, <i>escuelas técnicas superiores</i> , <i>escuelas politécnicas superiores</i> and <i>escuelas universitarias politécnicas</i> . Those who do not have a <i>Maestro</i> diploma and those who do not have a <i>Licenciado</i> degree in education must have a specialised educational training diploma. Their conditions of service and in-service training are the same as those of teachers in mainstream secondary education.
Sweden	General and vocational education are integrated in the upper secondary school and all national and specially designed programmes give general eligibility for entrance to higher education. There are seventeen nationally determined programmes. All of these provide a broad based general education and give general eligibility for entrance to higher education. They also prepare for working life. All programmes	Teachers of general subjects have a university degree in two or three subjects. They have also received one year's training in the theory and practice of teaching, subsequent to their subject studies. The minimum requirements for the award of a Master of Education for the Upper Secondary School are four years' study with 2 years for the main subject, 1½ years for other subjects (2 years for modern languages, Swedish, civics or artistic-

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>contain the same eight core subjects. In addition, pupils take subjects, which are specific to their programmes. Out of the 17 programmes, 14 have a more vocational orientation and prepare pupils for the world of work.</p>	<p>practical subjects) and one year's pedagogical training. Upper secondary schools also employ specialist teachers with a doctoral degree or similar qualification. All teachers are municipal employees and they may work full-time as well as part-time. From 1 July 2001, an integrated, teaching degree has been introduced, incorporating eight of the previous teaching degrees (from preschool to upper secondary school). The degree in Education at Upper Secondary School has been replaced by a teaching degree for teaching in the higher levels of the compulsory school and upper secondary school. Vocational teaching in upper secondary schools is provided by specialist teachers with advanced economic or technical qualifications or by vocational teachers who have completed vocational training and studies of vocational theory. In addition, they have gained a long professional experience and undergone teacher training at universities or university colleges. The municipalities, which are the employers of teachers, also have the responsibility for the in-service training of teachers. Teachers in independent schools are employed by the school.</p>
England and Wales	<p>Although traditionally offered in further education institutions, vocational courses are increasingly being made available in schools.</p>	
Bulgaria	<p>Important changes within the system of vocational secondary education are expected with the adoption of the new Law on Vocational Education and Training (1999 and amendments). Vocational schools can be</p>	<p>The teachers providing general instruction and theory classes acquire their basic qualifications in higher education institutions with a period of study of 4 to 5 years (8 to 10 semesters). Teacher qualification can be</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	<p>either state schools or private schools. Both types are regulated by the state. The state plays a leading role in planning, financing, organizing and monitoring the quality of education. In the transition to a market economy, the role of social partners has become apparent. The professional organizations state their requirements as regards staff training, they express their opinion regarding new professions and participate in the drafting of state requirements on the content of training and in improving the conditions for vocational training. A special system has been developed for employer participation in the assessment of the pupil's professional competence.</p>	<p>furthered at the three Teacher Training Institutes, as well as in the free faculties of the technical, economic, agricultural, pedagogical and other higher education institutions. The corresponding higher education institutions and the Teacher Training Institutes are responsible for drafting the school curricula and syllabuses for in-service teacher training. In-service teacher training aims to provide pedagogical qualification (for teachers who are engineers, economists, agronomists, etc.) or class-qualification (levels I or II).</p>
Romania	<p>The main objectives of training in vocational school are as follows:</p> <ul style="list-style-type: none"> - to respond to the demands coming from the labour-market; - to promote personal development; - to transmit knowledge on environmental protection; - to develop entrepreneurial skills. 	<p>In vocational schools, all subjects are taught by specialist teachers. Teachers must have a qualification similar to that of teachers in secondary schools. Those who have studied at university or polytechnic can teach only if they have attended the optional classes in psychology and education. Instructors organise and co-ordinate practical activities. They must hold at least a leaving certificate of post-high school education. The condition for their acceptance as teachers is to have attended a teacher-training course and to possess knowledge, skills and on-the-job experience.</p>
Liechtenstein	<p>Basic vocational training is provided by so-called technical schools (<i>Fachschulen</i>), where pupils gain vocational knowledge and complete various</p>	<p>Lessons in general subjects at vocational schools are mainly taught by trained secondary teachers, whilst vocational subjects are taught by designated specialists.</p>

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	placements during and outside school hours.	Full-time teachers also have to complete a one-year methodology and didactics training course. Full-time and part-time employees are required to attend continuing training courses.
Iceland	Vocational education <i>starfsnám</i> is organised in different ways depending on subjects, but in most cases it takes place both in the school and in the workplace. The organisation of courses varies as well as their length, which may last from one semester to five years. Schools that offer vocational education are comprehensive schools, industrial-vocational schools and specialised vocational schools. Many forms of vocational education give the students legal certification for certain types of employment. This applies to studies in the certified trades, and also for example in the training of auxiliary nurses and in the course that qualifies sea captains. Industrial-vocational schools <i>iðnskólar</i> , offer theoretical and practical programmes of study in the certified and some non-certified trades. Specialised vocational schools <i>sérskólar</i> offer specialised programmes of study as preparation for specialised employment.	Teachers of vocational subjects or other technical subjects must be qualified in the field in which they teach or be master craftsmen in the trade in question and have a minimum of two years' experience working in the trade. In addition, they are required to have completed certain courses in education and instructional methodology.
Norway	Upper secondary education includes general and vocational education at upper secondary schools, vocational training at vocational colleges and apprenticeship training. Vocational colleges, whose history is different from that of upper secondary schools, are now administered as a part of upper secondary education. They have traditionally offered	Teachers in upper secondary schools are subject specialists; this applies to both the general (academic) and vocational areas of study. Vocational teachers in schools are required to have a full trade qualification, a minimum period of work experience, one year of additional education in their field and they should have

Country	Upper vocational secondary education	Teachers/Trainers in upper secondary vocational education (necessary qualifications and teacher training)
	further vocational qualifications within a broad range of trades, and have acted as a stepping stone to higher education. They now offer 2-year courses to pupils who already have trade skills, practical experience in employment, and/or upper secondary education.	completed a one-year teaching course.

Source: Eurydice, Structures of education, vocational training and adult education systems in Europe, 2003 Edition. No information is available for Croatia, Turkey and FYR of Macedonia.

2. Characteristics of initial vocational training and necessary requirements for trainers

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
Austria	In addition to training at intermediate and upper secondary technical and vocational schools, a considerable amount of initial vocational training is provided by apprenticeship training schemes ('dual system'). Apprenticeship training has always been characterised by the dual system of training in business and industry, combined with a theoretical course at a compulsory vocational school. Whilst apprenticeship is based on an apprenticeship contract under labour law, apprentices are still considered to be in compulsory education because they must enrol in a part-time vocational school.	Teachers of general education, business studies and theoretical subjects must have the matriculation examination certificate and two years of professional experience. Vocational school teachers teaching practical subjects require a master craftsman's examination as a professional qualification or an equivalent certificate and six years of relevant professional experience.
Belgium French Community	Initial vocational training is integrated into upper secondary education.	
Belgium Flemish Community	In the framework of compulsory education, the training of young people under 18 years of age comes under two types of measures conforming to requirements for part-time compulsory schooling up to age 18: - part-time education; with the possibility of industrial apprenticeship; - apprenticeship in the SME (Small and Medium Enterprises) sector;	

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>- limited curriculum experimental secondary education.</p>	
Belgium German Community	<p>At the end of full-time compulsory education, all young people up to the age of 18 are subject to part-time compulsory education if they choose not to continue at the upper level(s) of full-time secondary education. They can choose between the following two recognised types of training in the context of part-time compulsory education:</p> <ul style="list-style-type: none"> - academic training in part-time education centres; - alternating vocational training (apprenticeship in SME training centres and firms). <p>The centres for part-time education are linked to secondary schools providing full-time technical and/or secondary vocational education.</p>	<p>Teachers from the full-time school system provide the general portion of the training and experienced master craftsmen lead the vocational portion. They are employed by the organisers of the particular centre and are expected but not required to participate in continuing training measures.</p>
Cyprus	<p>The Apprenticeship Scheme is mainly directed toward those students who do not wish to continue their studies within the scope of the formal educational system when they finish the third year of Gymnasium. It lasts for two years and provides Practical and Theoretical Training alternately. Practical Training takes place in industry, where the trainees are remunerated for their work, for three days per week. Theoretical Training is provided at Technical and Vocational Schools for two days per week.</p>	<p>The teaching staff of Technical and Vocational Schools can be classified into two main groups: teachers of general subjects and educators/technologists of technical and vocational subjects.</p> <p>Technical and Vocational Schools are staffed with teachers of general subjects and teachers of technical and vocational subjects, i.e. educators and technologists. A condition for appointment to the educational service is the successful completion of a 26-week pre-service pedagogical training course at the Cyprus Pedagogical Institute. In addition to the compulsory pre-service pedagogical training, the necessity for continuous renewal of knowledge, so that the new trends</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
		and developments in the fields of education, economy and society can be evaluated and taken advantage of, and also the systematic development of the Technical and Vocational School teaching staff in order to be in a position to offer quality education, call for organized and continuing training of educators and technologists. As a result, a training plan for the systematic development of the Technical and Vocational School teaching staff has been introduced through scholarships and exchanges of educators and technologists across other countries.
Czech Republic	Initial vocational training is integrated into upper secondary education.	
Denmark	In Denmark, initial vocational training covers a wide range of education and training programmes that aim to train young people for a trade or a profession. Vocational education and training is provided by approximately 110 colleges distributed on an almost equal number of business and technical colleges, 5 combined colleges with both technical and commercial departments and a number of specialised colleges, e.g. a hairdresser's school, a transport school and a meat trade school. These colleges receive about 41% of a youth year group. The programmes cater for the 16-19/20-year olds. All programmes are organised as 'sandwich' training courses in which theoretical and practical education at a vocational college alternates with practical training in a company. There are two routes into vocational education and training (EUD), namely the school-route and the practical training-route. The two	<p>The teacher training for teachers at vocational colleges in Denmark is basically a pedagogical course supplementing the training, technical skills and practical work experience of skilled workers who want to become teachers. Teachers of general subjects must have qualifications corresponding to those required at upper secondary education level. Initial vocational teacher training takes place at the Danish Institute for the Educational Training of Vocational Teachers (<i>Danmarks Erhvervspædagogiske Læreruddannelse - DEL</i>) and is of a total duration of 18 weeks of fulltime work. The theoretical part lasts 14 weeks and the practical part 4 weeks. The course is organised as a part-time study and normally runs for 12 months.</p> <p>Teachers are recruited directly by the vocational colleges and start the pedagogical training course, when they have been employed. The pedagogical training course alternates between education in the institution and work placement,</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	admission routes meet at the start of the second school period, after which the students/trainees receive the same education and training. No matter whether the students choose the school route or start with a practical training period in a company, the duration and content of training are the same.	and much of the training takes place at the trainee's school as on-the-job training supervised by a tutor. The development of teacher qualifications is seen as a vital part of a competence building strategy in most of the schools, and vocational teachers are obliged to maintain and upgrade their qualifications, but not necessarily through formal training courses. Informal training is considered as essential as participation in courses or other kinds of formal training. There are no formal requirements for the training of trainers providing on-the-job instruction in companies. However, the trend is towards qualifying trainers through either short in-company training courses or coaching courses at vocational colleges. In particular larger companies and public organisations have in recent years implemented a deliberate training strategy for trainers.
Estonia	Initial vocational training is integrated into upper secondary education.	
Finland	All upper secondary level vocational qualifications available at educational institutions may also be obtained through apprenticeship training. Apprenticeship training is also organised for some occupations for which there is no institutional education.	The personnel in companies must be qualified in terms of vocational skills, education and work experience in order to be assigned as responsible instructors of apprentices.
France	In France, there are almost 1090 apprentice training centres; of these, about 900 lead to diplomas awarded by the Ministry of National Education and 190 to diplomas recognized by the Ministry of Agriculture.	The profession and employment conditions of trainers vary widely. The recent development of specific trade training certificates illustrates the move towards the professionalization of training staff. The tutor (the apprentice's supervisor) may be the head of a company or an employee. This person must have a certificate at least

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
		<p>equivalent to that for which the apprentice is training and have at least three years of professional experience. Any person without a proper certificate must have at least five years of professional experience and a minimum level of qualification. One or more companies may be involved in the contract in order to allow the apprentice to learn technology and equipment not used by the tutor. The 1993 law establishes the title of qualified master of apprenticeship, which is awarded to tutors who are able to prove that they have five years of professional experience, two years of experience as a tutor and the required teaching and supervision skills. Courses are generally provided by Chambers of Commerce and Industry and Trade organizations.</p>
Germany	<p>Following full-time compulsory education, two thirds of young people leaving general education schools in Germany go on to gain vocational qualifications in a vocational training programme – normally lasting three years – in the dual system. The system is described as a ‘dual’ system because training is carried out in two places of learning, i.e. at the workplace and in the <i>Berufsschule</i>. The aim of the dual system is to provide a broadly based basic vocational education and the necessary skills and knowledge required to practise an occupation in a properly structured course of training. Those successfully completing the training are entitled to practise their occupation as qualified employees in one of the state-recognised occupations for which formal training is required.</p>	<p>According to the Vocational Training Act (<i>Berufsbildungsgesetz</i>), only personally and professionally trained individuals can train trainees in businesses. The law requires all teachers to possess the necessary job-specific skills and knowledge as well as the relevant didactic knowledge and ability. Trainers must demonstrate their professional and pedagogical aptitude in a trainer aptitude examination (<i>Ausbildereignungsprüfung</i>). Courses and examination outlines are developed on the basis of framework plans common to the entire Federation. The examination is taken before examination boards comprising representatives of the authorities responsible for dual vocational training.</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
Greece	National System of Vocational Education and Training (ESEEK) provides introductory vocational training. The ESEEK follows up the changing needs of the labour market at a national and local level, along with the scientific and technological developments; it evolves and develops in cooperation with the social partners, with all the public and private agencies, Greek and international and moreover with those of the European Union. The Labour Ministry through the Manpower Employment Organisation (OAED), directs the Technical Vocational Schools (such as the Apprenticeship Schools), but also the Vocational Training Centres (KEKs) whose standards and programmes are approved by the organisation for Vocational Education and Training (OEEK). Vocational Training, falling under the OEEK, is provided by the Vocational Training Institutes (IEK). IEKs do not fall under a specific level of education. There are Public and Private Vocational Training Institutes (IEKs) that are supervised by the OEEK. Today there are 132 Public IEKs and 65 Private IEKs all over Greece and the specialisations provided amount to 166.	IEK teachers-trainers come from the labour market and Higher and Secondary Education and are chosen on the grounds of their qualifications (pedagogic skills and labour experience). They are not permanently employed. Under the 2nd Community Support Framework an in-service training programme for public IEK teachers-trainers has been applied.
Hungary	Initial vocational training is integrated into upper secondary education.	
Ireland	Initial vocational training is an integral part of upper secondary education.	
Italy	The initial training system provides for the following types of intervention:	The minimum requirement for trainers in the contract currently in force is the upper secondary school leaving

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>- basic or first-level vocational training for young people who have completed the first cycle of studies. This type is increasingly characterised by forms of interaction/integration with vocational education.</p> <p>- second-level training for young people who have a diploma or a degree.</p> <p>In addition to these two full-time courses of training, the initial vocational training system also includes training courses for young people who have been recruited under the terms of apprenticeship contracts.</p>	<p>certificate. Recruitment is based on calls for tender and selection. The responsibility for the training of trainers is vested in the regions, and the situation varies from region to region.</p>
Latvia	<p>The current system of vocational education in Latvia is based on the pre-1991 network of institutions adapted in accordance with the 1991 Education Act. This network of small establishments in terms of their enrolment is itself fairly large, comprising 128 institutions in all, 36% of them in Riga, and the others in rural districts elsewhere. Most of them are directly run by central government, although the creation of private and local authority vocational education institutions has grown in recent years. Vocational education is geared to some 320 professions and areas of specialisation. Admission to courses in institutions for professional education is possible for those who have completed either compulsory or secondary education (lasting nine and 12 years respectively).</p>	<p>Teachers working in vocational education and training institutions are traditionally specialists with the appropriate special secondary or higher education in the field concerned. Most of them do not have a specific diploma qualifying them for teaching as such. In 1997/98, there were 5 430 educational and training staff in vocational education, 5 270 of whom were teachers. Until now, in Latvia, no higher education institutions have offered specialised training for teachers in vocational education and training, or provided courses for subject specialists wishing to teach in this sector. Various higher education institutions which train teachers offer courses in general education, educational psychology and philosophy, theoretical knowledge in the main subject or subjects and areas of specialisation, and didactics. However in the country as a whole, there is an acute need to draw up a special curriculum for the training of teachers in vocational education, enabling them to address its specific problems successfully. It is hoped this kind of study programme may be developed in cooperation with Denmark's Vocational</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
		Education and Training Teacher's College.
Lithuania	Initial vocational training is integrated into upper secondary education.	
Luxembourg	Initial vocational training is integrated into upper secondary education.	
Malta	Students following technical/vocational post-compulsory secondary education are eligible to enrol in apprenticeship schemes. These schemes are the Technician Apprenticeship Scheme (TAS) and the Extended Skills Training Scheme (ESTS). Vocational courses are linked with industry through the two apprenticeship schemes. These schemes are intended largely for those who have just completed compulsory education (16-year olds. Older trainees are accepted on condition that they complete their training by their 25th birthday.	Module lecturers are assigned to modules depending on their teaching skills. A number of lecturers are employed from the hospitality and tourism industry and take part in an in-house staff development programme. The University of Malta, at the request of the Institute ran a Teaching Certificate programme for assistant lecturers and instructors. During the current school year, the Institute intends to offer the same course to newly recruited academic staff. Academic personnel are generally subject specialists and the majority are employed on a full-time basis, with a number of specialist staff employed on a part-time basis.
Netherlands	Initial vocational training is integrated into upper secondary education.	
Poland	There are two forms of vocational education and training in alternance: a) The most popular form is based on an employment contract between an employer and a young worker. The employer is responsible for the organisation of training. The practical training is organised either at the employers' enterprise or, if the employers cannot	Practical classes carried out at the employer's premises are taught either by teachers or practical vocational training instructors. In both cases pedagogical qualifications as well as specialist knowledge in the given area are required. Qualifications required in the case of teachers are governed by separate legislation. For employment as an instructor the following qualifications are required:

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>assure suitable conditions for such training, at the Continuing Education Centre, Practical Training Centre, at a school farm, school workshop, school lab or at an individual farm. The training is implemented on the basis of a contract concluded between the employer and a particular training institution.</p> <p>b) School based form of training which can be considered as training in alternance in the case when practical training takes place outside school, at the employer's place and is based on a contract between the employer and the school head. In this case the school is responsible for the organisation of training.</p>	<ul style="list-style-type: none"> - minimum a title of "master" in the given vocational area and pedagogical qualifications (either teaching qualifications or a completed pedagogical course organised according to the standards defined by the kurator); - in the case when the instructor has pedagogical qualifications and no title of "master" – the completion of vocational secondary school, as well as a professional title or a title of a skilled worker in the relevant area, together with a suitable professional experience; - the instructor can also hold the professional titles at the higher education level and present a suitable professional experience.
Portugal	<p>Apprenticeship system courses are aimed at young people of either sex, who have completed the 1st, 2nd and 3rd cycles of compulsory education or upper-secondary education. They aim to qualify candidates trying to get their first job, who have reached the age limit of compulsory schooling (preferably not over 25) and this should ease their integration into working life via training profiles that include three main parts: reinforcing academic, personal, social and relational competencies; acquiring knowledge in scientific/technological areas; and solid experience in companies. Training has an alternating structure (which means it attempts to be both practical and theoretical and in the practical domain includes an increasing amount of training in a work context over time), within a broad spectrum of professional areas and gives a double school and vocational certificate. This is done from different degrees of access in terms</p>	<p>For those trainers already in the market special access conditions have already been considered: they have to attend a pedagogic training course of 60 hours or have 180 hours of professional experience. This CAP lasts for 2 years and its renewal requires 60 hours of updated pedagogic training and 120 hours of training experience. Working as a trainer requires psycho-social preparation, scientific, technical, technological and practical training, which implies the possession of qualifications that are of the same or higher exit-level than the trainees. It also demands pedagogic preparation that is verified by the Trainer's Pedagogic Aptitude Certificate.</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	of levels of schooling and qualifications.	
Slovakia	Initial vocational training is integrated into upper secondary education.	
Slovenia	<p>Initial vocational training has not been completed with the reform in 1996 yet. In 1997-1998 it comprises: programmes of short-term vocational education (2-and-half year programmes), secondary vocational education (3-year programmes), technical education (4-year programmes), vocational technical education (3+2-year and differential programmes), post-secondary non-tertiary vocational courses (up to 1 year) and post-secondary vocational education (2-year post-secondary vocational colleges).</p> <p>Two-and-half year short-term vocational education courses and three-year vocational education courses provide opportunities for the individual application of knowledge in various technological fields and increase work skills for employment and on-the-job training. Two-and-a-half year courses provide education for less demanding occupations. For those who have finished successfully only 6 years of elementary school, they also provide knowledge at the level of the 7th and 8th year of elementary school.</p> <p>A transition possibility from general education to vocational education is available in the form of post-secondary non-tertiary vocational courses. These courses are designed for graduates of <i>gimnazija</i> who wish to enter the labour market or continue professionally oriented higher education. They take</p>	<p>Teachers in public vocational and technical schools are: teachers of general and special theoretical subjects, instructors of practical training and skills, master craftsmen (offering practical training to apprentices). The same qualification requirements, status and INSET obligations for teachers of general and special theoretical subjects are in force as for the general education. Instructors of practical training must possess at least secondary school degree in the appropriate field, three-year work experience and pedagogical qualifications. Master craftsmen must possess a master craftsman's certification examination.</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>six months to one year, and end with a final exam. Students get a technical-vocational qualification. The implementation of these courses started on pilot bases in 1996-1997. Another innovation in the VET system are master craft, foremen and managerial preparatory courses and examinations which started in 1998.</p>	
Spain	<p>The <i>programas de garantía social</i> (social guarantee programmes) are an alternative means of enabling adults who have left the education system with no qualifications to become reintegrated into society and education. These programmes are financed and regulated by the Ministry of Education, Culture and Sport or the Autonomous Communities responsible for education. Sometimes the local administration takes some responsibility for these programmes. Social guarantee programmes are developed in secondary education centres, art colleges and adult education centres. Special social guarantee programmes are developed in special centres. The objective of these programmes is to provide basic and vocational education for pupils between 16 and 21 years of age who left the education system with no qualifications, so they can be integrated into education or the world of work.</p>	<p>The professional profile of the teaching staff varies according to the occupation for which the students are being trained and the characteristics of the work which is to be done. For that reason, one comes across trainers with a relatively low educational level but with considerable professional experience and impressive job qualifications, as is the case in some parts of the construction industry. In other occupations, there is a high level of specialised vocational training and a wide range of intermediate-level and high-level university graduates. Generally speaking, the theoretical part of the training is provided by teaching staff with a high educational level, while in some cases qualified professionals with an intermediate or low educational level are in charge of the practical part.</p>
Sweden	<p>Initial vocational training is integrated into upper secondary education.</p>	
England and Wales	<p>Many large employers offer traineeships to 18-year-old school-leavers. Trainees usually follow an</p>	<p>Previously, there were few if any requirements for trainers and other VET teachers to have formal training or hold</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>approved course of study for a National Vocational Qualification (NVQ) or a qualification approved by a professional institute. The Advanced Modern Apprenticeship initiative was introduced in 1995 (known then as Modern Apprenticeships) to provide a high-quality work-based route to NVQ level 3 (see 3B.3), and to provide the broader skills and qualifications needed by industry and employers. Foundation Modern Apprenticeships, formerly known as National Traineeships, offer similar opportunities leading to a qualification at NVQ level two. Modern Apprenticeships are intended largely for school leavers aged 16, but they are also open to more mature trainees who are able to complete their training before the age of 25.</p>	<p>qualifications to teach, unless they worked in the maintained school sector. The growth of certificated, state-validated VET qualifications and an emphasis on pedagogy (training the trainers) is now leading to recognition and requirements for trainers to be properly trained, although the situation varies by sector.</p>
Northern Ireland	<p>In Northern Ireland, the organisation of initial vocational training differs in some respects from that in England and Wales. Further education colleges provide full- and part-time courses of vocational education and training to students over compulsory school age (16 years). Students may choose from a wide range of courses which lead to nationally recognised qualifications.</p>	<p>No information was found.</p>
Scotland	<p>There are a range of Government funded national training programmes which are managed and delivered by Scottish Enterprise (SEn) and Highlands and Islands Enterprise (HIE) through their networks of Local Enterprise Companies (LECs).</p>	<p>No specific information was found.</p>
Bulgaria	<p>Vocational education and training is provided through</p>	<p>The teachers on theory in the vocational schools acquire</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>sandwich-type training. Particular apprenticeship is not a common practice in Bulgaria. The apprenticeship system is under the responsibility of the employers and is regulated by the Labour Code. The theoretical and practical part of the apprenticeship is the responsibility of the employers. The training is provided in the company's training centres or in the schools of the formal vocational training under the request of employers.</p>	<p>their basic qualification at higher institutes with duration of studies equal to 4 – 5 years. The trainers on practice training acquire their basic qualification at professional colleges within the system of higher education with duration of studies equal to 3 years (6 semesters). The principal under a contract of labour on permanent posts employs all teachers with 18 to 24 academic hours per week. Teacher qualification may be promoted at the three Institutes for Teachers Training as well as at the free faculties of the technical, economic, agricultural, pedagogical and other higher education institutions. The promotion of teacher qualification aims the acquisition of pedagogical qualification (for teachers who are engineers, economists, agronomists, etc.) or the acquisition of class qualification (level II or I). 2,255 teachers are acknowledged to be first or second class qualified and of these, 374 of them have a first class qualification and 1,881 have a second class qualification.</p>
Romania	<p>Apprenticeship schools offer vocational education and training provided through sandwich type-courses. Generally, apprenticeship schools are attached to a vocational school or to combined group of schools, offering full-time and part-time training.</p>	<p>At apprenticeship schools, the teaching staff must have a qualification similar to that of teaching staff at vocational secondary schools. The teachers' status and their in-service training are the same for the whole pre-university education.</p>
Liechtenstein	<p>In terms of basic training (apprenticeships), vocational training in Liechtenstein has for decades been based on the dual/three-way system. The 'dual' system involves training at a training company and vocational school where as three-way (trial) training also involves a so-called introductory course. Since Liechtenstein has no vocational schools, it is linked to the Swiss</p>	<p>Lessons in general subjects at vocational schools are mainly taught by trained secondary teachers, whilst vocational subjects are taught by designated specialists. Full-time teachers also have to complete a one-year methodology and didactics training course. Full-time and part-time employees are required to attend continuing training courses.</p>

Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>education system. Young people resident in Liechtenstein almost always complete their basic vocational training under the regulations applying to Swiss education. Although the percentage of pupils attending the <i>Gymnasium</i> has increased sharply in recent years, each year a large number of school leavers start a two to four-year apprenticeship. Competitive training companies from industry, business, trade, agriculture, forestry, domestic science, services and administration provide attractive training opportunities in around 100 careers. In addition to the practical training received in-house from the training company, trainees also attend a vocational school. The lower-level apprenticeship or practical vocational training was specifically created with less academic young people in mind. Non-German speaking young people can take a pre-apprenticeship year, which mainly focuses on improving the pupil's German in preparation for training. More academic trainees can complete the <i>Berufsmatura</i> (vocational school leaving certificate) alongside work, which gives them entry into advanced vocational schools (<i>Fachhochschule</i>) or universities without having to sit an exam. After completing their apprenticeship, young professionals can take a <i>Berufsmatura</i> alongside work at the Liechtenstein advanced-level vocational school.</p>	
Iceland	Initial vocational education can be divided into two main categories: vocational education and training which confers legally certified qualifications, and	Workplaces have to receive an approval from the Ministry of Education, Science and Culture to be able to accept apprentices for on-the-job training or on apprenticeship

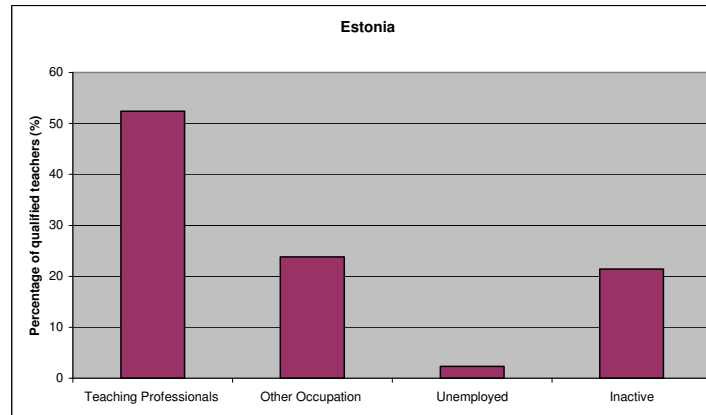
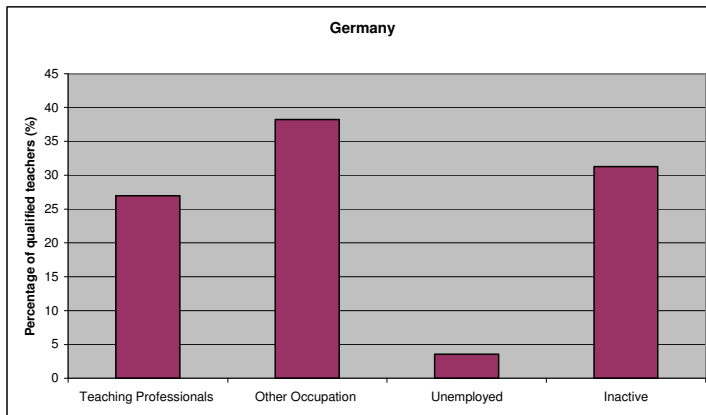
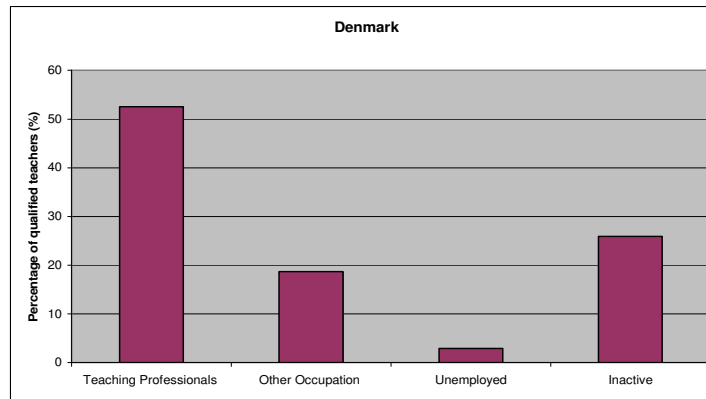
Country	Initial vocational training	Trainers in initial vocational training systems (necessary qualifications and teacher training)
	<p>education which does not lead to certified qualifications. Vocational training conferring certified qualifications comprises the following: 1) study in the certified trades; 2) study within the health care system; 3) study for officers of air and sea transportation vehicles; 4) study for law enforcement officers. A regulation on apprenticeship agreements and on-the-job training, issued by the Ministry of Education, Science and Culture provides for the format, confirmation and registration of apprenticeship and on-the-job training contracts, as well as for the termination of contracts and handling of disputes which may arise concerning the implementation of the contract. A special on-the-job training contract for workplace instruction is concluded between a school and workplace or an apprenticeship contract between the student and the employer. An apprenticeship contract is signed at the commencement of workplace instruction and confirmed within one month. It specifies the trial period and duration of the contract.</p>	<p>contracts. This approval is among other things based on the number of qualified trainers at the workplace. In the certified trades, a master craftsman is made responsible for the training of an apprentice. No rules are in force concerning the in-service training of trainers.</p>
Norway	Initial vocational training is integrated into upper secondary education.	

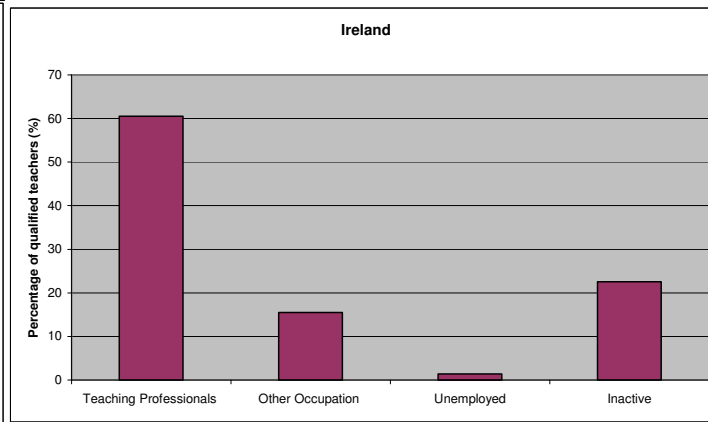
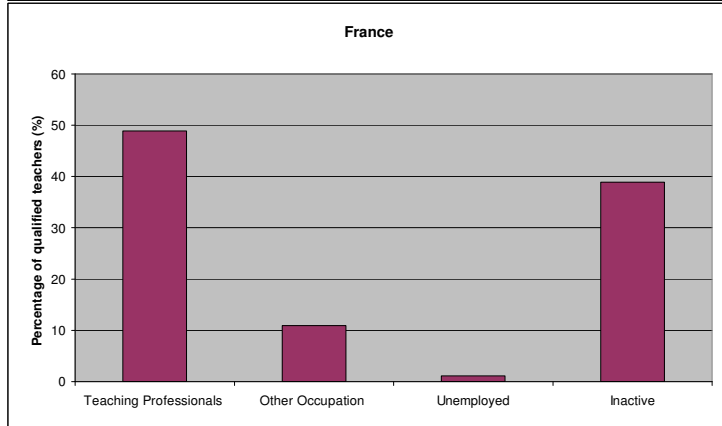
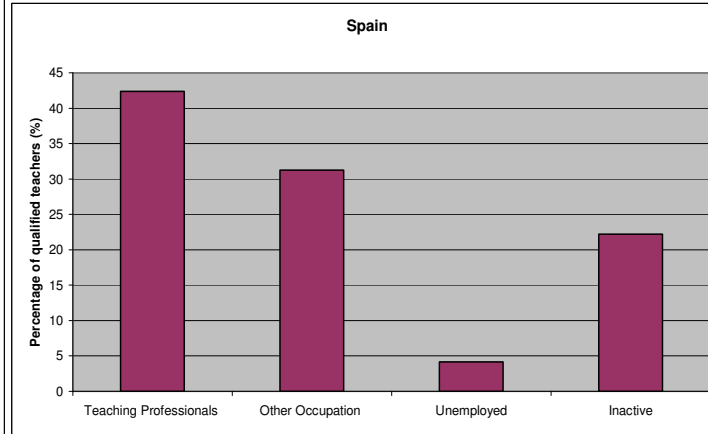
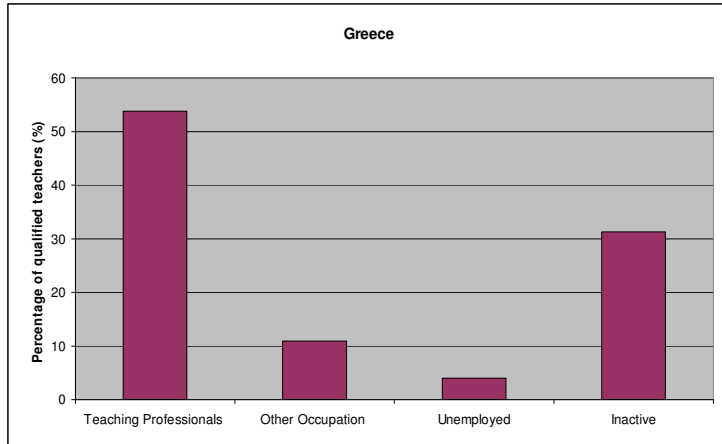
Source: Eurydice, Structures of education, vocational training and adult education systems in Europe, 2003 Edition. No information is available for Croatia, Turkey and FYR of Macedonia.

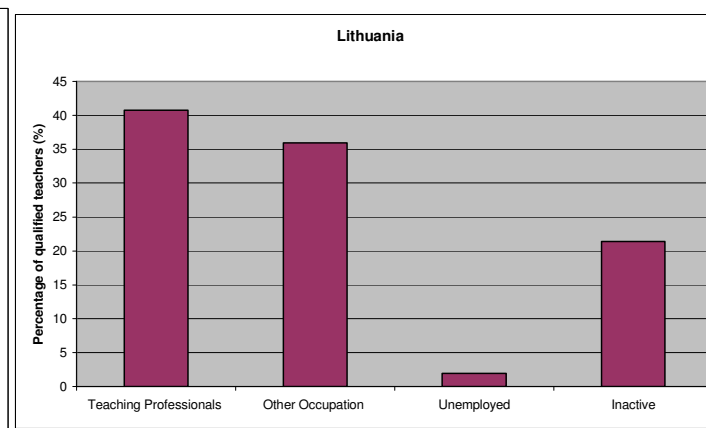
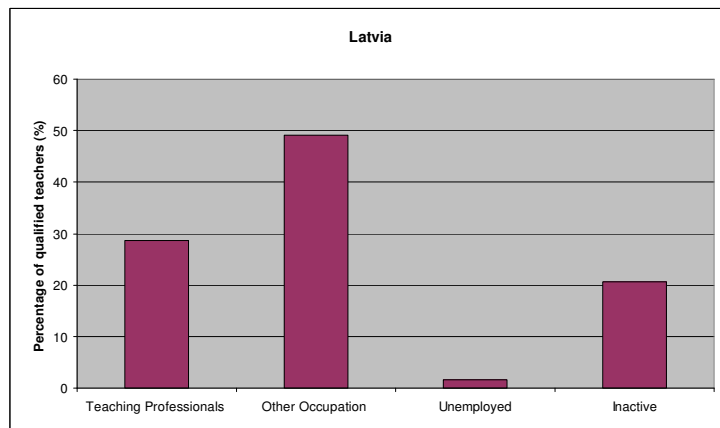
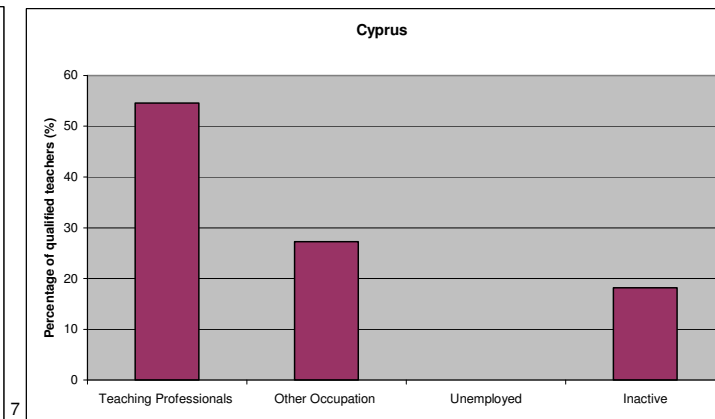
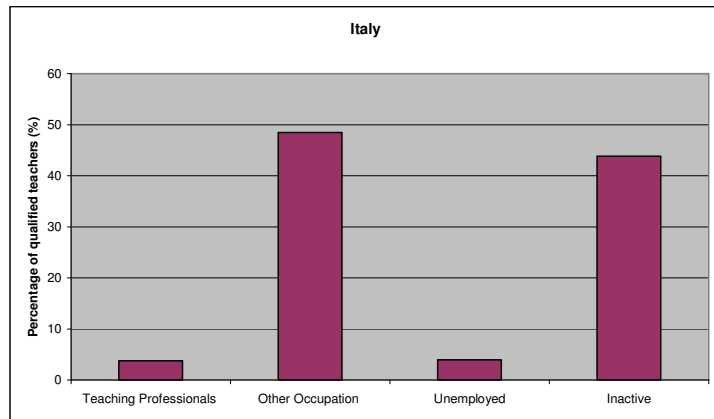
Annex D – Information relating to Section 5

1. Employment status of those who report having a teacher qualification as their highest qualification (LFS 2005)
2. Case Study UK: Returners' Courses Programme
3. Case Study: Rural Education Project in Romania
4. Gender distribution by employment status for those reporting teaching qualification as highest qualification

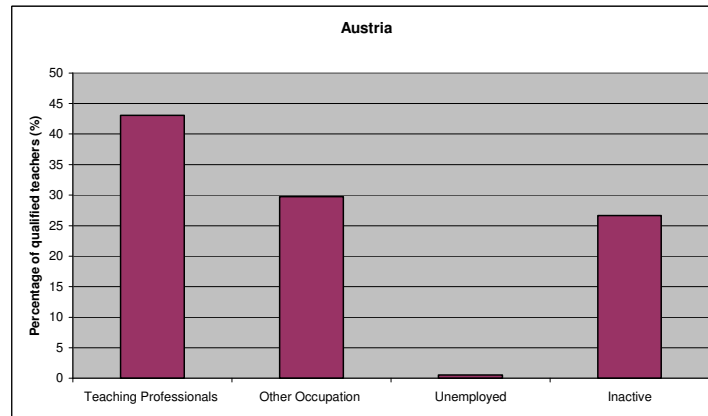
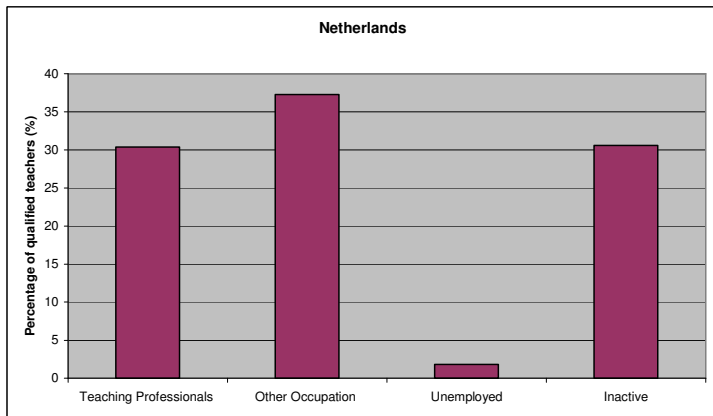
1. Employment status of those who report having a teacher qualification as their highest qualification (LFS 2005)

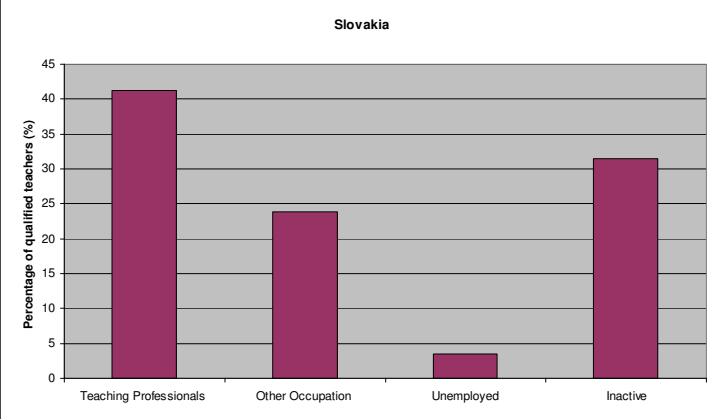
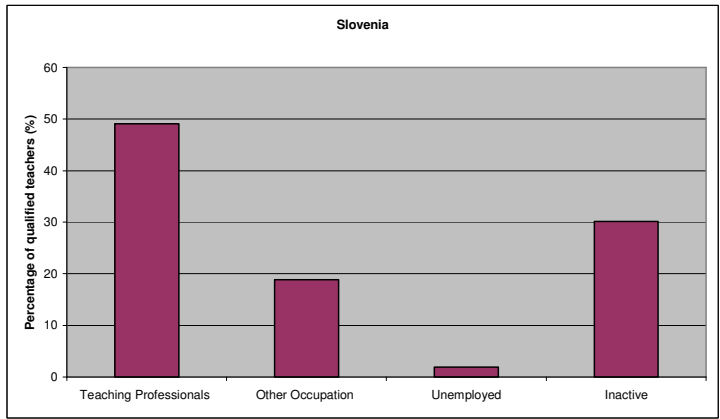
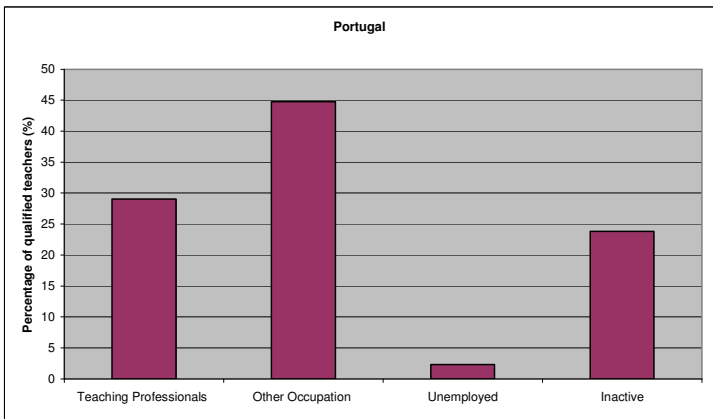
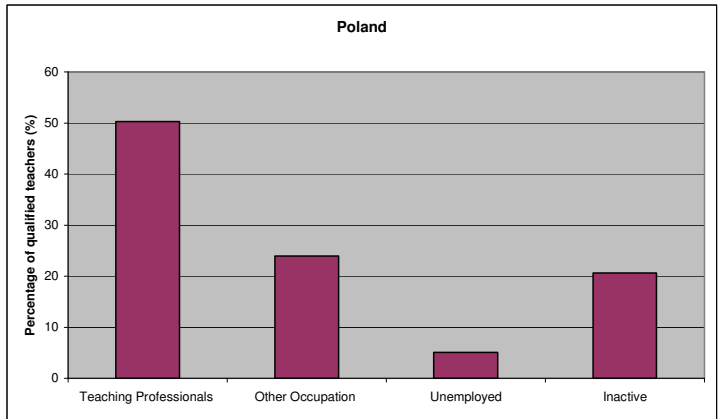


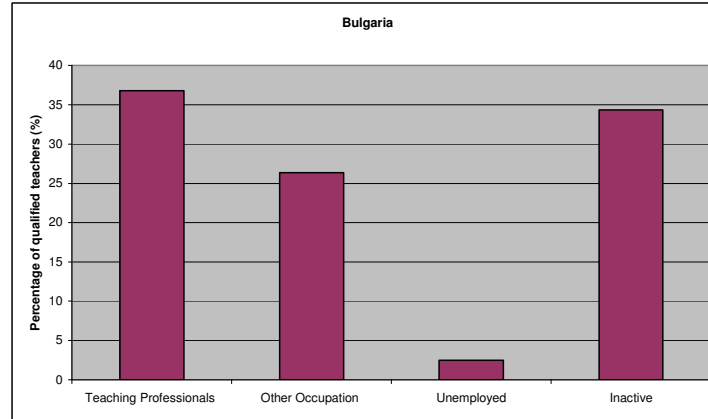
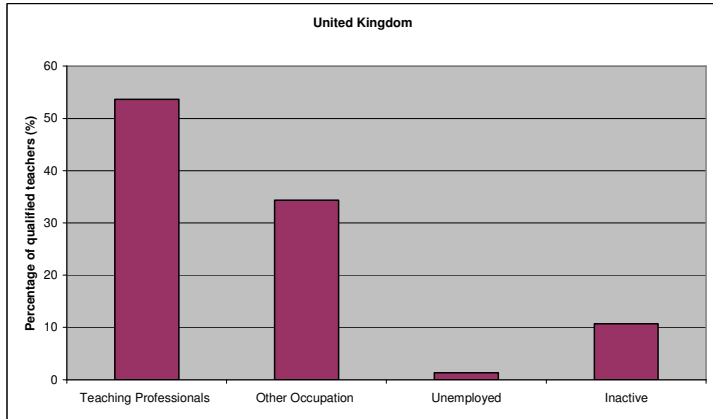
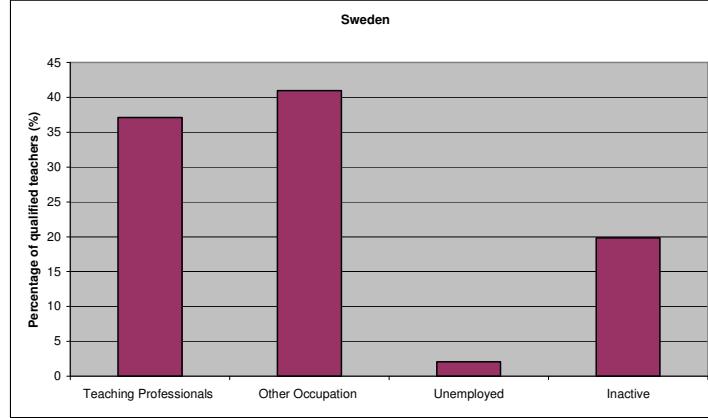
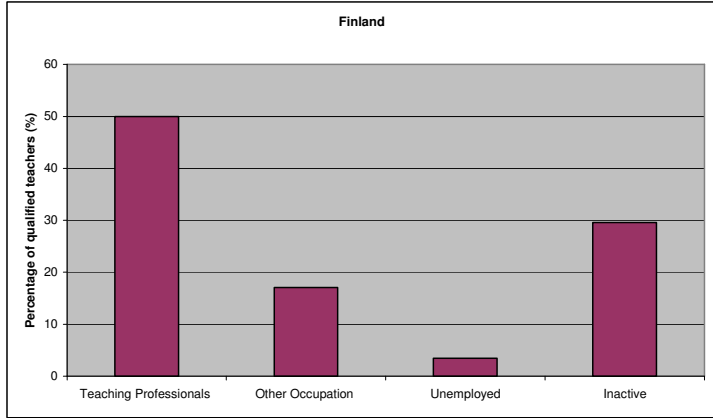


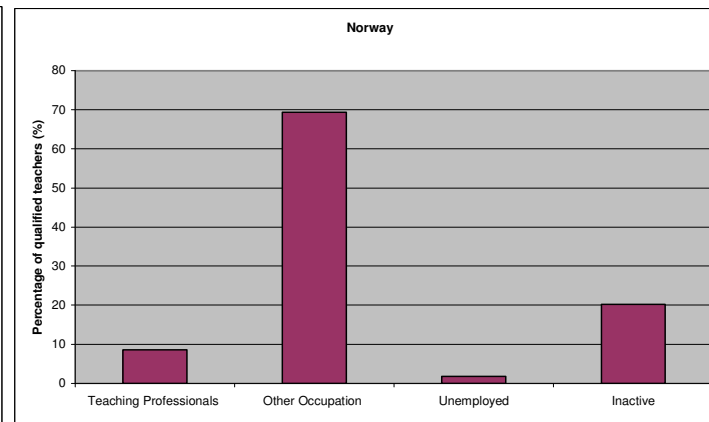
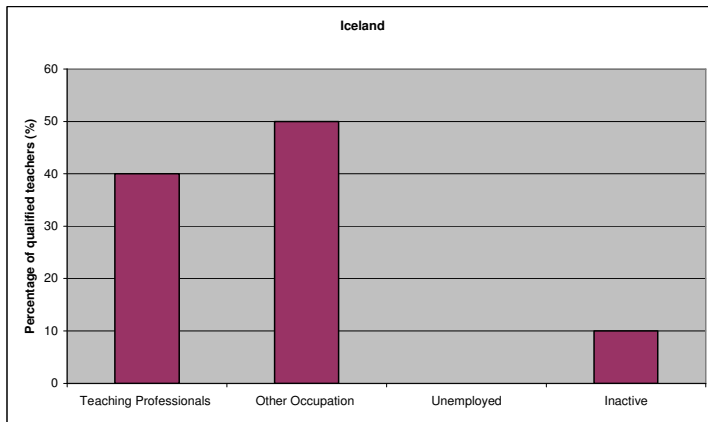
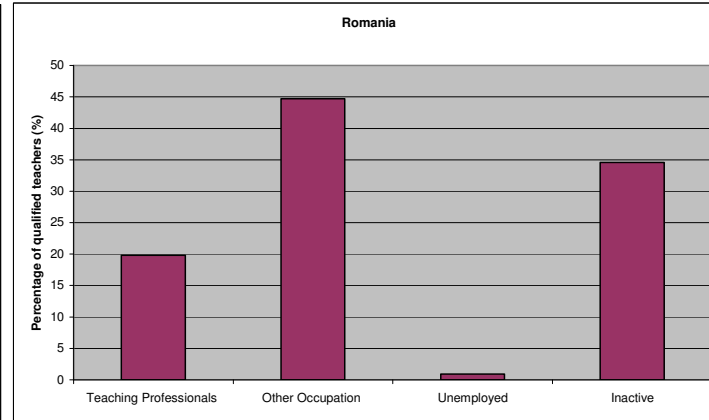
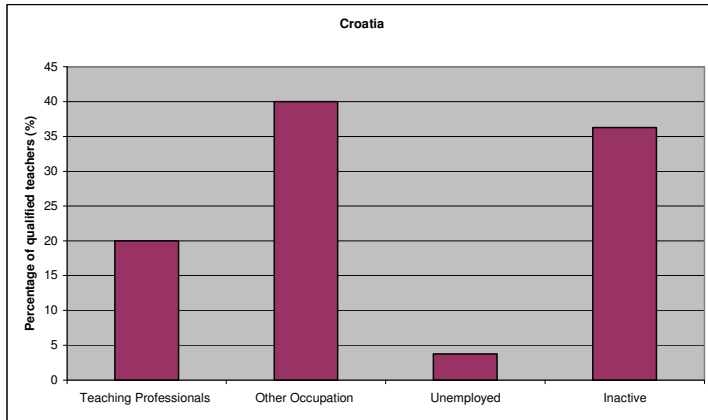


⁷ Italian LFS data are possibly unreliable.









2. Case Study UK: Returners' Courses Programme

1) Introduction

Interview conducted with Mel Wilde, programme leader of the Returners Course initiative since 1998, Training and Development Agency for Schools, Teachers Programme. Contact: mel.wilde@tda.gov.uk (Tel: + 44 20 7023 8330).

The Training and Development Agency for Schools (the TDA) is an executive non-departmental public body of the Department for Education and Skills (DfES). The principal aim of the TDA is to secure an effective school workforce that improves children's life chances.

Background information on the courses was found in the "Invitation to Tender for Returners Course Programme Evaluation 2006-2009" and on the TDA Website: <http://www.tda.gov.uk/teachers/returners.aspx>.

2) Description of the programme

The purpose of the Returner's courses is to attract teachers who left the profession and to support them in returning to the profession. The Programme has been implemented by the TDA since 1998 all over England. The number of courses has increased constantly since then.

Returners courses are run by providers including universities, schools and local authorities and are commissioned in areas of greatest needs, where vacancy rates are high and there is evidence of a pool of teachers who want to return to the teaching profession.

The case study addresses the question of the effectiveness of policy measures aimed at tackling teachers shortages and attracting teaching graduates in the profession. It also provides a valuable insight into the issue of inter/intra-professional mobility, particularly the reasons why teachers leave the profession and what kind of incentives can bring them back into the profession. The interesting aspect of the programme is that it targets the pool of potential teachers who are already trained.

Additionally the analysis of the programme also confirms hypotheses regarding professional mobility:

- the more attractive remuneration packages of the private sector, the more likely teachers move to non-teaching professions and vice versa;
- the higher the status of the teaching profession is perceived, the more students are attracted to teaching (and potential returners to come back).

3) Objectives and context of the programme

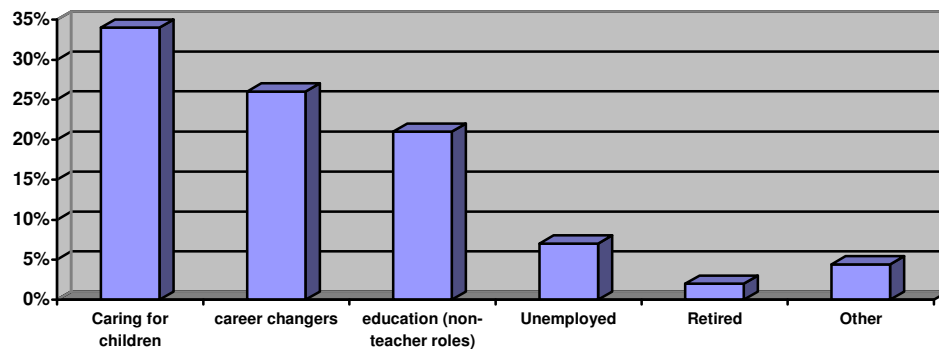
The programme has two main objectives: addressing the shortage of teachers and ensuring high quality of education in retaining experienced staff. It was originally designed in 1998 as a response to the severe shortage of teachers affecting primary and secondary schools. The purpose of the returners courses is to attract teachers who are able and committed and to support them in returning to the teaching profession.

Ensuring an adequate supply of teachers has become a high priority in the UK. In 1997 graduate recruitment was very weak. In recent years a range of initiatives have been implemented to recruit new candidates into teaching, but new recruits alone cannot ensure an adequate supply of teaching staff.

One of the main problems in ensuring an adequate supply of teachers is the ‘revolving door’ process, whereby large numbers of teachers leave the profession for reasons other than retirement. One approach to addressing this problem has focused on attracting qualified teachers back to the profession. The TDA introduced the returners courses initiative in 1998.

Previous evaluations of the returners courses have provided useful information on the characteristics of individual returners, their reasons for leaving the teaching profession and the factors which would encourage them to return. Registration with the TDA allows the agency to track participants to find out about the profile of those considering returning to teaching. In November 2001, a survey identified the employment profile of the Returning to Teach membership. Child caring was the activity of the majority of them (Figure 1).

Figure 1. Employment Profile of the Returners



The reasons why they had left the teaching profession were the following:

- to have a family;
- disillusioned with teaching;
- could not find the right/any position;
- moved house;
- health reasons or to retire.

When asked what would encourage them to return to teaching, the top five reasons for returning in descending order were:

- training to prepare for a return;
- increased time and resources for lesson preparation;
- flexible working hours;
- increased pay;
- provision of more secretarial and administrative support for teachers.

Returners to teaching represent excellent value for money in investment terms, since they have already been trained and are rejoining the workforce at comparatively low cost. Schools value the skills and experience that returners have gained outside of teaching.

4) Method and content of the programme

The courses are intended for people wishing to return to the teaching profession after a break, or for individuals who completed training but never actually taught, and are recommended by the DfES for anyone who has been out of teaching for some time. Delivered by a range of providers (including local schools, HEIs, local councils and private providers), courses may be targeted at primary, secondary or combined teacher audiences.

The programme targets teachers in the 'pool of recoverable teachers' (PRT), namely those who have left the profession and might potentially be encouraged to return.

Before starting the programme, the TDA launched a targeted media campaign to address the fears and concerns of the pool of recoverable teachers and to advertise the programme. The aim of national media campaigns such as "Everyone Remembers a Good Teacher" and "Work with the Most Exciting People in the World" was to portray teaching as a more glamorous and appealing profession. They were targeted at people who had left teaching to go to office jobs for instance and helped them realise that teaching is one of the most exciting professions. It can be a stressful job but it is enjoyable and never boring. Following the campaign a massive increase of teachers decided to return and register on the course.

Course provision is commissioned in areas of greatest need, where vacancy rates are high and there is evidence of a pool of former teachers who want to return. Today there are fifty small areas where vacancies are high and which the TDA focuses its efforts on.

Originally the programme was targeted at primary and secondary teachers. Today there is no shortage in the primary school sector anymore, but shortages still exist for secondary teachers in design technology, mathematics, biology, physics, chemistry, music, and religious education.

Courses last between six and 12 weeks. Each course must have at least 15 participants to be viable, with preference being given to individuals intending to return to teaching within 6 months of course completion. All course participants are required to register with the TDA's Returning to Teach Service. This enables the TDA to track participants and to elicit information about the quality and impact of the courses. The course specification is reviewed and amended annually to reflect the outcome of the evaluation, current recruitment needs and changes to policy affecting teachers. Courses are delivered during the Summer, Autumn and Spring terms across the country on a full or part-time basis. The courses provide:

- insight into recent changes in the classroom, primary national and secondary national numeracy strategies, ICT skills and strategies for classroom and behaviour management;
- opportunities to refresh and refine teaching skills - through teaching practice in placement schools and classroom observation;
- support and mentoring in preparation for return to the profession;
- an opportunity for returning teachers to prepare to meet the standards appropriate to their career stage.

Teachers enrolling on returners courses funded by the TDA can get a training bursary and help with childcare costs. Participants receive a bursary of £150 per week, up to a maximum of £1500 over the duration of the course. Participants are also eligible for childcare support of up to £150 per week for every child up to the age of 5 years (to a maximum of £1800 per child for the duration of the course) and up to £70 per week for every child between the ages of 5 and 14 years (to a maximum of £840 per child for the duration of the course) and / or caring of dependent adults. The minimum eligibility requirement is that participants must have Qualified Teacher Status (QTS).

The funding aspect is very important because 80% of the participants are women, and among them 80% left the profession to care for children. The financial support is an important incentive to enrol on the course.

5) Impact and results

In 2000-2001, 49 courses were funded with 700 places filled, nearly doubling in 2001-2002 to 90 courses with 1400 places filled. In 2002-3 there were 105 courses with nearly 1800 places filled.

Between 2003 and 2006, almost 4,400 individuals attended the 250 returners courses provided nationally.

The programme is annually evaluated and its results are measured against the national targets that are being fixed every year by the DfES, which is now around 1400 people taking part into the course per year.

A recent survey of 1011 course completers showed that over 61% of the participants in returners courses gained employment as teachers, with another 13% intending to return in the near future and looking for teaching work. Only 7% declared they were never going to return, and 19% that they were not returning yet.

The programme has been successful in so far as the number of unfilled vacancies has gone down significantly since 1998. It has clearly had an impact in reducing the shortage of teachers. Today the inflow of returners is decreasing, whereas more and more new entrants are coming in, indicating that the profession has become attractive to graduates again. For this reason the DfES lowered the target to 1400 participants per year. The returners course is now meant to fill vacancies that new entrants do not want to take, and efforts are focused on specific subjects and areas. The objective is now to address the problem of hard-to-fill vacancies – in particular secondary school teachers in sciences.

The success of the programme was mainly due to four key elements:

- proactive, targeted campaign;
- appropriate financial support;
- legislation improving working conditions of teachers;
- general economic context (remuneration).

First the media campaign that was launched at beginning of the programme helped to address the fears and concerns of the pool of recoverable teachers. Research was undertaken before launching the programme to investigate the reasons why teachers had left the profession. Understanding these reasons was essential to design the appropriate response to their difficulties (stress, difficulties in managing classroom, etc).

The marketing campaign was designed to address their fears: adverts showed how schools had changed, thanks to the National Remodelling Programme which increased the number of support staff to assist teachers. Teachers were also granted a new arrangement whereby 10% of their time at school would be spent away from the classroom to deal with preparatory work, marking etc, so as to help them balance their professional and family life. Overall the campaign showed that working conditions of teachers had improved over the last years.

Second, the provision of adequate financial support was essential to the success of the programme. Considering that a large majority of the returners are female teachers with childcare responsibility, the expenses related to childcare are a major concern in their decision to attend the course. A survey carried out by the TDA in March 2006 reveals that

56% of the course completers would not have attended the course without the child allowance, and 46% would not have attended without the bursary. Consequently an appropriate level of funding is indispensable not to deter potential returners to apply for the course. The returners' motivation needs to be supported financially.

The third element is the policy context in which the programme took place, namely a series of measures taken to improve teachers working conditions. In addition to the Remodelling Programme (increase in support staff), new posts were created in schools, providing alternatives to becoming Deputy Head. Advanced Skills Teacher (AST) was devised to reward excellent teachers who wished to remain in the classroom and spend the equivalent of one day a week supporting other teachers in developing their skills and experience through the sharing of best practice ideas and approaches. By providing a real career progression and substantial financial benefits, these posts help to retain key members of the teaching staff without having to move into a management role. They were heavily advertised through the TDA website and magazine, and contributed to bring people back into the profession, especially male teachers who often leave the profession for financial reasons.

Finally, an important success factor was the economic context which was favourable to the teaching profession in terms of remuneration. In 1998 teachers pay was perceived as unattractively low and could not compete with private sector salaries. But over the last five years teachers pay increased markedly, while private sector salaries stood still. As a result the remuneration package of the teaching profession is much more attractive today (graduates start with a gross annual salary of £20,000).

The main difficulty encountered in the implementation of the programme consisted in reaching the right target and finding the teachers who would be willing to return. Indeed, teachers can register on the TDA database (which comprises 21,000 teachers today) but the TDA is not able to directly contact the people who do not register. It has become increasingly difficult now that the programme focuses on a very specific target group. The only possibility is to advertise the programme and encourage people to go on the website, but national tracking is not possible in the UK due to lack of available data (the DfES does not have the necessary information). The programme would be easier to implement in a context where it would be possible to track teachers' careers and to contact the teachers who left the profession.

6) Conclusions

The purpose of the Returners' courses was to attract teachers who left the profession and to support them in returning to the profession. It was first designed as a response to the severe shortage of teachers affecting primary and secondary schools.

The TDA's approach has focused on attracting qualified teachers back to the profession to ensure an adequate supply of teachers and address the problem of the 'revolving door' process, whereby large numbers of teachers leave the profession for reasons other than retirement.

The programme provides evidence of the effectiveness of policy measures to address teachers shortages and how a well designed programme can influence the supply of teachers. The programme was based on preliminary research and a well informed media campaign, and it provided the necessary incentives and financial support to encourage motivated applicants to follow the course.

It also provides a valuable insight into the issue of inter-professional mobility and the reasons why teachers leave the profession and what kind of incentives can bring them back

into the profession. The analysis of the programme confirms hypotheses regarding professional mobility, in particular the fact that the more attractive remuneration packages of teachers are and the higher the status of the teaching profession is perceived, the more likely teachers move back to the profession.

The favourable context in the UK greatly contributed to the success of the programme. Indeed a combination of legislative reforms and economic conditions created more favourable working conditions (increased wages and better career opportunities) leading to an increase in the number of returners.

3. Case Study: Rural Education Project in Romania

1) Introduction

Interview conducted in Bucharest on 17/08/2006 with:

Monica Dvoski, Programme Director, Centre Education 2000+, mdvorski@cedu.ro
(+40212120780)

Mr. Velter, Romanian Coordinator, Ministry of Education, velter@ump.kappa.ro (+40 21 305 60 81)

Centre Education 2000+ is an NGO stakeholder involved in the Rural Education project. The overall coordination of the project is managed by the Ministry of Education and Research ("MoER") as part of the country's education reform in coordination with its transition into a democratic society and market economy.

2) Description of the case study

Urban areas do not have problems in the selection of teachers. However in rural areas there are many issues which prevent teachers from wanting to teach there. Teachers prefer to do anything but go to rural areas and often change their occupations to avoid having to move to these communities. As a result, there are many unqualified teachers in rural areas and a shortage overall.

This case study consists of an evaluation of a programme aimed at raising the professional qualifications of and improving the career support for teachers in rural communities. The geographical coverage is all of Romania's rural areas, which will cover approximately 10,757 school units and over two million students. The programme started in 2003 and will run until 2009. The funding allocated for this programme will be a total of \$90million funded through a World Bank loan of \$60million and the Romanian government who gave \$30million.

The programme has a two sided approach:

- to improve teachers' qualifications in subjects in which there are current and/or projected shortages through improved university programmes and distance learning;
- to support rural teachers' career development and opportunities through providing onsite pedagogical support so that teachers are better equipped to deal with the challenges rural communities face.

The hypotheses that are applicable to the case study are around professional mobility, changing teaching roles and regional mobility. The hypotheses concerned are:

- in circumstances where career opportunities are relatively constrained because of falling school roles and reductions in the number of 'high level posts' relative to supply of potential candidates, the number of those leaving the profession will increase;
- the more attractive the remuneration packages and salary progression of other public professions or private sector posts for equivalent levels of qualifications as the teaching profession are, the more likely it is that teachers will move to other non-teaching professions. (Rural environments are not attractive to teachers because of the socioeconomic conditions and low salaries);
- if the quality of teacher training is perceived to be low it is likely to be a deterrent to potential recruitments into the teaching profession: the programme provides extensive support and training to teachers to enable them to deal with the challenges rural environments bring;

- the increase in pressures on teachers (assessment, parents' demands, difficult pupils, individual teaching environments, etc.) is likely to lead to reductions in the supply of teachers through illness, 'retirement' from the profession, etc. (Rural communities are viewed as difficult environments that teachers are hoping to avoid);
- the availability of mobility schemes within a country or other countries offering structured services to help mobile teachers will attract more teachers to teach elsewhere. (This programme which provides career development and qualifications to teachers in rural communities will encourage professionals to pursue a teaching career in these communities).

3) Objectives and context of the programme

This project is the fourth in a series that the Ministry of Education and Research has sponsored. The objective is career development for rural teachers. There are two main components of this programme: qualifications and teacher training/support in issues pertaining to rural communities.

Component 1

With respect to the qualifications the rural teachers possess, the majority of them only have a high school degree and in many instances teachers are teaching in areas that they are not qualified to teach in.

The *specific objectives* of this component are:

- to develop a new Distance Learning (DL) training programme, that responds to the learning styles, needs, interests, backgrounds and aspirations of teachers from rural schools;
- to create the legal and academic conditions, for the acceptance and recognition of the diploma granted at completion of the programme;
- to train about 4,000 participating rural teachers, in order to give them appropriate professional qualification;
- to strengthen the ties between pre-academic and higher education.

The project started in 2005 and will qualify teachers to teach in primary school and secondary school. 1,200 teachers will be starting the full course degrees whereas 800 will be taking specific classes in pedagogical methods. The remaining teachers will be receiving re-training in the subject areas where there is a current shortage. This particular part of the scheme comes from a shortage of teachers qualified to teach certain subjects which are foreign languages and music and arts. This programme is an in-service teacher training, which allows teachers to attend classes and receive qualifications in this area without having to interrupt their teaching schedules. The training is done through attending classes at training centres or through a distance learning programme.

Component 2

There are many socioeconomic issues surrounding teaching in rural communities. Teachers who chose to pursue a career in these areas face the added pressure of working with diverse ethnic and cultural groups of pupil populations, many of whom do not speak Romanian as a first language. Additional issues are occurring as the educational reform in Romania is causing a re-organisation and re-clustering of schools. Schools that were previously small and independent are now joining larger schools. Up until recently some 3,000 schools in Romania had less than 20 children in them. Re-organisation of schools causes increased pressure on teachers to have to adjust their methods to teaching a variety of ages and abilities of students in the classroom. This situation has led to the development

of a mentoring programme where experienced teachers are hired by the Ministry of Education to undergo rigorous training after which they then travel around the country providing in-service training and support to teachers in rural classrooms. A complex set of tools have been developed to address the needs of these rural teachers and a network has been created where they can rely on the mentors to support them even after their in-class training is completed. Some 80,000 teachers are involved in this programme.

4) Method and content of the programme

Component 1

In order to assure participation in the training programmes, the promotion of the learning programmes had started in November 2004, which is one year before the actual training started. A leaflet was created and made available on the web page of the programme and sent to all rural schools.

The target population for Component 1 consists of three groups:

- university graduates with training in pedagogy, who are teaching subjects outside their subject area;
- university graduates with subject knowledge, but no pedagogical training (e.g. engineers, agricultural and administration specialists);
- graduates of upper secondary schools who are teaching in primary schools (grades I-IV) with no pedagogical training.

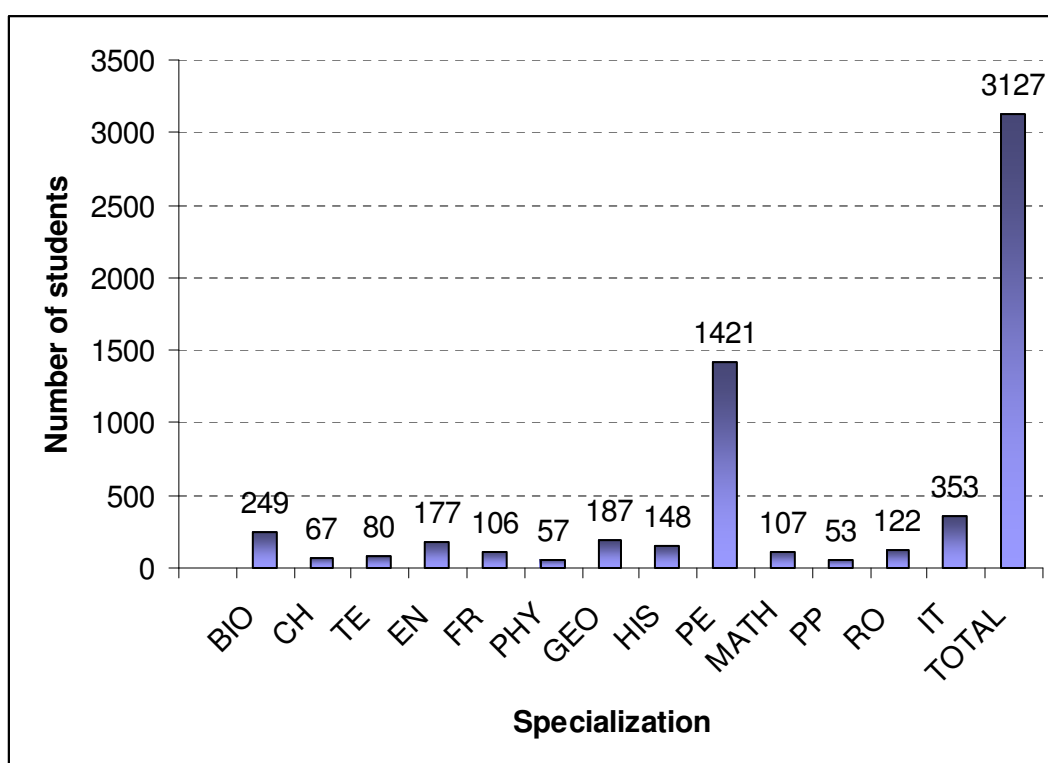
Expressions of interest were sent from rural schools teachers and the application process was managed by each university independently either centrally on their premises or in county centres. Table 1 presents the breakdown of training programmes available. 3,700 were accepted into the programme and those that enrolled had to sign a contract stipulating that, after completion of the training programme, they will teach in a rural school for at least 4 years. The implementation started in the academic year 2005 / 2006. About 3,127 teachers registered and the number of students for each specialization is broken down in Table 2.

Table 1: Training programs

Learning program	Technical domain	Duration	Pre-requisites and target group	Diploma granted
Postgraduate professional conversion programmes	mathematics, physics, chemistry, biology, technological education, information technology, Romanian language and literature, English language and literature, French language and literature, history, geography	3 or 4 semesters	Bachelor diploma / Subject teachers with university degree, who are teaching subjects outside their subject area, as well	Postgraduate professional conversion diploma
Pedagogy for preschool	-	6	Baccalaureate diploma / Graduates of upper	Bachelor

Learning program	Technical domain	Duration	Pre-requisites and target group	Diploma granted
and primary education teachers		semesters	secondary education who do not have qualification and training to teach in primary schools	diploma
Psycho pedagogy	-	3 semesters	Bachelor diploma / Graduates of higher education who have particular subject knowledge, but did not have pedagogical training	Teachers' certificate

Table 2: Subjects and number of students



BIO – biology

CH – chemistry

TE - technologic education

EN – English

FR – French

PHY – physics

GEO – geography

HIS – history

PE - primary education

MATH - mathematics

PP – psycho pedagogy

RO - Romanian

IT - information technology

Component 2

In developing this programme there was a needs assessment done to discover the relevant areas in which teachers needed support in order to develop the appropriate tools. There

was a special focus on the ethnic minority populations and how to teach Romanian as a second language, taking into consideration the experience of other countries and adapting them to Romanian rural needs. A series of tools, both in the form of written guides and video tapes, were developed. They include subjects such as:

- how to teach remedial reading and math;
- assessment;
- interactive teaching;
- educational management;
- computers in schools/ICT.

To develop these materials consultants were used and a consortium was developed to provide technical assistance. This group also was involved in monitoring activities. The partners involved in the consortium are the Romanian NGO Centre Education 2000+, the British council, the consultants Cambridge Education, and the Romanian foundation/NGO Euro Ed (foundation and Romanian NGO).

These materials were delivered through mentors, experienced teachers hired by the Ministry of Education. These mentors were chosen because of their exceptional classroom abilities in rural environments and they underwent a comprehensive set of trainings. Upon completion of this project in 2009 they will be a valuable resource to the Romanian educational system which will assist them in their career progression. While they are participating in this programme, their classroom responsibilities are covered by replacement teachers. In Romania there is a system of permanent and non-permanent teachers. The non-permanent teachers are mobile and replace permanent teachers on a temporary basis as needed. For this programme there are a total of 82 mentors, 2 in each of the 41 counties. Some 80,000 teachers are involved in this programme and because teachers in rural communities are not very mobile, an important aspect of this programme is that these mentors are mobile. In order to be as effective as possible they need to visit the schools and teachers directly. As a consequence 41 Mobile Resource Centres were developed.

In 2004-2005 in the first academic semester, there was a pilot done in 7 counties to test the modules, curriculum and video tapes. This was done with 1,200 teachers in 7 counties in 24 schools in each county. The pilot covered a wide range of schools and geographical areas. There was approximately 1 mentor for each of the 115 teachers. Teachers reported back that the support the programme offered them was crucial in their career development and ensured for a more positive interaction with students. Through the pilot phase, there were 1067 teachers attending the programme, out of a total number of 1152 in the pilot schools, meaning 93% of the teaching population.

5) Outcomes

Component 1

The main outcomes of Component 1 to date are related to teachers entering programme and the development of educational and distance learning modules:

- approximately 3,100 rural area teachers have joined different training programmes, currently being in the second semester of studies;
- approximately 170 teachers, professors or researchers, from 50 different educational institutions, have been trained in what concerns developing distance learning study materials;

- the development of a curriculum framework for distance education and training programmes for practicing teachers as well as instruments for monitoring and evaluation.

Component 2

The specific outcomes to date for this component are:

- a baseline survey of the pedagogical needs of rural teachers. The development of training materials and videotapes for school-based professional development of teachers;
- the recruitment, selection and training the body of mentors needed in mentoring process. As a result of their involvement in this project these mentors will have greater career opportunities after the programme ends;
- the creation of mobile resource centres that can be used for training of teachers in other parts of the country.

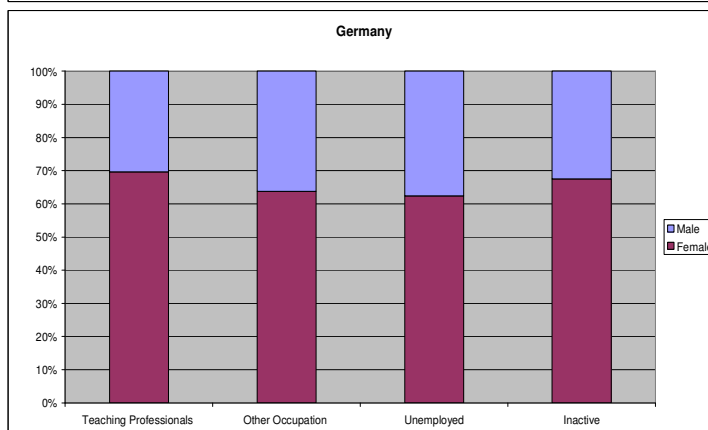
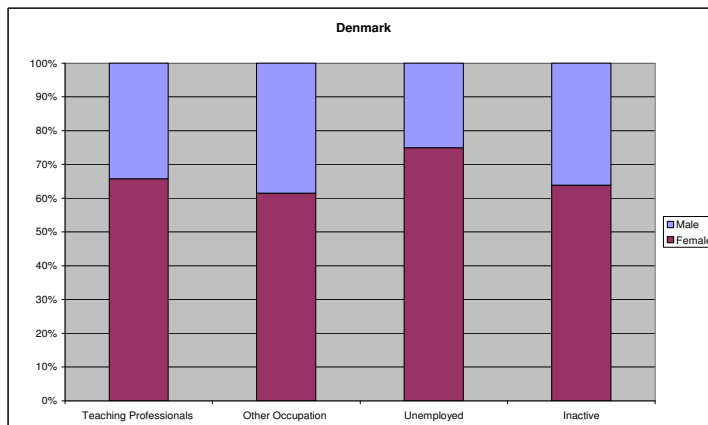
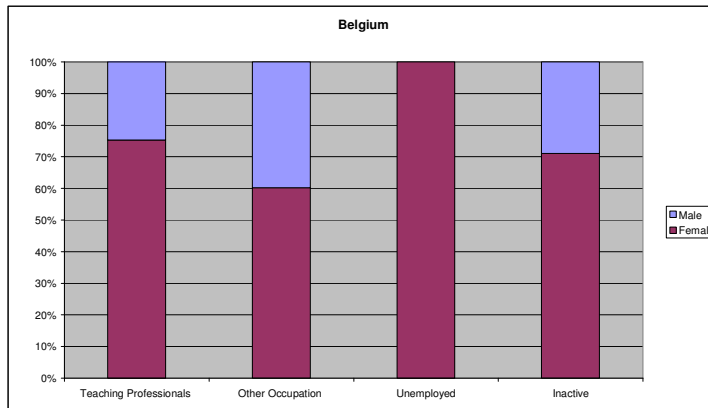
6) Conclusions

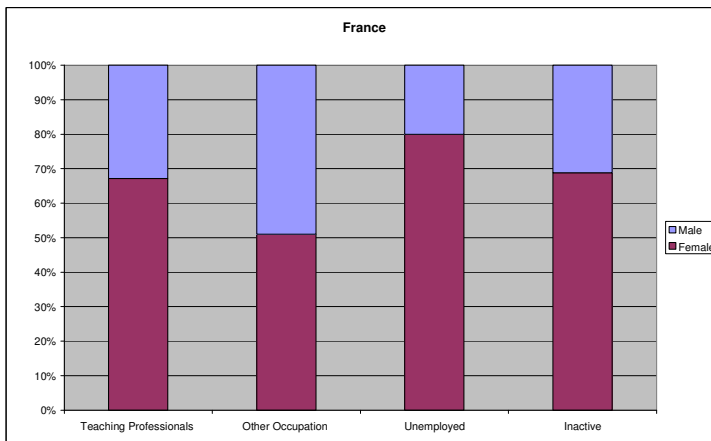
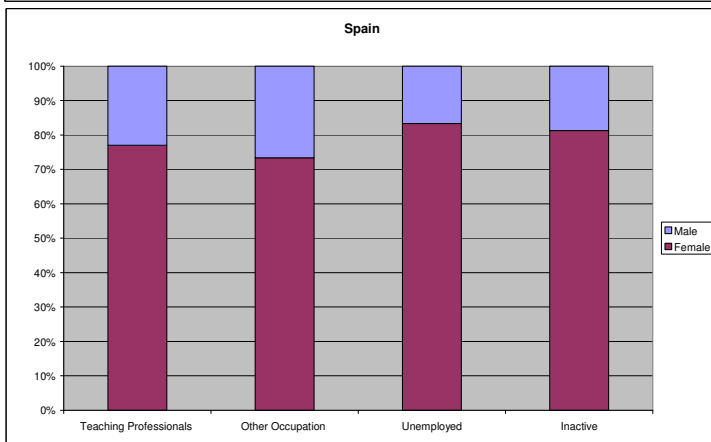
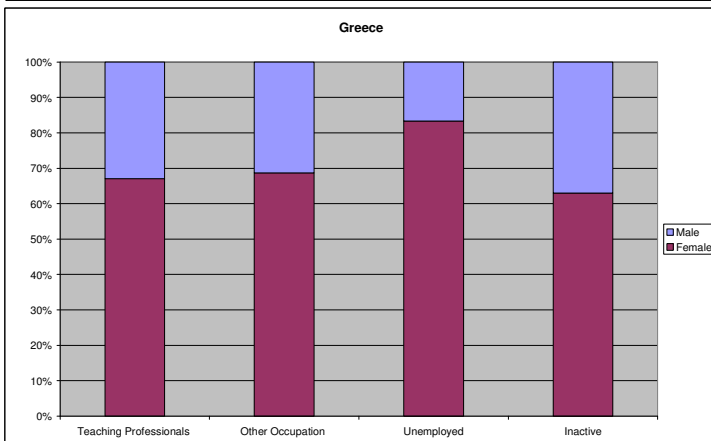
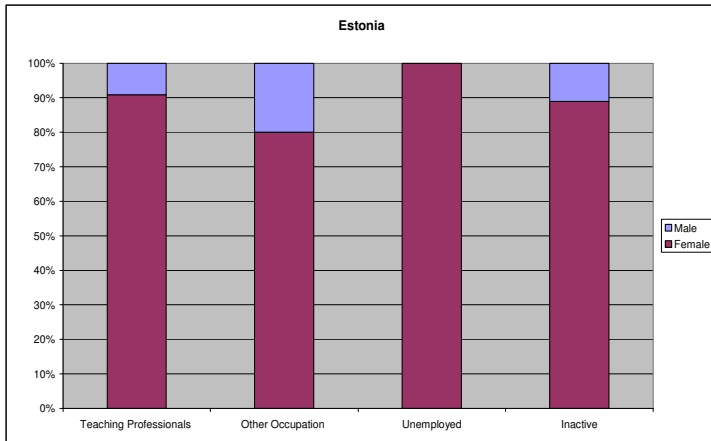
There are a number of lessons learned in this programme and best practices that can be used to replicate this programme in other parts of Romania such as in urban areas with similar issues as well as other countries with rural communities experiencing shortages of teachers. A similar project is also currently being developed to target kindergarten teachers across Romania in both urban and rural communities. The first lesson learned in this project is that in developing this type of programme it is important to ensure that it is appropriate for the population, which is why a needs assessment is an important first step. Similarly, after conducting a pilot it is key to make any necessary revisions. For example, after piloting the mentor programme, it was discovered that art teachers did not feel the programme was appropriate to their needs and additional materials had to be developed. To ensure that teachers participate fully in the programme it is important that training is relevant to their subjects.

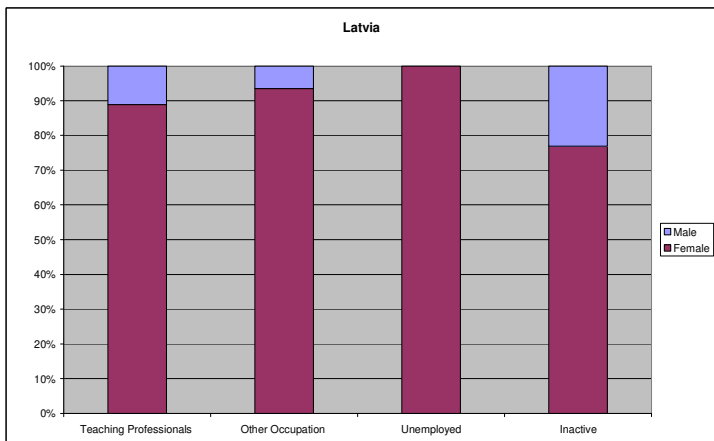
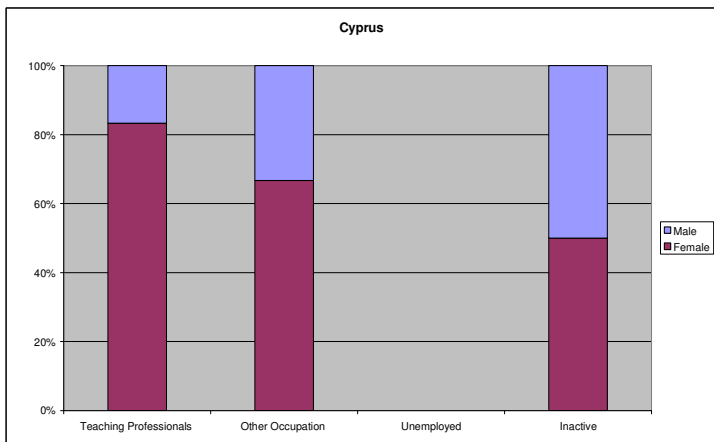
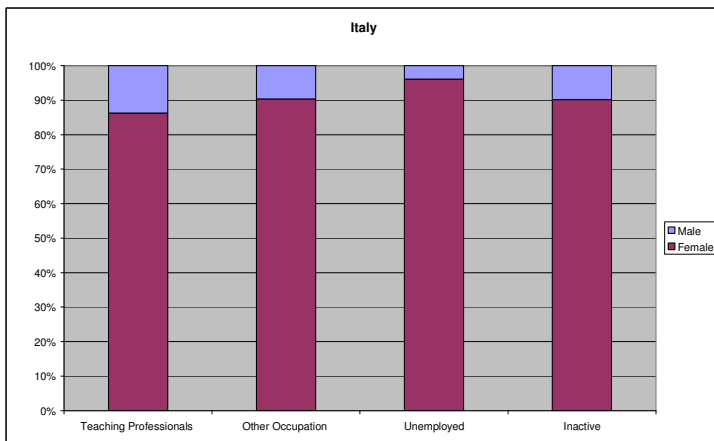
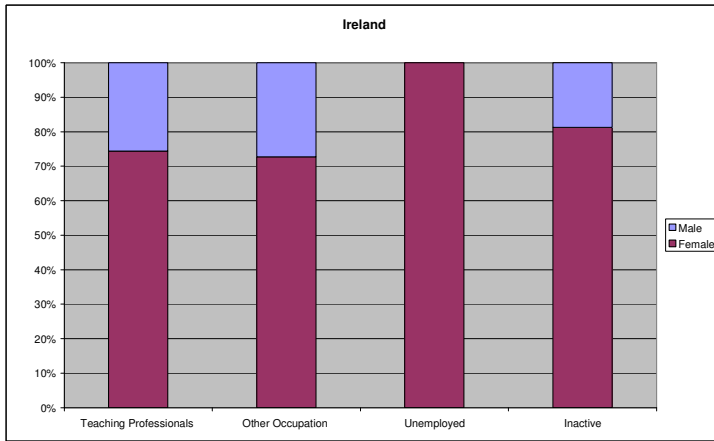
As a result of both components of the programme rural teachers have reported that they find their jobs easier. They feel they have more career opportunities and support. They are now teaching subjects in which they have received qualifications. There is a new support system in place and they have mentors with whom they can discuss the difficulties they face in the re-organisation of the Romanian rural education system. Despite the fact that the remuneration is currently the same, there is far less pressure on teachers as they are receiving the professional support they need. In fact, urban teachers are now advocating for a similar programme in their schools. There is also a projected decrease in the shortage that previously existed in certain subject areas. The full educational effect of this programme on the pupils cannot be effectively measured until pupils are tested in these subjects. As many teachers are still in the second semester of their qualifications training, it will be necessary to wait until they have taken up posts to fully understand the outcomes of the programme.

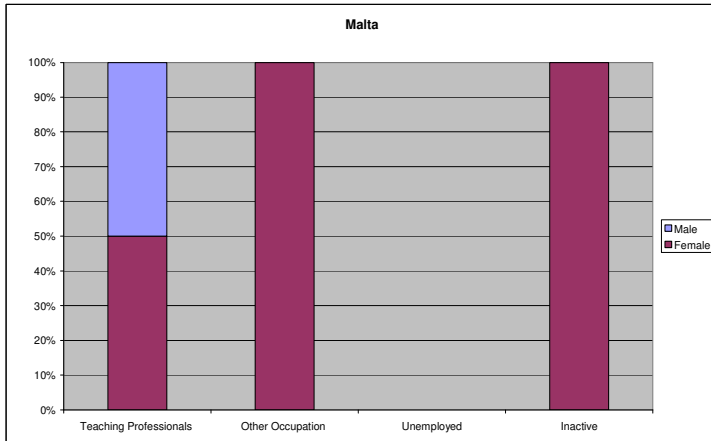
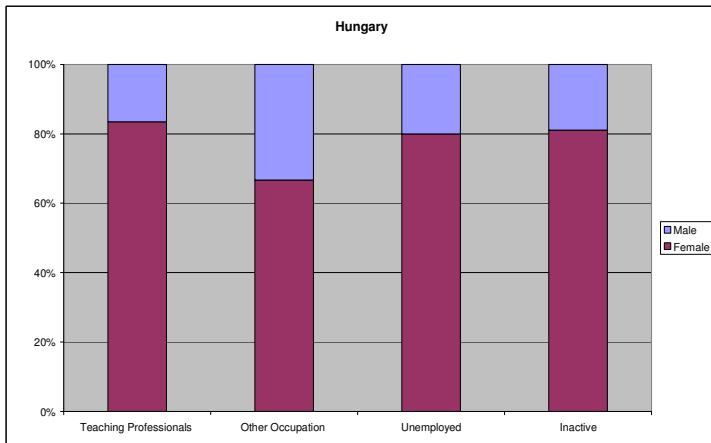
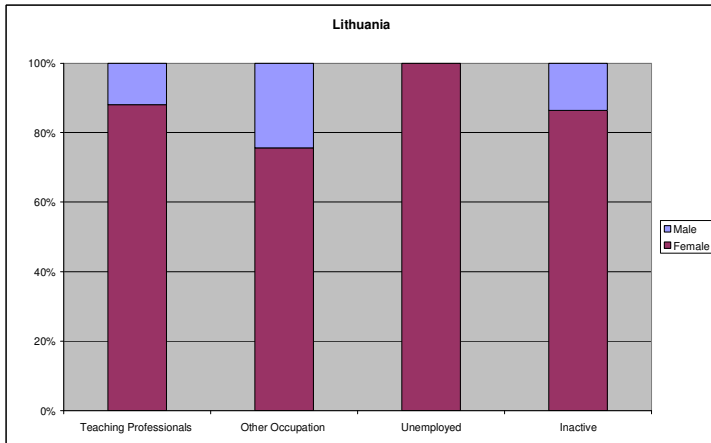
4. Gender distribution by employment status for those reporting teaching qualification as highest qualification

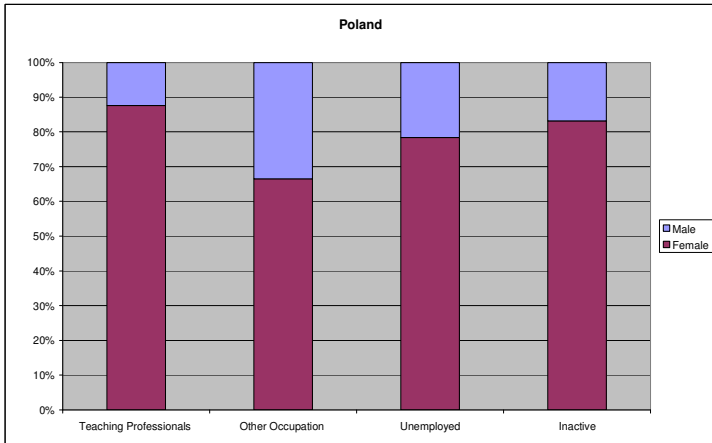
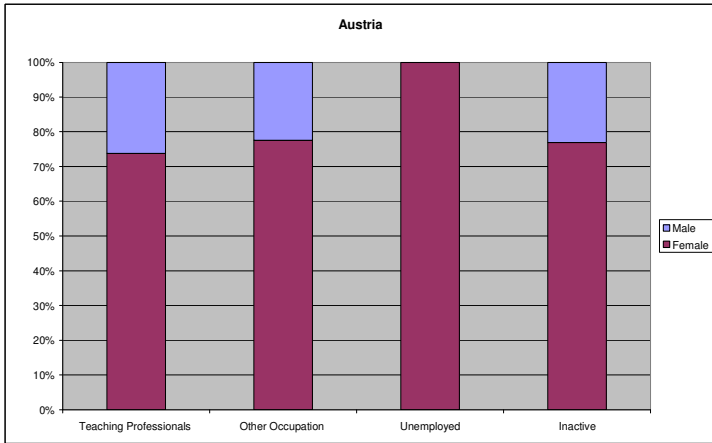
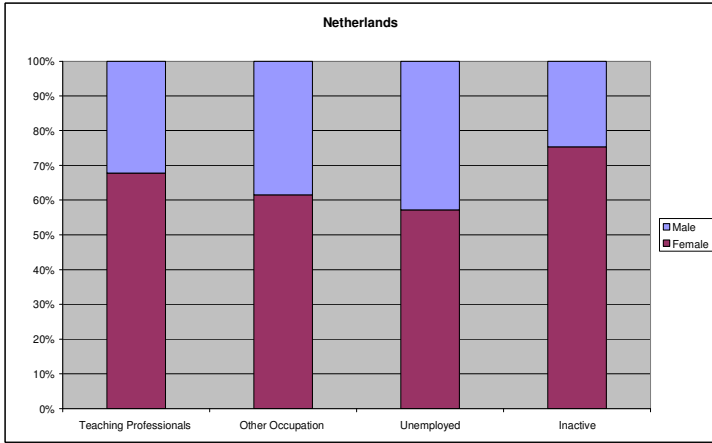
Source: LFS 2005

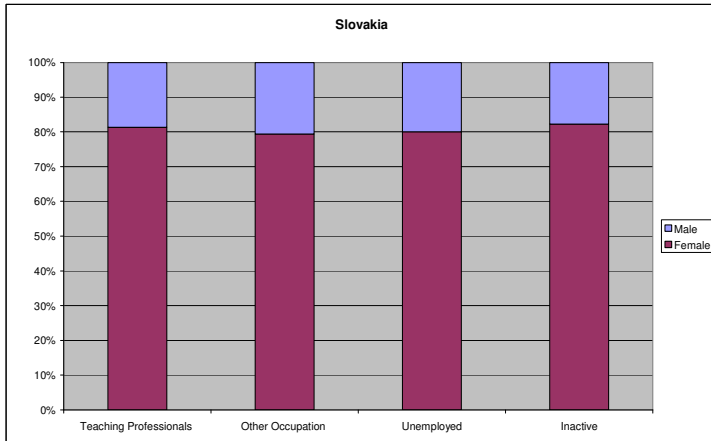
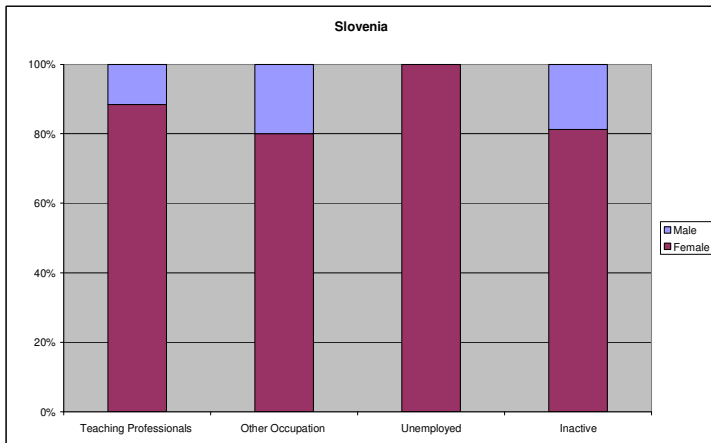
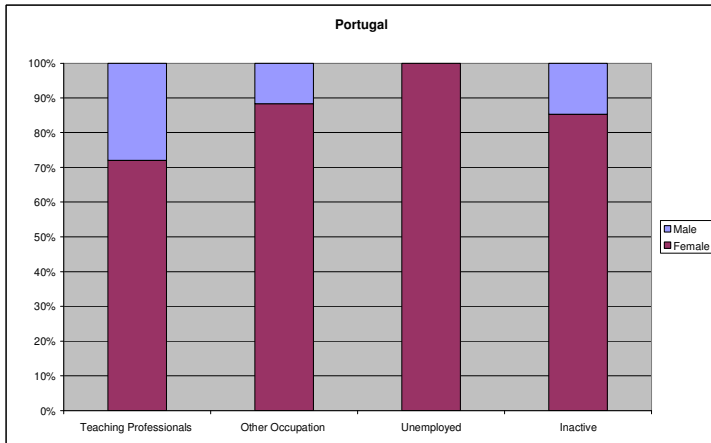


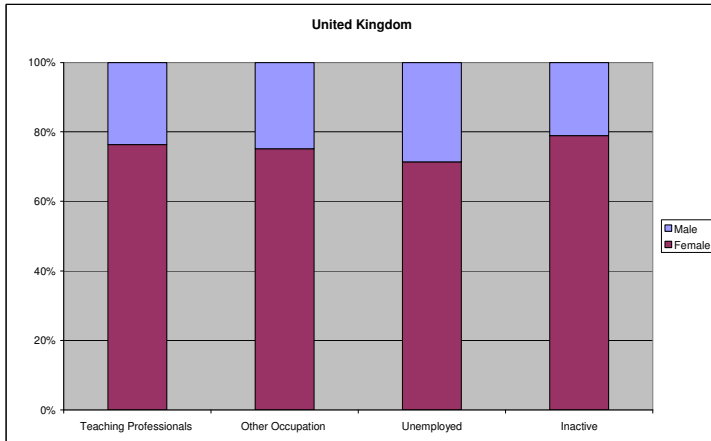
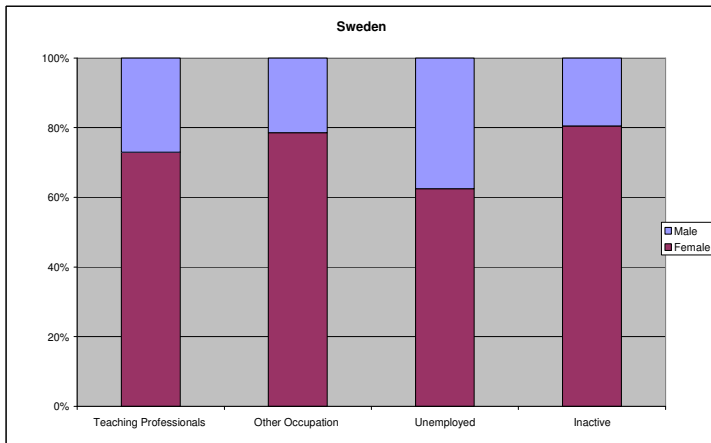
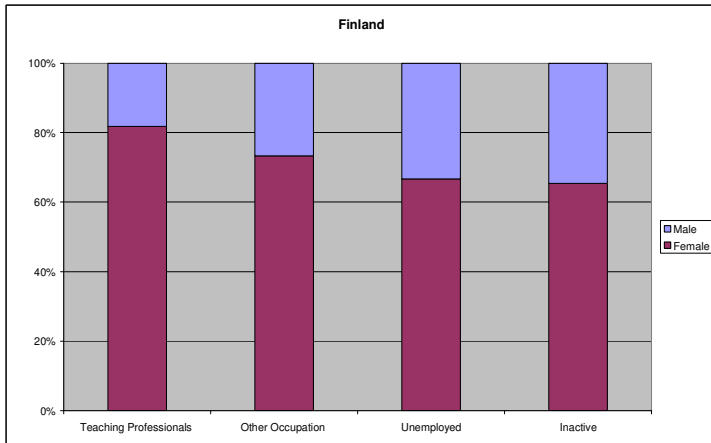


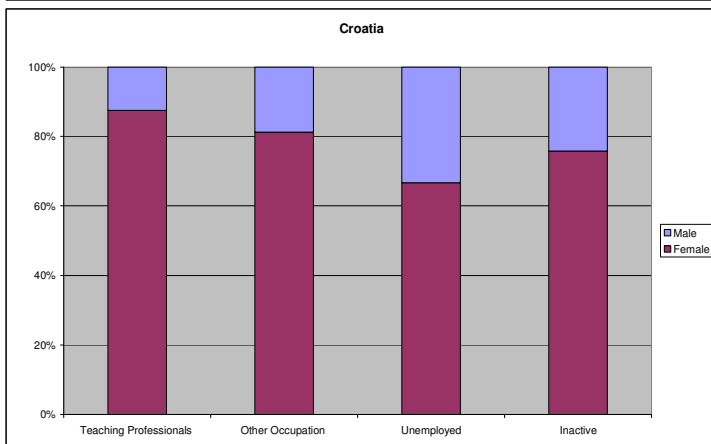
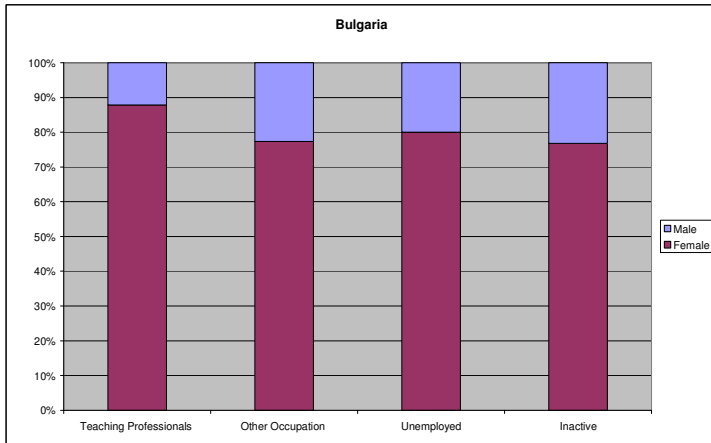


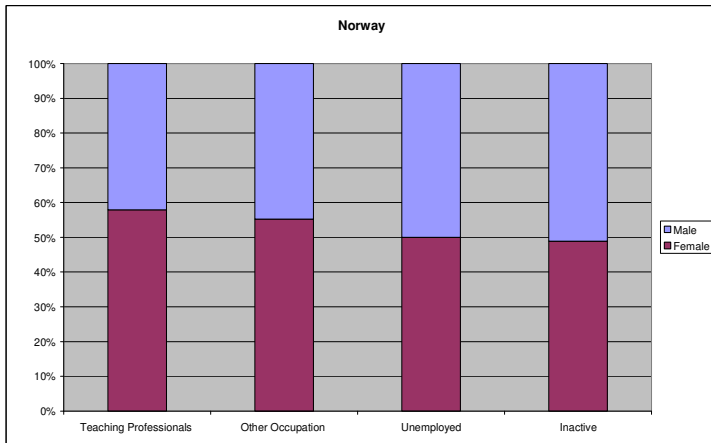
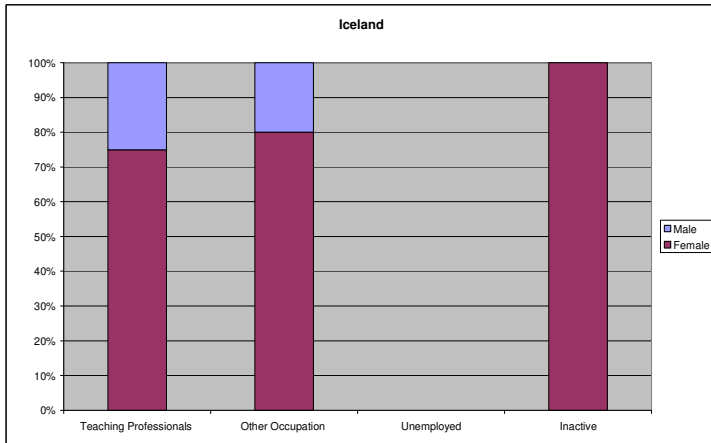












Annex E – Information relating to Section 6

1. Case study: EU wide ‘Post-to-post’ exchanges
2. DG INTERNAL MARKET: Database of the movement of regulated professions
3. Case study Germany: Mother Tongue Lessons in Turkish
4. Policy measures per country to keep or restore the balance between demand for and supply of teachers

1. Case study: EU wide ‘Post-to-post’ exchanges

1) Description of the case study

The case study is based on the Study *Detecting and Removing Obstacles to Foreign Language Teaching Abroad (DROFoLTA)* written by Glyn Williams (Blanquerna Faculty of Communication Sciences, U. Ramon Llull), Miquel Strubell (Universitat Oberta de Catalunya), Jordi Busquet (Blanquerna Faculty of Communication Sciences, Universitat Ramon Llull), Dolors Solé (Departament d'Educació i Universitats, Generalitat de Catalunya), and Sergi Vilaró (Universitat Oberta de Catalunya). The report is based on a study commissioned by the European Commission, Directorate General for Education & Culture and was submitted in July 2006.

One of the main objectives of the study was to obtain a better understanding of the obstacles to the mobility of teachers, and to know more about how the language teachers themselves understand and perceive the incentives and barriers associated with mobility. The study covered 31 countries (EU 25, Bulgaria, Turkey, Iceland, Norway, Liechtenstein and Romania).

The particular focus of this case study is the system of post-to-post exchanges reviewed within the study. Post-to-post exchanges operate between a number of countries such as France, Germany, Spain, the UK, as well as Austria and Ireland. These programmes are based on multilateral agreements which offer teachers with fixed contracts, a unique way to update their language skills, gain knowledge of another education system and experience the culture of another country. These schemes offer an opportunity to successfully remove barriers to mobility and particularly to allay concerns about job stability, income, costs and replacement in the home country.

This study gives some valuable insights into the issues of transnational mobility of language teachers and the factors influencing the geographical mobility of such teachers, in particular the existence of mobility schemes which address institutional obstacles to mobility.

2) Objectives and context of the case study

The objectives of the case study are to list, define, and analyse the obstacles to the transnational mobility of language teachers in Europe, and make practical recommendations for action at European and national levels. One of the aspects of the study focuses on potential solutions to increase mobility, and examines the ‘post to post’ exchange schemes which aim at removing some of the obstacles.

Encouraging the mobility of teachers and improving the experience of language teachers was included as an objective of the EU Action Plan for Mobility (2000), which sought to give

language teachers the opportunity to go on long-term training placements abroad. The Commission recommended that Member States remove legal and administrative obstacles to the mobility of language teachers, monitoring this objective in Actions II.4.1 and II.4.2 of the Action Plan 'Promoting Language Learning and Linguistic Diversity' (Commission 2003).

However, many barriers still exist that prevent most language teachers from availing themselves of such opportunities. The survey carried out by the study team identified the following obstacles:

Table 1: Incidence of mentioning different obstacles

OBSTACLES	% citing
1. Their absence would cause problems for the school.	22.0%
2. The financial costs would be too great	52.6%
3. Their social security and pension rights would suffer	12.5%
4. They have no/little job security at home.	14.4%
5. It would not enhance their career prospects.	8.4%
6. The education/work situation would be too different	5.4%
7. It would interfere with family responsibilities.	52.2%
8. Their spouse's / partner's employment would make it difficult.	32.3%

The main obstacles to mobility involve the potential financial cost of the initiative, and problems associated with family responsibilities, which are in part highlighted by the very high proportion of women in the foreign language teaching sector. There is considerable concern about the implications of mobility for the employment of the partner.

However, it was found that most teachers are confronted by a range of obstacles, not least amongst them a widespread lack of information about mobility opportunities as well as the apparent lack of structure associated with the limited range of migration opportunities.

There is also considerable insecurity associated with the impact of any migration on both professional and personal circumstances. This covers a range of issues including the portability of pensions, salary increments, and tenure. Similarly, there are considerable concerns about the ability and willingness of the school in the home country to find a suitable replacement.

A serious obstacle seems to be that professional teaching experience abroad is only in certain circumstances, such as some formal bilateral exchange agreements, accepted as valid experience in the home country when it comes to competing for promotion or occupational tenure.

The existence of multilateral exchanges between countries to facilitate mobility provides a way of addressing some of the barriers that limit teachers' mobility. In particular, these schemes offer the possibility to allay concerns about job stability, income, costs and replacement in the home country.

3) Method of approach of the case study

The subjects of the study are qualified language teachers from across Europe working at the primary, secondary and vocational levels of education. Two sets of subjects are involved: (a) those who are qualified to teach students a 'foreign' language; and (b) those qualified teachers who are capable of teaching another subject through the medium of what for the students is a 'foreign' language.

The study used three means of gathering data. The first consisted of desk research which sought to identify legislative and implementational developments, with the support where

necessary of official contacts in each state. The second involved focus groups of the main stakeholders associated with language teaching. These were conducted in four states selected in relation to a heuristic model involving different orientations to teacher mobility. The third component consisted of an on-line survey of language teachers in the 31 target countries. The topic focused on the motivation for, and the obstacles to, mobility.

The on-line survey attracted 6,251 responses from foreign language teachers across Europe. It identified a desire to improve both competence in the language that they teach and familiarity with the associated culture as the main motivation for teacher mobility. A crucial variable in assessing the relative importance of each obstacle was gender. Five out of six respondents were women, and 'personal obstacles' in their case were often highlighted as more important than other kinds of obstacle.

4) Content of the case study

The study examines the bilateral and multilateral exchange agreements applying specifically to the mobility of foreign language teachers that exist between a limited numbers of countries. One of the advantages of these agreements is that they override the need for teachers to go through the daunting process of having their individual professional qualifications recognised in the potential host country before they can legally work there.

In the UK this system is called 'Teacher Exchange Europe' and it is managed by the British Council. In France it is called 'Échanges poste pour poste entre des professeurs de langue vivante', and involves both primary and secondary school teachers, for up to a school year. In Spain, it is called 'Programa de Intercambios Puesto por Puesto' and is managed by the Ministerio de Educación y Ciencia. In Germany they come within the scope of the Bilateraler Lehreraustausch and are administered regionally. Spain has bilateral agreements (Convenios Bilaterales de Cooperación Educativa) with Germany, the United Kingdom and France. France has agreements with the three countries, as well as Austria and Ireland, for secondary school teachers; and with Germany and Spain for primary school teachers.

Obstacles to mobility are overcome in the post-to-post exchange schemes. In Germany for instance, teachers who apply for an exchange apply to their national ministry. A bilateral commission of the sending and the hosting countries then tries to find the best 'matches'. The two partners exchange their posts (and nearly always, their homes as well) for three months or a full school year. The remaining obstacle for teachers in Germany is the small number of applications from France and Spain.

In the Spanish post-to-post programme, the employer continues to pay teachers their current Spanish salary during the exchange abroad. In addition, the Spanish Ministry of Education pays an allowance in accordance with the law. At present and depending on the length of the stay, the allowance is circa €3000 per quarter. However, there is a supplement in some cases: for instance, teachers going to the UK earn a supplement of £3,000 a term.

To be eligible, UK teachers have to be teachers of Modern Foreign Languages, with a minimum of two years' teaching experience, and working at secondary school level. The duration of exchanges can be arranged for six weeks, the autumn or spring term or one full academic year. In all cases, posts are exchanged with a colleague from France, Germany or Spain. As pointed out on the British Council website, an important advantage of the system is that teachers keep the security of their job in the UK. In these exchanges each teacher retains their own salary, which means that exchanges are especially appealing for teachers from countries with high salaries wishing to work in countries where the cost of living is lower.

5) Impacts and results

The findings of the survey reveal that there was widespread agreement among teachers about the obstacles to mobility: the concern that mobility could interfere with domestic responsibilities, the perception that teachers engaging in transnational mobility will end up having to invest in net terms, the impact of mobility on job security, the loss of social security and pension rights, and its negative impact upon promotion prospects.

The post-to-post exchanges clearly address some of these obstacles, in particular in so far as they allay concerns about job security and replacement (institutional obstacles). For a high number of British and German teachers, the main obstacle to mobility is the fear that “It would not be easy to find a candidate to substitute for me” (25%).

British teachers also fear that “I might lose salary and pension or social security benefits that derive from my teaching position if I was absent from my post working in another country” and that “It would be difficult to obtain recognition of my professional status in the host country” (25%).

The other considerable advantage of these schemes is that they override the need for teachers to go through the daunting process of having their individual professional qualifications recognised in the potential host country before they can legally work there.

However, the efficiency of these schemes is limited by a certain number of difficulties. Spanish teachers going to the UK find that compensation is insufficient considering the cost of living in the UK. The survey revealed that the cost of the exchange is a serious concern for Spanish teachers, but the scheme clearly does not systematically address the financial obstacle when the difference in the costs of living is too important.

Another factor is the workload: teachers from Spain find that the number of lessons they will be required to teach in the UK is higher than the workload they have at home. Besides, they may be asked to teach other subjects as well as Spanish without prior notice or qualifications to do so, usually a combination of Spanish and French.

Additionally, individual obstacles related to family responsibilities are not overcome by the schemes. These are very important barriers to teachers' mobility: 40% of British teachers feel that their “Partner would not be in a position to give up his/her current job”. In France, more than a third of the respondents think that “Working abroad could interfere with the relationship with my family”.

Finally, the whole exchange system is aimed at very limited numbers of teachers. Thus, each year only four teachers from Spain go to work in the UK, and vice versa, under the current post-to-post scheme.

6) Obstacles to the extension of the schemes to other countries

The limit of these exchange schemes is that so far they affect, with few exceptions, only countries whose (main) language has a considerable language learning market elsewhere. This is particularly true for UK, France and Germany whose state language is widely taught abroad. These schemes would be more difficult to implement with teachers from countries whose language is hardly spoken anywhere else.

This is also reflected by the strong imbalance between supply and demand in teachers' mobility. The problem is that there is a tremendous number of teachers of English from all over Europe wishing to work in the UK or Ireland. Over 70% of the respondents of the survey were teachers of English. But there are few opportunities in UK and Ireland, given that they account for less than 12% of the total population of the states included in the study, and given the weak demand for foreign language courses in these two countries – the

demand for the mother-tongues of many respondents is close to non-existent. Considering that the English-speaking countries can certainly not cope with the demand themselves, the question is to know where these teachers could go to teach English.

Conversely, qualified teachers from the UK or Ireland wishing to work abroad as teachers of English do not face any problems. There may indeed be a greater demand for them than can be met. This imbalance between supply and demand constitutes a major problem by reference to the scheme development.

Therefore, while language teachers, especially the young, are highly motivated to experience mobility, it is clear that there is a profound problem caused by the difference between the very large potential demand for placements and the very limited opportunities that are likely to exist in the handful of member states in which most would aspire to work. In particular, there is likely to be a strong over-subscription associated with English teachers.

7) Recommendations

A way of allaying this imbalance would be for exchanges into these two countries (the UK and Ireland) from the rest of Europe being generally for a single term, or perhaps two in some cases. This would increase the number of possible placements by having two or three exchanges per year instead of one. However, this would produce very serious organisational problems for the management of the host schools.

Member States should be encouraged to increase the number and range of exchange opportunities. The scheme could be extended to countries in which in-coming teachers would not be teaching their mother tongue but rather a language they have trained to teach; neither would be a state language in the host country.

The authorities should improve the dissemination of information about mobility opportunities. Some countries should make the process more transparent. The study has detected, in at least some countries, a high degree of frustration among prospective mobility candidates, who learn too late about placement opportunities.

Where governments believe that temporary transnational mobility schemes for teachers of foreign languages might fuel permanent migration, the acceptance of a return clause commitment on the part of applicants for a foreign language teaching post might be included in the selection procedure.

8) Conclusions:

The study *Detecting and Removing Obstacles to Foreign Language Teaching Abroad (DROFoLTA)* investigates the system of post-to-post exchanges operating between a limited numbers of countries in Europe. These programmes offer serving teachers with fixed contracts a unique way to update their language skills, gain knowledge of another education system and experience the culture of another country. These schemes offer a possible way of successfully removing barriers to mobility and particularly in allaying concerns about job stability, income, costs and replacement.

This study gives some valuable insights into the issues of transnational mobility of teachers and the factors influencing the geographical mobility of teachers, in particular management factors and the existence of mobility schemes.

The study results show that the post-to-post mobility schemes help to address some of obstacles to teachers moving abroad in offering a structured post exchange. In particular they overcome obstacles related to the impact of migration on professional circumstances,

including the portability of pensions, salary, and the ability of the individual school to find a suitable replacement.

This tends to confirm the hypothesis stating that exchange programmes implemented between member states will increase the geographical mobility between countries, in so far as these exchanges effectively address the obstacles to mobility.

However there are limits to the possible extension of the schemes, due to the structural imbalances between the supply and demand in geographic mobility. The existing schemes are implemented between a limited numbers of countries and affect a very limited number of teachers. It remains to be seen how these schemes could be extended to a large number of countries, in the context of a demand for mobility focused on English speaking countries.

Additionally, existing schemes are limited in the way they address financial obstacles (due to the difference of costs of living) and also personal and family circumstances which are all the more important as a very high proportion of teachers are women.

Finally, it is worth mentioning that these schemes are more a kind of in-service training activity than an incentive for teachers to work in another country on a long term basis.

2. DG INTERNAL MARKET: Database of the movement of regulated professions

Background to the DG Internal Market data

In order to facilitate the exercise of freedom of movement as established in the EC Treaty, several legal instruments on the recognition of qualifications have been adopted. Directive 89/48/EEC sets in place a general system for recognition of diplomas aimed to facilitate the taking up or the pursue of a regulated profession in a Member State, other than the one in which the migrant has obtained his/her qualifications. It was amended by Directive 2001/19/EC, which aimed among other things to simplify procedures, when examining an application for the recognition of a diploma. The host Member State has to take into consideration the experience acquired by the applicant after obtaining the diploma, and may no longer systematically require the applicant to take compensation steps, such as aptitude tests or an adaptation period. A still more recent Directive (2005) will repeal previous Directives when the transposition deadline expires on 20 October 2007. Under the terms of the new Directive, for instance, nationals of a Community Member State may provide services on a temporary basis in another Member State under their original professional title without having to apply for recognition of their qualifications. However, in order to do so, they have to provide evidence of two years of professional experience if the profession in question is not regulated in that Member State. The general system for the recognition of professional qualifications is of value to fully qualified teachers, among other professions.⁸

The Member States of the EU are obliged to implement the directives on the recognition of professional qualifications. These directives set out the basic principles, while the details of the implementation remain the competence of the Member States. In cases where a Member State regulates the teaching profession any citizen from another Member State needs to ask for the "recognition" of his/her professional qualifications in order to exercise the profession. Under the current European legal provisions on the recognition of professional qualifications and in cases where a profession is regulated, the same rules apply to the temporary provision of services as they do on migrants, which establish themselves in the host Member State. This means that in both cases an application for recognition of qualifications needs to be submitted to the competent authorities. The status of the school - private or public - is irrelevant. The EU Member States provide the data to DG Internal Market, based on their legal obligation, from which the figures below are drawn.

The net inflow and outflow can be calculated for each country based on the data provided by DG Internal Market. However this should only be used as a guide to the movement of teachers between European countries. It has to be stated that it is up to the Member States to report these numbers on recognition of qualification so the figures discussed might not provide a full account of yearly mobility. This might be the reason why for some years a very low figure is presented and there might be more mobility between the Member States than is covered by the figures presented below since some teachers and trainers might work in another country without getting their qualifications recognised. Nonetheless, the DG Internal Market data provide a good indication on between which countries mobility is higher and its gives an idea of the relative scale of mobility within Europe

⁸ Williams G., Strubell M., Busquet J., Solé D., and Vilaró S., *Mobility: Detecting and Removing Obstacles to Foreign Language Teaching Abroad (DROFoLTA)*, Report to the European Commission Directorate General for Education and Culture, July 2006

Ratification of secondary teacher qualifications within Europe (1997-2004)

	AT	BE	CH	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	SE	SI	SK	TOTAL	Inflow / Outflow
AT	0	0	0	0	41	0	0	1	2	3	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	58	-218
BE (Fr)	1	0	0	0	1	1	0	14	0	15	3	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	37	
BE (Ger)	2	0	0	0	24	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	
BE (Fl)	3	0	0	0	18	0	0	13	0	3	7	1	1	0	0	2	0	0	0	0	0	120	0	0	3	0	1	1	173	51
CH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-18 !
CZ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-51 !
DE	107	8	0	0	0	6	0	59	3	26	41	2	0	2	14	17	0	0	0	0	0	14	3	0	1	2	0	0	305	-220
DK	0	0	0	0	9	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	2	0	0	1	0	0	16	-39
EE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	-7
ES	8	17	1	13	14	1	0	0	0	70	104	0	0	13	0	36	0	0	0	0	0	4	0	0	9	4	0	0	294	-1142
FI	6	2	0	0	18	0	0	2	0	1	6	2	0	0	0	1	0	0	0	0	0	5	0	0	2	35	0	0	80	24
FR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-342 !
GB	60	36	10	37	133	3	3	1215	38	101	0	156	93	323	3	58	0	24	0	2	10	76	25	220	65	37	0	55	2783	2229
GR	1	0	0	0	1	0	0	0	0	3	6	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	19	-171
HU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-95 !
IE	1	1	0	0	1	0	0	3	2	2	272	4	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	288	-59
IS	0	1	0	0	14	16	0	1	1	6	10	0	0	0	0	1	0	0	0	0	0	5	15	0	0	14	0	0	84	67
IT	50	9	2	0	33	0	0	65	0	14	29	8	0	1	0	0	3	0	0	0	0	6	0	3	3	2	0	0	228	69
LI	18	0	4	0	6	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	31	26
LT	2	19	0	0	26	0	0	0	0	57	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	94
LU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-5 !
MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-10 !
NL	13	89	0	0	163	17	0	28	0	14	35	10	0	7	0	4	0	0	0	0	0	0	2	0	4	9	0	0	395	159
NO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-54 !
PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-230
PT	1	3	0	0	1	0	0	26	0	18	7	0	0	0	0	25	0	0	0	0	0	2	0	0	0	0	0	0	83	-6
SE	3	1	1	1	22	11	5	8	10	8	14	1	1	1	0	5	0	0	0	0	3	0	2	7	7	0	0	0	111	5
SI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1 !
SK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-56
TOTAL	276	186	18	51	525	55	8	1436	56	342	554	190	95	347	17	159	5	24	0	5	10	236	54	230	89	106	1	56	5131	

! = Data row uncertain

Note Qualifications achieved in Columns and ratified by Row

High mobility is highlighted in red.

Source DG INTERNAL MARKET 2006

Ratification of primary teacher qualifications within Europe (1997-2004)

	AT	BE	CH	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	SE	SI	SK	TOT	Inflow / Outflow
AT	0	1	0	0	32	0	0	2	0	1	2	0	0	1	0	5	0	0	0	0	0	1	0	0	0	0	0	0	45	-10
BE (Fr)	0	0	0	0	0	0	0	0	0	24	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	28	
BE (Ger)	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	9	
BE (FI)	2	0	0	0	2	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	0	0	51	-449
CH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-30
CZ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2
DE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-215
DK	3	0	0	0	22	0	0	1	3	2	3	1	0	2	8	1	0	0	0	0	0	1	12	0	0	3	0	0	62	1
EE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES	1	8	0	2	4	0	0	0	0	8	73	0	0	24	0	2	0	0	0	0	0	2	0	0	11	3	0	0	138	32
FI	1	0	0	0	4	0	0	1	0	5	14	0	0	0	0	0	0	0	0	0	0	2	1	0	0	11	0	0	39	29
FR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-79
GB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1773
GR	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	-25
HU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-7
IE	0	3	0	0	2	2	0	5	1	0	1489	2	0	0	0	2	0	0	0	0	0	3	0	0	0	1	0	0	1510	1474
IS	1	0	0	0	8	21	0	4	1	2	8	0	0	0	0	0	0	0	0	0	0	2	18	0	0	13	0	0	78	64
IT	9	3	0	0	6	0	0	16	0	3	7	2	0	0	0	0	2	0	0	0	0	3	0	0	0	2	0	0	53	9
LI	5	0	28	0	0	0	0	0	0	0	0	0	0	0	0	1	14	0	0	0	0	0	0	0	0	0	0	0	48	32
LT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2
LU	0	83	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85	85
LV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1
MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	26	434	2	0	102	21	0	56	4	15	139	18	4	8	0	8	0	2	0	0	0	0	14	14	7	7	0	2	883	798
NO	1	1	0	0	13	15	0	5	1	1	15	3	2	1	5	1	0	0	0	0	0	15	0	7	0	20	0	1	107	54
PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-22
PT	3	3	0	0	11	1	0	12	0	17	7	0	0	0	0	24	0	0	0	0	0	2	0	0	0	0	0	0	80	62
SE	2	1	0	0	4	1	0	2	0	0	13	0	1	0	1	0	0	0	0	0	1	3	8	1	0	0	0	0	38	-22
SI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3
TOTAL	55	537	30	2	215	61	0	106	10	79	1773	29	7	36	14	44	16	2	0	1	0	85	53	22	18	60	0	3	3258	

! = Data row uncertain

Note Qualifications achieved in Columns and ratified by Row

Source DG INTERNAL MARKET 2006

3. Case study Germany: Mother Tongue Lessons in Turkish

1) Introduction

The case study⁹ aims to evidence the case of geographic mobility when there is a demand/need for teachers in the country of immigration in specific subject areas. More specifically this case study for Germany supports the hypothesis that:

'Countries in which pupils from foreign background have a specific right to being taught in their native language will have a higher demand for foreign teachers.'

The case study consists of a national programme called 'Muttersprachlicher Ergänzungsunterricht' (Mother Tongue Lessons – MTLs), which takes the form of afternoon classes for children of immigrant background in their mother tongue. The MTL is separate from the national curriculum. It operates under three models across Germany, which is Lander dependent. In Germany it is important to note that most of the schooling responsibilities are Lander-based, which is why a uniform national picture does not exist for this programme. The key influencing factors for having the MTLs are:

- The Lander;
- The proportion of immigrant children in a Lander;
- The proportion of immigrant children in a given schools (which is also linked to the extent to which a school is based in a rural area).

To get a national idea of the MTLs programme, the case study illustrates the broad national guidelines and discusses the case of two specific Landers that are representative of the general modalities.

The differentiating aspect in the *implementation* of MTLs is whether the Lander-based ministries responsible for education are running/managing it, or whether it is left for embassies to run it themselves (this means that every individual embassy would be responsible for their own country-group as opposed to a single point at ministry level). Whilst this already represents two distinct models, there is a third way, which is cooperation between the two structures. More details on these different models outlined below.

2) Objective, methods and approaches

Objectives

MTLs exist for all children of immigrant background. However, the most compelling case applies to Turkish speaking children given the strong history of migration from Turkey into Germany.

The Turkish MTLs have been in place in Germany for the last 30 years. The principles of the scheme originated in the unilateral Turkish-German agreement of 1957. Following from this, Germany and Turkey signed the 1961 agreement of supply of Labour. This saw the entry into Germany of many Turkish so-called 'Gastarbeiter' (guest workers). Until 1973, these workers were allowed to come to Germany for work on fixed term contracts, however without their families. The agreement was reviewed in 1973, finally allowing these guest workers to come into Germany on fixed term contracts with their families. As these contracts assumed that families would eventually return to Turkey, this led to the debate over mother tongue teaching. Indeed, both Germany and Turkey agreed that these children should not be disadvantaged when returning to their country of origin. It was seen as important for children to maintain their mother tongue and therewith maximise their chances to be successful in their own country upon return.

⁹ The case study is based on a series of interviews with individuals from relevant organisations.

In 1977, the Council adopted the Decision on mother tongue teaching, from which Germany then built its MTL system (in line with its previous agreements with Turkey). What is important to note is that, officially, there is no legal basis for MTL in Germany, however, it has been enshrined in Lander and immigrant social inclusion practice for the past 30 years. An offspring of the Turkish speaking MTLs has been that Germany now sponsoring 'Anatolien Gymnasiums' in Turkey, which are German speaking high schools.

There are sound mechanisms in place to coordinate MTLs in Germany, the main being the Mixed Committee of Education Experts in Germany – The modalities of the MTL system at large is defined by this committee.

Since the introduction of MTLs, it is important to note that the context in Germany has changed. For example since the 1990s, workers from Turkey are allowed to become permanent workers - the MTLs have, however, not stopped. Whilst Germany had to adapt to other aspects of immigration since the 1990s, it has, however, not revoked the MTLs on the basis that every child should have the opportunity to maintain its mother tongue within its country of migration. As stressed by the Nordrhein Westfalen case, whilst the objective of a successful return to a country of origin is not valid anymore for most children today, the case of pluri-language education has strongly taken over the argument to continuing MTLs in Germany.

Today, the MTL attracts excellent teachers from Turkey to work in Germany. A positive side effect today is that more and more German speaking teachers from Turkey are available, demonstrating the establishment of a real bilingual exchange.

Methods

Please note that what constitutes a 'need' is clarified in a later section of this chapter. Also, a further section will outline how the recruitment process takes place in Turkey, and what teachers are eligible for recruitment (what their background is).

The basic three systems operating in Germany are (Taking Turkey as the single country for purpose of example):

Joint Lander-Ministry/Embassy led - (such as for example in Bayern); taking the process for Turkish recruitment:

- The Lander will give a list of schools to the embassy where there is an identified need for MTL.
- The lists would say that teachers are needed in this area, on the basis of X number of pupils in X number of schools.
- The embassy examines the list, which it approves and sends to Ankara. The embassy then liaises with the Ministry of Education in Ankara who opens a competition.
- The embassy then draws a list of successful candidates, which it sends back to Bayern. Visas are dealt with by the Lander and the embassy together. Teachers are paid by the Lander Bayern.

Lander-Ministry led - (such as for example in Nordrhein Westfalen):

- The Lander announces a need for teachers, thus it only informs the embassy of a recruitment process.
- The Lander then directly liaises with the Ministry of Education in Ankara – the procedure is the same, only the embassy does not play a brokerage role.
- The Lander takes care of recruitment, visas and payments.

Embassy-led (such as for example in Berlin):

- The embassy identifies the need for teachers through communication with Turkish parents committees and other committees it liaises with. The embassy makes lists and liaises with the Ministry of Education in Ankara.
- In the past, the authorities of Berlin paid for the teachers, however that has stopped in the 1990s. Since then the embassy has been paying for Turkish teachers in Berlin.

The case study thus focuses on two approaches, which imply a different coverage:

- The Embassy-led system, illustrated through Turkish MTLs led by the Turkish embassy.
- The Lander-Ministry-led system, illustrated through the Ministry-led scheme in Nordrhein Westfalen, encompassing all languages and groups taught under MTLs

3) Content

Every year, new teachers come into Germany to teach under the MTL scheme. The duration of their stay varies by Lander and system: Under the Berlin system for example, teachers brought in by the embassy stay 3 + 1 years. In Nordrhein Westfalen, these teachers can be assigned to several schools, and length of stay varies depending on overall teacher recruitment.

Using Turkey as an illustration of scale: today, a total of 187,000 Turkish children are receiving MTLs of around 550,000 children from Turkish families in Germany. In Berlin alone, around 100 schools provide MTLs for Turkish children. Usually, there is a minimum of 12 children per MTL class, which can sometimes go up to 20. A need for MTL is defined by a minimum of 12 children to be taught in their mother tongue.

This need is identified either by schools (when under the Lander-based system), or by immigrant parent committees that Embassies are in touch with (when under an Embassy-led system as in Berlin). In the latter case, the embassies organise conferences with large parent committees (of which they are hundreds in Germany) so as to ensure all migrant groups are aware of the availability of MTL for their children in Germany. There is even a federation of Turkish parent committees, which is an important actor in MTL and dissemination of information to families.

MTL profile

- Depending on the Lander, children attend MTLs on average for 2-4 hours a week; some Lander have 8 hours a week intensive MTLs on offer.
- The classes mostly take place within schools in the afternoons; they are not part of the general German curriculum.
- If a system is not school/Ministry-led, the embassies usually collaborate with schools to obtain classroom premises, or else find alternative local premises.
- Receiving MTLs is purely voluntary; participation is based on the social incentive for these families.
- Children from primary school right until high school graduation can attend these MTLs – they can do so throughout the 13 years of schooling if they want to. There is no restriction on the duration of MTLs.
- Only very few schools (in Nordrhein Westfalen) run obligatory MTLs for some children of Turkish Language. The Richard Koch Gymnasium (High School) for example runs these obligatory lessons – the key factor is that there is a disproportional level of Turkish children in the area.

- In other isolated cases, Turkish is now also taught as a second language to German children.
- Other MTLs-type schemes can be organised by civic societies which often take place at weekends in the context of community based lessons. They do not fall under the official MTLs, but are similar to them. For example, Turkish born teenagers could run little classes with local Turkish children; courses could be run by the Mosque-Committees etc.
- MTLs are done exclusively in the mother tongue language. The core teaching in these lessons is grammar, reading and the country specific literature.

Teacher Profile

Teachers coming into Germany under MTLs are fully qualified. Using the Turkish case as an illustration: teachers must have graduated from university (or so called educational faculties) in Turkey; they must have obtained the obligatory civil servant examination, they must have their teaching application accepted by the Turkish Ministry of Education; and they must have completed their teacher training.

To come to Germany, teachers must wait for a competition round to open. Teachers volunteer and apply to the Turkish Ministry of Education to be considered. All applicants must pass a written and an oral examination. In the case of Turkish teachers, the oral examination panel consist of representatives of the Ministry of Education and a representative from the Cultural department of the Ministry for Foreign Affairs.

When accepted onto the scheme, teachers are given specific training in their country of origin, much of which is on the German language, education system and content of MTLs.

In the case of Turkish teachers, increasing numbers of applicant teachers over the past few years already master the German language. This is a positive consequence of Turkish teachers who might have lived in Germany when they were younger or because of the German-sponsored Anatolien Gymnasiums in Turkey. These candidates can be exempt from the pre-MTL training.

4) Main outputs/outcomes

- There are on average 1,600 teachers from Turkey alone in any given year. While Turkish is the most spoken foreign language in Germany (and thus the most representative case), MTLs expand to many other languages, largely depending on the profile of immigrant populations in a given Land. For example, in Nordrhein Westfalen, 19 languages are available under MTLs.
- Around 187,000 Turkish children alone benefit from MTLs on average. In Nordrhein Westfalen alone, 108,000 children benefited from MTLs in 2003/04, of which 70% were Turkish MTLs. In this particular Land, the Ministry funds 866 teachers for all MTLs.
- Furthermore, in Nordrhein Westfalen, there is also additional German teaching available to immigrant children in years 5 and 6, and further funds have since gone into support for young people from immigrant background to successfully manage the transition from school to work.

Successes

The basic success is that the scheme has positively confirmed a common educational observation: it is proven that children living in a country other than the country of their origin and who have good command of their own language, will more easily master the language of their country of residence. What MTLs have reinforced is that children who attend MTLs are more successful in school in Germany than immigrant children who do not. It is then also easier for them to integrate

socially and, if they return to their country of origin, it helps them to be successful in their own language whilst having the advantage of mastering another language.

The Turkish MTLs was the initial scheme based on the historical links between Germany and Turkey, from which as many as 19 different MTLs have emerged in some Lander (i.e. Nordrhein Westfalen being one).

The success of the schemes thus comes from the fact that: whilst it rests on an established educational advantage and offers real social and educational benefits, it has also been fully embedded into the German educational principles, adapting to Lander-based contexts and being sufficiently flexible to adapt to a Lander's immigration profile. It is governed by a set of clear principles and rules, and has been given official status (though it does not actually have a legal base).¹⁰

Barriers/challenges

Probably the main barrier is that, while Germany accepts the need for MTLs, there is an increasing lack of government funding to support it – in Berlin, individual embassies have since had to carry the burden. General barriers are well illustrated by looking at the Turkish MTL case:

Whilst 187,000 pupils attend MTLs on average, it still only represents a minority when considering that around 550,000 Turkish children live in Germany. When not compulsory (as only happens in very few schools), the main challenges that prevent more children to attend are largely:

- As MTLs are organised in the afternoons after schools, these are not obligatory. There is thus no real incentive for families to send their children other than the social incentive. One observation is that educated families are then more likely to send their children to MTLs and make up for the need for MTLs (and thus the intake of teachers under a given MTL scheme). These are usually the children who also attend MTLs on a continuous basis throughout their schooling.
- Another factor affecting demand, and thus the intake of teachers, is the minimum threshold of 12 pupils per MTL class. By definition, this excludes areas where there are less immigrants of a given nationality. A consequence of this is that MTLs are largely available in cities, and many rural areas are excluded.
- For Lander where Ministries and schools are not in charge, it can be difficult for embassies to find classrooms premises for MTLs to take place. Providing classrooms premises is up to school directors – though this happens only in isolated cases, it can be an organisational barrier to MTLs.

Transversal elements

- The level of education in MTLs runs from primary right through to high school level.
- In most Lander, children do not obtain diplomas, but they get an informal certificate. However this varies by Lander: for example in Nordrhein Westfalen, children entering secondary education and who have regularly attended the MTLs take an examination in their mother tongue that is the equivalent of the level sought at that age in their country of origin.

¹⁰ There was not official evaluation to obtain, thus findings are based on interviews and factual information/ However Eurydice does mention the specificities of the Mother Tongue Lessons in: *Integrating Immigrant Children into Schools in Europe – Country Report Germany 2003/04*.

- The level of education expected of teachers is generally ‘fully qualified teachers’, meaning not teachers who are still training.
- Subject areas are grammar, reading, and national literature. It used to contain religion, however, legally, In Germany this now has to be in German (note that German schools have religion teaching in primary classes) – meaning that it can not run through MTLs anymore.

5) Conclusions

The German case study on ‘Muttersprachlicher Ergaenzungsunterricht’ (mother tongue lessons – MTLs) provides substantial evidence towards the assumption that geographic mobility is influenced by a demand/need for teachers in a country of immigration in specific subject areas. More specifically this case study for Germany supports the hypothesis that:

‘Countries in which pupils from foreign background have a specific right to being taught in their native language will have a higher demand for foreign teachers.’

Enshrined in the 1977 Council Decision on Mother Tongue Teaching, MTLs have now been in place for 30 years. Initially, the objective was to provide children from guest worker families with an opportunity to maintain/learn their mother tongue in view of their return to the country of origin. The underlying principle was not to disadvantage these children. It was further built on the educational observation that children in command of their own language more easily gain command of German (and are therewith more likely to be successful in school). Whilst the context has since changed and guest workers have access to permanent employment, MTLs have, however, not been revoked. Indeed, the MTLs have been successfully recycled into a more modern case whereby pluri-language education has strongly taken over the argument to continuing MTLs in Germany.

An important element of the German education system is that it is very much Laender-based, to which these MTLs are well adapted (whilst adapting to regional immigration population profiles). Because of the Laender differences, the case study was built on two representative cases:

- The case of Turkish MTLs in the form of embassy-led schemes (The Turkish community is by far the vastest in Germany, with 2.7 million individuals of Turkish origin)
- The case of Nordrhein Westfalen and its Ministry led total of 19 MTLs, as being one of the Laender with the greatest immigration quotas.

The evidence clearly suggests that the need and agreements have created mobility between countries, though the demand varies by target group and Land. For Turkish alone, 187,000 received MTLs on average, with an average 1,600 teachers from Turkey alone in any given year. While Turkish is the most spoken foreign language in Germany (and thus the most representative case), MTLs expand to many other languages, largely depending on the profile of immigrant populations in a given Land. For example, in Nordrhein Westfalen, 19 languages are available under MTLs. Here, 108,000 children benefited from MTLs in 2003/04, of which 70% were Turkish MTLs. In this Land alone, the Ministry funds 866 teachers for all MTLs. Teachers coming into Germany under MTLs are fully qualified.

The success of the schemes comes from the fact that: whilst it rests on an established educational advantage and offers real social and educational benefits, it has also been fully embedded into the German educational principles, adapting to Laender-based contexts and being sufficiently flexible to adapt to a Land’s immigration profile. It is governed by a set of clear principles and rules, and has been given official status (though it does not actually have a legal base). Furthermore, to this date, they are the demonstration of active financial and operational cooperation between authorities of different countries, which supports the maintaining of standards for teachers and teaching in a foreign country. Finally, these programmes carry benefits of inter-country teacher

mobility and education benefits toward developing maintaining and developing multi-linguistic individuals. And as the Turkish case illustrated, there is potential for a return on that investment, as increasingly more German speaking teachers start to emerge from Turkey.

4. Policy measures per country to keep or restore the balance between demand for and supply of teachers (related to section 6-7)

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
Austria	<ul style="list-style-type: none"> ▪ Teachers aged over 56.5 years may retire prematurely, with a reduction in their pension benefits. ▪ To allow teachers to care for their children, parental leave can be taken up to ten years. ▪ Teachers can take advantage of maternity (or paternity) leave and part-time work. ▪ Teachers can take a sabbatical, with a one-year exemption from teaching assignments and a reduced salary over a five-year period. 	<ul style="list-style-type: none"> ▪ To attract new teachers, schools and provincial education authorities advertise educational “success stories”. ▪ Campaigns are run by teachers’ unions to better inform people about why teaching is important and what it really involves. ▪ A number of initiatives have been taken to tackle the teacher surplus problem through programmes for qualified teachers. These programmes allow them to train to work in educational settings such as adult education or as coaches in the information and communication sector. 	<p>Within a wider set of activities around international exchanges, Austria developed the <i>Action Plan Mobility</i>. It is a comprehensive agenda with the following main components/ objectives:</p> <ul style="list-style-type: none"> ▪ Education and training of (mobility) multipliers ▪ Exchange of (mobility) multipliers. ▪ Linguistic and cultural support before and after mobility. ▪ Practice periods for language teachers. ▪ Promotion of the European language portfolio concept. ▪ Language support (e.g. establishing of language centers at universities). ▪ An electronic mobility portal has been established and the development of web based education and training modules promoted. ▪ Development of bilateral / multilateral courses and

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
			<p>programmes.</p> <ul style="list-style-type: none"> ▪ Coherent introduction of ECTS and a credit accumulation system. ▪ Better statistical data ▪ Better co-ordination between the various actors involved in mobility activities. ▪ Private sponsoring. ▪ Social support measures and reduction of legal barriers towards mobility. ▪ Summer universities.
Belgium French Community	Discussions are under way to take measures, such as lightening the workload of teachers after the age of 55, in order to keep them in the profession beyond the minimum retirement age.	<ul style="list-style-type: none"> ▪ As of 2001/02, those registered as unemployed and willing to train as lower secondary teachers for mathematics, sciences, ITC and foreign languages can continue to receive unemployment benefit for the duration of their studies. ▪ Possibility of special leave in the private sector, to enable employees to take time off for teaching. ▪ A media campaign to improve the image of teachers, to highlight the positive sides of their jobs to the public. ▪ The introduction of the CAPAES for teaching staff in short-cycle higher education is a way of improving training at that level, particularly in the educational science 	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		<p>departments of the hautes écoles.</p> <ul style="list-style-type: none"> ▪ Possibility to train as a teacher in adult education institutions that offer very flexible terms. There are no fixed entry qualifications to these courses and many of those taking these routes are mature students, often in the process of changing careers, who fit the training around other jobs or around employment as an unqualified teacher. 	
Belgium Flemish Community	<ul style="list-style-type: none"> ▪ Better financial arrangements have been made for working overtime 	<ul style="list-style-type: none"> ▪ Both the Flemish and French-speaking communities in Belgium make it possible to train as a teacher in adult education institutions that offer very flexible terms. There are no fixed entry qualifications to these courses and many of those taking these routes are mature students, often in the process of changing careers, who fit the training around other jobs or around employment as an unqualified teacher. ▪ The “Word-leerkracht” (become a teacher) campaign 	No specific measures found
Belgium German Community	No specific measures found	No specific measures found	No specific measures found
Cyprus	No specific measures found	<ul style="list-style-type: none"> ▪ In the school year 1999-2000, the pre-service course took on a new 	The local academic staff are encouraged to make use of other financial

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		<p>format as a full academic year course with two days a week spent attending the course and three days in a school with a Mentor teacher.</p> <ul style="list-style-type: none"> ▪ A special programme for the in-service training of teachers in technical schools awards credits which count towards promotion, to those successfully completing the course. The programme aims to enhance the quality of education through a concerted effort to improve teaching standards. It is offered on a voluntary basis and during teachers' free time. 	<p>resources (research/ staff development funds) in order to meet the expenses of mobility participation.</p>
Czech Republic	<p>In 2001 the Government approved the 'National Programme of Education Development in the Czech Republic' which aims:</p> <ul style="list-style-type: none"> ▪ to improve the position of teachers, including salary increase; ▪ to increase the quality of teachers' education and training including the development of a teacher standard, improving the attractiveness of the profession, improving co-operation with schools to ensure practical experience; ▪ to create a link between career and 	No specific measures found	<p>Some countries use incentives to attract teachers to geographical locations experiencing difficulty in recruiting suitable candidates. Certain municipalities in the Czech Republic offer housing to teachers willing to work in one of their schools.</p>

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
	wage progression; to create a system of human resources management in the school sector.		
Denmark	<ul style="list-style-type: none"> ▪ Additional support is provided for teachers at the beginning of their career through greater provision for teamwork, mentor schemes and a reduced teaching timetable. Other incentives include: higher wages for young teachers at the beginning of their careers, extra pay for specific qualifications, help in finding accommodation, fully paid in-service training opportunities, extra time allocated to preparation for schoolwork in groups. ▪ To retain older teachers, suggestions include bonus schemes and less contact hours. A further idea is to increase teachers' working time by one hour across the board. The extra hours might be used to cover the predicted shortfall in new recruits. It is being debated whether one should give experienced teachers special benefits to keep them on the job longer. Trade unions 	<ul style="list-style-type: none"> ▪ There is a proposal to allow persons other than graduates from teacher training colleges to teach in the folkeskole. A change to the Act on the folkeskole would be required in order to admit either people without teacher training but sufficient subject-specific competence, or educators into the teaching profession. Subject specialists would be required to supplement their education with pedagogical training, while educators would need to acquire the necessary subject knowledge. ▪ People with other educational backgrounds are offered places at colleges of education, making it possible for them to finish their teacher training within a year or two. Many work as substitute teachers for a few days a week while they attend college. 	<ul style="list-style-type: none"> ▪ Denmark experiences difficulty in attracting teachers to municipalities far from the capital, some of which have started to offer relocation or housing bonuses to potential takers. ▪ In Denmark long-time mobility of one year or more is virtually non-existent. At present there are no applicants for the rare multi-annual exchange programmes with other countries, like the three-year programmes with Germany. Even medium-term mobility, from two months, up to a year, is in very little demand. In 2001 only 11 teachers made use of this possibility. Only the short-term mobility (maximum 1 to 2 weeks), linked to the European educational programmes (mainly Comenius and Lingua, as well as ARION for some

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
	and employers alike point out that experienced teachers should be offered shorter hours and mainly teach the subjects they feel comfortable with.		teachers) but also to multilateral programmes (Nordic Council with the group of Denmark, Finland, Norway and Sweden as well as the Faroer islands and Greenland) and some bilateral partnerships, show more encouraging results. In 2001, 415 teachers have been involved in short-term mobility.
Estonia	No specific measures found	Teachers who are not fully qualified are offered the opportunity to obtain teaching qualifications in subjects which are in demand (Estonian as a second language, English, special needs). Local authorities in Estonia may offer extra pay to attract potential candidates to teach these subjects.	Students can receive grants in exchange for a commitment to take up a post in areas with teacher shortages, like rural areas and the islands.
Finland	No specific measures found	The Ministry of Education initiated a three-year expansion programme for teacher education and training at ten universities, with the aid of separate funding. Increases in educational provision have specifically targeted class teacher education, special needs teacher education as well as education of teachers of languages and mathematics and natural sciences. They have been implemented in both Finnish- and Swedish-language teacher education. To date,	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		the programme has achieved the set objectives.	
France	No specific measures found	Over the past decade a series of measures has been designed to attract enough candidates to the teaching professions: publicity campaigns underlining the positive side of the teaching profession; the payment of an allowance equal to minimal legal wage during the first year of study in exchange for a commitment to spend a minimum number of years in teaching if admitted - this allowance is limited to subject areas with a deficit and the number of beneficiaries varies between years and regions; the introduction of "seed modules" in the curriculum of the first two years of university studies which aim to stimulate the demand for the teaching profession and include a short placement in a classroom.	In France, the education authorities decide where teachers will take up their first appointment. They may also apply for transfer under 'mouvement national' arrangements. Around one quarter of teachers with full tenure do so in order to secure more attractive posts. This results in a form of competition, albeit limited, between schools.
Germany	No specific measures found	<ul style="list-style-type: none"> ▪ There are plans to attract subject specialists without teaching qualifications and reduce the training period for people with appropriate professional experience. ▪ A radical suggestion was put forward by the expert council of North Rhine-Westphalia in 2001 to incorporate teacher training into the recently introduced Bachelor's and Master's degree programmes. Specialist subject studies would be 	<ul style="list-style-type: none"> ▪ An amendment to the Public Service Law is planned to introduce measures to further reduce barriers to inter-Länder mobility, and an increase in Länder autonomy in relation to special bonuses for candidate teachers. ▪ In 1999, changes were introduced to allow for more flexibility with regard to the geographical

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		<p>followed by a postgraduate course in teacher training providing candidates with the necessary pedagogical qualifications and skills.</p> <ul style="list-style-type: none"> ▪ The state of Hesse used a national series of adverts to try to headhunt teachers, mainly from East Germany. ▪ Far-reaching image campaigns are intended to strengthen interest in the teaching profession generally, and inspire female A-level students for instance to pursue mathematics and technology-related school subjects. ▪ The Länder have adopted measures to cover the demand for teachers, which varies according to subjects and the type of school. These measures include: <ul style="list-style-type: none"> – advertising campaigns for entry to teachers' training and offers of employment for those who have completed the training; – a forward looking teacher training model to account for teacher shortages (Mixed Commission on Teacher Training) ; – further training for teachers in order to provide teaching in subjects where the demand for teachers is particularly high; 	<p>mobility of teachers. If there is a surplus of teachers in any category in one "Land", it is now easier to apply for similar posts vacant in another "Land", with a greater chance of success.</p>

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		<ul style="list-style-type: none"> – extension of the periods of access to teachers' training; – measures for the recruitment of higher education graduates without formal teacher training – optimisation of employment procedures; – increase of the capacities of teacher training institutes; – provision of wider access to teachers' training for higher education graduates with Diplom and Magister degrees; – increasing capacity at teacher training colleges, at specialised teacher training institutes and in vocational study courses. 	
Greece	No specific measures found	No specific measures found	<ul style="list-style-type: none"> ▪ Short-term mobility is possible in the form of study visits or participation in in-service training courses within the framework of bilateral cultural co-operation, the major programmes of the EU and the Council of Europe. These types of mobility last on average one or a maximum two weeks. In some rare cases a longer period is possible but this is exceptional.

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
			<ul style="list-style-type: none"> ▪ A one-year mobility programme is possible within the framework of co-operation with Cyprus. ▪ Secondment for at least a year is possible to teach Greek culture and language abroad. ▪ Each year the Greek Ministry of Education places 200 mobility grants at the disposal of teachers who want to take up post-graduate studies abroad. 2000 teachers apply for these grants and only 200 are successful. The majority of these teachers do post-graduate studies in Europe and a few in the US. Teachers who are selected can keep a part of their salary and receive a mobility grant. These last for an average of three to three and a half years.
Hungary	Hungary is currently preparing a teaching career model (to be submitted to the government and parliament) that redesigns the status and career paths of teachers. The plan is to make the	Hungary has introduced shortened study programmes to accelerate the training of language teachers.	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
	teaching profession more attractive by giving teachers more responsibility and by substantially increasing their salaries.		
Ireland	No specific measures found	No specific measures found	No specific measures found
Italy	No specific measures found	No specific measures found	No specific measures found
Latvia	No specific measures found	No specific measures found	No specific measures found
Lithuania	No specific measures found	No specific measures found	No specific measures found
Luxembourg	No specific measures found	No specific measures found	No specific measures found
Malta	<ul style="list-style-type: none"> ▪ In Malta, there is a difference in working conditions between teachers recruited before and after 16 January 1979, which relates to the pension obtained on retirement. Whereas the teachers recruited after that date would be eligible to 2/3 of their salary as part of the social security pension, similar to any other employee paying National Insurance, those who were recruited before are entitled to an additional pension, which they can receive as a lump sum on retirement. This latter added bonus makes many teachers recruited earlier than 1979 reluctant to leave state 	<p>Each year, the government selects the subjects or areas of study for which financial incentives (in the form of a monthly grant) are awarded to those who undertake teacher training (the consecutive model only).</p> <p>With effect from October 2002, specialisation in mathematics as a single subject will be offered to attract more prospective teachers to this particular field.</p>	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
	<p>service as otherwise their pension fund would be frozen and consequently stops accumulating.</p> <ul style="list-style-type: none"> ▪ An agreement between the Maltese Union of Teachers and the government in 2001, states that teachers over 57 years of age and with 30 years of experience may opt for a 25% reduction in their teaching load in order to assist in the implementation of the new National Minimum Curriculum. 		
Netherlands	<ul style="list-style-type: none"> ▪ In December 2000, it was decided that flexible pension allowances after the age of 61 will be increased to encourage people to stay in the labour force longer. The government also plans to drop the fiscal advantage of early-pension premiums. ▪ The starting salary for teachers is now similar to the market and the career line has been shortened (from 26 in 1996 to reach the end of the salary line to 18 years in 2002). ▪ Remuneration packages have been made more attractive to increase the 	<p>Recent policy has focused on the need for a more open and diverse system for the supply of teachers. This teacher 'market' is being developed through the introduction of different routes to teaching geared to target groups who may not otherwise consider training for the profession.</p> <p>Recruitment campaigns are launched at regular intervals. A 3-year campaign was launched in 1999 to enhance the image of secondary school teaching and step up recruitment at this level. The campaign especially emphasised the variety in a typical working day at school, as well as the relative independence of teachers.</p> <p>Other measures used include: recruiting people who are still in teacher training, education</p>	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
	competition position with other professions in the labour market.	assistants and lateral-entry teachers (mid-career professionals in other professions who decide to change course and become a teacher), increasing the number of part-time functions as well as opening up again the possibility to work 40 hours a week.	
Poland	No specific measures found	In Poland, there is a system to encourage people from industry to take up a teacher's position in a vocational school. An employer is obliged to release an employee for 6 hours per week or 24 hours per month to take up part time teaching. Poland is trying to meet a current demand for specialist teachers of western languages by helping teachers of other subjects (including Russian) and primary school teachers to retrain. On submission of the relevant advanced language diploma, all teachers not trained in philology and all those who have a higher education qualification may be authorised to teach western languages, provided they undertake appropriate teacher training.	No specific measures found
Portugal	No specific measures found	No specific measures found	No specific measures found
Slovakia	No specific measures found	No specific measures found	No specific measures found
Slovenia	No specific measures found	Slovenia has introduced shortened study programmes to accelerate the training of language teachers.	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
Spain	The primary objective of campaigns in Spain is to raise the image of teachers in order to keep the influx into the profession in line with demand. The message is that teaching is an important task that helps educate independent responsible citizens. The latest of these campaigns ran in Catalonia during the 2000/01 school year and its slogan of 'El maestro, la maestra, el profesor, la profesora. Tu apoyo, a tu lado' (The teacher, your helper by your side) was directed at teachers at all educational levels. An evaluation of those campaigns revealed a positive effect on parental attitudes towards teachers and a rise in teacher self-esteem.	No specific measures found	No specific measures found
Sweden	No specific measures found	<ul style="list-style-type: none"> ▪ Sweden has established the SÄL project that offers full teacher training in only three years. It was introduced as a pilot project in 1999 and will be available between 2002 and 2006. The SÄL project aims to boost the number of teacher training graduates within a short period. The target group consists of teachers already working in municipal schools who are not qualified for permanent contracts. This means the group may comprise either those 	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		<p>without a teacher training degree at all, or those who want to receive further training for work in new areas. Student teachers remain employed by their school, working half time and studying half time. The school provides a mentor for them. SÄL is expected to work well in training for all categories of teacher. It is intended that student teachers should complete the linked work and training within three years.</p> <ul style="list-style-type: none"> Another initiative is a project designed both to attract untrained teachers to finish their degree, and also to support teachers in other subjects to gain an education in mathematics or science. The aim of the nationwide programme is to increase the number of students in mathematics and science by 30%, to increase the number of male students, and students with a foreign background, and also to enable adults who are interested in going into teaching to build on previous experience and professional training and gain a teaching degree. 	
United Kingdom	<ul style="list-style-type: none"> The Keeping in Touch (KIT) Programme was launched by the TTA in 1999 as an information and guidance service 	<ul style="list-style-type: none"> The government's 'Fast Track' programme aims to attract more high quality graduates into teaching by providing opportunities 	The UK has a 'Key Worker Living Programme', which applies to key workers such as police, fireman,

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
	<p>for qualified teachers taking a break from teaching. It aims to equip qualified teachers with the knowledge, skills and confidence needed for return to the profession. Particular incentives are available for those considering returning to teaching after a break from the profession, including support for training and childcare costs, and 'welcome back' bonuses.</p> <ul style="list-style-type: none"> ▪ In Scotland an agreement relating to workload and terms and conditions of employment should assist in ensuring that sufficient numbers of teachers continue to be attracted to the profession. 	<p>to develop rapidly into senior positions.</p> <ul style="list-style-type: none"> ▪ There is a strong policy commitment in the UK both to encouraging a wide range of training providers and to ensuring that schools are actively involved in training new teachers. Higher education institutes wishing to provide initial teacher education must establish a partnership with schools to organise initial teacher education, and schools also have the option of becoming providers in their own right through school centred initial teacher training (SCITT). ▪ Some initial teacher training providers also offer flexible training programmes designed to meet individual needs and circumstances which take into account the previous experiences of trainees. ▪ The Graduate and Registered Teacher Programmes (GRTP) are employment-based routes to Qualified Teacher Status (QTS). The Graduate Teacher Programme (GTP), for example, was initiated in 1998 and is aimed at graduates aged 24 and over. It enables schools to employ teachers who are not yet qualified and to support them through an 	<p>teachers and nursery nurses in schools and further education/sixth form colleges. The programme is available in London, the South East and the East of England where the high cost of housing is affecting employers' ability to recruit and keep staff. It allows teachers (among others) to buy a home, upgrade to a family home or rent a home at an affordable price.</p>

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		<p>individual training programme leading to QTS. Schools training teachers through the programme receive grant payments to help cover salaries and training costs.</p> <ul style="list-style-type: none"> ▪ A range of financial incentives may also be available to prospective teachers. These include training bursaries, support for tuition fees, and 'golden hellos' (cash bonuses) in subjects for which there is a shortage of teachers. ▪ The Teacher Advocate Scheme, launched in 1998, aims to create a cohort of serving teachers prepared to act as positive advocates for the profession. ▪ Use of recruitment and/or incentive allowances to attract and retain staff, especially subject specialists in mathematics and science. About half the Local Education Authorities (LEAs) surveyed were taking advantage of the new discretion to offer their own recruitment and retention incentives, especially in relation to transport and housing. These incentives include the repayment of relocation expenses, subsidised rent for up to two years and subsidised 	

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
		mortgages for up to five years. Several LEAs in London and the south-east, where travel costs are particularly high, are considering subsidising travel cards for teachers, and individual schools already offer their own transport incentives. Other recruitment packages include paying off student loans on appointment, followed by interest-free repayments to the council in return for a 'tie-in' period in post.	
Bulgaria	No specific measures found	No specific measures found	No specific measures found
Croatia	No specific measures found	No specific measures found	No specific measures found
Romania	No specific measures found	No specific measures found	<ul style="list-style-type: none"> ▪ Romania experiences difficulty in attracting teachers to rural and isolated areas. Bonuses are offered under the Rural Education Project. Embedded in a wider decentralisation reform, the Ministry of Education has earmarked \$34 million under the Rural Education project to bring Romania's 1,500 rural schools up to 'civilized standards'. ▪ Authorities offer a bonus corresponding to 5-80% of the salary. The

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
			government reviews annually the list of areas as well as the associated percentage increase in salary.
Turkey	No specific measures found	No specific measures found	<ul style="list-style-type: none"> ▪ Within the framework of LCO (Language and Culture of Origin), the French speaking community of Belgium hosts teachers from Turkey. Teachers who have been recruited for LCO have full access rights to all in-service training courses that are proposed to Belgian teachers within the framework of the 10 days of in-service training that have been provided by the decree of 24 December 1990. ▪ The PLATO programme provides mobility grants for teachers, heads of school and members of the inspectorate to visit colleagues and schools in other countries in order to contribute towards the enhancement of the quality of education and internationalisation. Turkey is one beneficiary country as part of the pan-

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
			<p>European PLATO programme. Other objectives are to make the teaching profession more attractive and to improve the pedagogical competences of the members of the educational personnel concerned.</p> <ul style="list-style-type: none"> ▪ In Germany, Laender offer 'mother-tongue lessons' for children of all origins. The largest group is that of Turkish lessons, for which around 1,600 Turkish teachers teach in Germany in a given year.
FYR Macedonia	No specific measures found	No specific measures found	No specific measures found
Iceland	No specific measures found	In order to meet the demand for teachers, universities have offered non-traditional types of teacher education. In 1979, institutions offered off-campus opportunities for people who had been teaching in primary schools without formal education. This provision was in the form of short courses interspersed with longer periods of self-study in which teachers and students communicated by ordinary letter exchange.	<ul style="list-style-type: none"> ▪ The Iceland University of Education in Reykjavík and Department of Teacher Education in Tromsø University College in North Norway share a long history of obligations towards serving the need for having educated teachers in sparsely populated rural areas in northern latitudes. ▪ Iceland (like Denmark)

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
			experiences difficulty in attracting teachers to municipalities far from the capital, some of which have therefore started to offer relocation or housing bonuses to potential takers.
Liechtenstein	No specific measures found	No specific measures found	No specific measures found
Norway	<ul style="list-style-type: none"> ▪ Measures will be taken to improve the working conditions of all categories of teachers in cooperation with schools. Both legal and financial measures will be considered. Particular attention will be paid to the situation of senior teachers and special measures will be considered to improve their working conditions. The government will also consider possible increases in teacher salaries. ▪ Development of a policy that will make it possible for older teachers to remain in the profession up to the official retirement age. This includes longer vacations, fewer teaching hours and shorter working days. As part of an agreement (between the Ministry of Education and Research and the 	<ul style="list-style-type: none"> ▪ The Norwegian government aims to make teacher education more attractive to young people and encourage qualified teachers to remain in education. Among its projects are the following: <ul style="list-style-type: none"> ▪ In response to high levels of officially non-qualified teachers, government is to make it easier for teachers in this category to complete their formal training involving teaching and studies, in decentralised programmes for teacher education. ▪ The Ministry of Education, Research and Church Affairs will consider what measures can be taken in schools to ease the transition from state college teaching practice to professional teaching in the classroom. ▪ As there is a shortage of qualified teachers in mathematics and physics, the government is envisaging several 	No specific measures found

Policy measure taken to address (potential) imbalances between teacher demand and supply			
Country	In the area of working conditions and legislation related to the teaching profession	In the area of teacher education and training	In the area of geographical mobility (within a country and within Europe)
	<p>Norwegian Teacher's Union) the teaching hours for teachers aged 58 and above has been reduced by 6 per cent. At the same time younger teachers have had their teaching hours increased. By means of compensation the salary was increased proportionately.</p>	<p>measures to encourage specialisation in these fields.</p> <ul style="list-style-type: none"> ▪ Measures will also be taken to improve the ICT skills of teachers in service and improve this aspect of teacher education in colleges. ▪ To help teachers meet the demands for more subject knowledge, the government will spend more money on further education, improve existing programmes and make it easier for teachers in service to secure access to courses and studies. 	

Annex F – Information relating to Section 8

1. Reliability of Replacement Needs Model Data
2. Validation of Replacement Needs Model

1. Reliability of Replacement Needs Model Data

Country	Number of Teachers (By age 1998-2004)	Teaching Graduates	Population projections	Participation Rates	Pupil Teacher Ratio	Projection Possible?	Reliability
Austria	Good	Good	Good	Good	Good	Yes	5
Belgium	Medium	Medium	Good	Good	Medium	Yes	2
Belgium (Fl)	None	None	None	Good	None	No	
Belgium (Fr)	None	None	None	Good	None	No	
Cyprus	Good	Poor	Good	Good	Good	Yes	4 (!)
Czech	None	Good	Good	Good	Poor	No	
Denmark	None	Medium	Good	Good	None	No	
Estonia	None	Good	Good	Good	None	No	
Finland	Good	Medium	Good	Good	Medium	Yes	3
France	Good	Medium	Good	Good	Good	Yes	4
Germany	Good	Good	Good	Good	Medium	Yes	4
Greece	None	Poor	Good	Good	None	No	
Hungary	Good	Good	Good	Good	Good	Yes	5
Ireland	Good	Good	Good	Good	Medium	Yes	4
Italy	Good	Poor	Good	Good	Good	Yes	4 (!)
Latvia	Good	Good	Good	Good	Medium	Yes	4
Lithuania	Medium	Good	Good	Good	Poor	Yes	3 (!)
Luxembourg	Good	Poor	Good	Good	Medium	Yes	3 (!)
Malta	Good	Good	Good	Good	Good	Yes	5
Netherlands	Good	Good	Good	Good	Poor	Yes	4 (!)
Poland	Medium	Medium	Good	Good	None	No	
Portugal	Medium	Good	Good	Good	Good	Yes	4
Slovakia	Medium	Good	Good	Good	Good	Yes	4
Slovenia	Medium	Good	Good	Good	Good	Yes	4
Spain	Medium	Good	Good	Good	Good	Yes	4
Sweden	Good	Good	Good	Good	Poor	Yes	4 (!)
UK	Medium	Medium	Good	Good	Medium	Yes	2
Bulgaria	Good	Medium	Good	Good	Good	Yes	4
Romania	Good	Poor	Good	Good	Good	Yes	4 (!)
Croatia	None	Poor	None	Good	N/A	No	
Turkey	None	Good	None	Good	N/A	No	
Iceland	None	Good	None	Good	N/A	No	
Liechtenstein	None	None	None	Good	N/A	No	
Norway	Good	Good	None	Good	N/A	No	
Macedonia	None	Good	None	Good	N/A	No	

Notes on table

Number of Teachers

Netherlands has no level 0 teacher information

Ireland has unusually small numbers of level 0 teachers.

Norway has no level 0 data

Pupil Teacher Ratios

Good = difference between model calculated and published pupil teacher ratio of <1

Medium = difference between model calculated and published pupil teacher ratio = 1-2.5

Poor = difference between model calculated and published pupil teacher ratio >2.5

Possible Projection

Countries must have comparable data available for all five key variables. For countries which have "None" in any of the columns, it was not possible to calculate projections.

Reliability

Reliability is estimated from the ratings give in each column. 1 point is give for each "Good" rating. "Medium" rating s score no points. Any "Poor" ratings scored are denoted with a (!), drawing attention to possible unreliability caused by a poor rating on one category.

The maximum score is 5.

2. Validation of the replacement needs model

Validation of Key Quantitative Findings based on Key Qualitative Findings by Study Country				
Austria				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 801 (5% of 2004 teachers)	surplus 957 (7% of 2004 teachers)	shortage of 5224 (5% of 2004 teachers)	shortage of 11838 (12% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 26% (of 2009 teachers)	- 25% (of 2014 teachers)	- 10% (of 2009 teachers)	- 20% (of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 11% (of 2009 teachers)	- 10% (of 2014 teachers)	- 6% (of 2009 teachers)	- 15% (of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	1% (of 2009 teachers)	- 5% (of 2014 teachers)	- 4% (of 2009 teachers)	- 17% (of 2014 teachers)
Low supply scenario 2 Number of new	2% (of 2009 teachers)	0% (of 2014 teachers)	-8% (of 2009 teachers)	-21% (of 2014 teachers)

Validation of Key Quantitative Findings based on Key Qualitative Findings by Study Country

entrants reduced by 25%						
	Key data					
	<i>Number of teachers (2004)</i> Level 0: 14609 Level 1: 28397 Level 2 and 3: 71954 Total 1-3 = 100,351	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 11.7	<i>Participation rate (2004) + 16 years old</i> 80%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> -1.4%		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -0.98%	<i>New graduates as proportion of all teachers (2005)</i> 6.5%	<i>Dormant teachers as proportion of all teachers (2005)</i> 80.4%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30yrs: 1.3 30-55 yrs: 0.2 >55 yrs: -2.0		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 0.5%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 71%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td align="center">87.8%</td> <td align="center">185.7%</td> </tr> </table>	87.8%	185.7%	<i>Proportion of female teachers</i> 73%
87.8%	185.7%					

Validation of Key Quantitative Findings based on Key Qualitative Findings by Study Country

<p>Observations from the literature</p>	<p>Demand/supply balance: Teacher education in Austria (TNTEE Publications Volume 2, Nr 2, December 1999, F. Buchberger et al.) indicated that there was an increasing surplus of teachers in Austria for all types of school other than special education and technical and vocational schools. The largest surplus was in general academic subjects. However, acute shortages were reported in business and engineering subjects. There were also regional imbalances in supply and demand.</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • As a consequence of legislative change there have been significant increases in the numbers of pupils with special needs in secondary schools. Adequate teacher training has not yet been developed to accommodate this. • There are increasing numbers of foreign pupils within the school system. Mother tongue instruction is offered in primary schools, hence there is some demand for foreign teachers. <p>Supply: Factors affecting supply include:</p> <ul style="list-style-type: none"> • Salaries have been relatively static • Fewer teachers have the status of civil servants than hitherto • Qualification requirement for foreign teachers are in general stringent <p>Interventions: Measures have been taken to reduce the numbers of teachers in service, these include offering: up to 10 years of parental leave for teachers; one year sabbaticals; and, early retirement. Other measures exist to encourage intra-profession and intra-country mobility. There is also an Action Plan on mobility for Austrian language teachers to encourage them to teach abroad and to undertake study visits and exchanges schemes with new Member States.</p>
<p>Assessment and validation</p>	<p>The perception of surplus is consistent with the relatively low pupil teacher ratio. The anticipated rather small shortages of teachers at secondary level under the base case (and other) projections will most probably lead to demand for vocational teachers considering the high proportion of pupils following vocational programmes in secondary education.</p>

Belgium				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 7,004 (24% of 2004 teachers)	surplus 12,332 (43 % of 2004 teachers)	surplus of 21,723 (12% of 2004 teachers)	surplus 41,322 (22% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	20%(of 2009 teachers)	31%(of 2014 teachers)	8%(of 2009 teachers)	17%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	18%(of 2009 teachers)	29%(of 2014 teachers)	11%(of 2009 teachers)	19%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	14%(of 2009 teachers)	22%(of 2014 teachers)	7%(of 2009 teachers)	12%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	14%(of 2009 teachers)	22%(of 2014 teachers)	6%(of 2009 teachers)	11%(of 2014 teachers)

Key data	<i>Number of teachers (2004)</i> Level 0: 28743 Level 1: 64556 Level 2 and 3: 119938 Total 1-3 = 184,494	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 8.6 ¹¹	<i>Participation rate (2004) + 16 years old</i> 73%	<i>Annual percentage growth/decline in numbers of teachers (2000-2004)</i> 1.7
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 0.4	<i>New graduates as proportion of all teachers (2005)</i> 11.7	<i>Dormant teachers as proportion of all teachers (2005)</i> 74.3	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30yrs: 2.8 30-55 yrs: 0.9 >55 yrs: -1.5
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.4%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> BE nl <i>Min</i> 93.7% <i>Max</i> 160.0% BE fr <i>Min</i> 91.9% <i>Max</i> 156.1%	<i>Proportion of female teachers</i> 69%
Observations from the literature	<p><u>Flemish Community of Belgium</u></p> <p>Demand/supply balance:</p> <p>According to the OECD Country Note on Belgium (McKenzie et al. 2004), shortages in specific subjects in secondary education have also been identified. This is the case in general secondary education for Mathematics, French, Dutch</p>			

¹¹ Eurostat recorded: 10.8

and Religion but mostly in technical and vocational subjects (especially for the subjects nursing and mechanics). In the 1999-2000 school year, 40% of the appointed temporary teachers in technical and vocational subjects had only other qualifications. However, this situation has improved in recent years. For secondary education as a whole, about 16% of all the temporary teachers in 2001 were teaching a subject for which they did not have the required qualifications. At upper secondary level more school principals in Flanders than in any other OECD country reported difficulty in hiring fully qualified teachers in areas such as the language of instruction, Mathematics, Sciences and ICT.

Forecast of demand and supply: how does the education labour market evolve between 2002 and 2006?

Pre-primary education

Because of the growing subscriptions for teacher training at this level for the coming years and a decrease in the number of children there will be a surplus again for 2005. The entry into the teaching profession of teaching graduates is around 95% and the exit percentage after 5 years is around 13%.

Primary education

Fewer teachers will be needed in the coming year because of a decrease in the number of pupils and an increase in the retirement age from 55 to 58 years old. Moreover, there is a spectacular increase in the number of subscriptions for teacher training. For these reasons a surplus of teachers is calculated for the period 2002-2006.

Secondary education

There are some specific subject shortages as well as shortages in specific regions such as Brussels and Antwerp. Overall, a **surplus** is expected for the coming years of 1,046 teachers but account has to be taken of specific shortages in subjects and regions.

Source: Ministry of Education, 'Reform Teacher Training: more practice, more content and quality, better accompaniment, more cooperation', June 2006.

Supply: the factors influencing the supply of teachers include:

- Ageing workforce: a substantial proportion of the current teaching workforce is likely to retire within the next 10 years.
- Flanders has one of the highest proportions of part-time teachers among OECD countries
- the retirement age of teachers was changed from 55 to 58
- The number of teacher education trainees preparing for upper secondary education rose by 8% between 2000-01 and 2001-02 (from 3100 to 3400), reversing the decline in numbers experienced during the 1990s.
- Based on the subscriptions for teacher training courses it is clear that the interest in the teaching profession remains high.

	<ul style="list-style-type: none"> ▪ Unattractiveness of teaching profession compared to the private sector (their purchasing power has decreased in recent years) ▪ Difficulties experiences by newly qualified teachers due to their precarious status, job insecurity, constraints.
Assessment and validation	<p>The base case scenario predicts surpluses at all levels of education. The number of pupils will decrease while the number of teachers is still increasing. The Flemish authorities also predicted a surplus of teachers at all levels.</p> <p>The replacement needs model projects larger surpluses than those predicted by the Belgian authorities. Despite these surpluses, there may be subject and regional shortages.</p> <p>Reducing the number of entrants of the inflow would limit the surplus. Students in Wallonia seem to be less attracted to the profession whereas this does not seem to be the case in Flanders.</p> <p>Shortages are to be expected in vocational education. There is a lack of teachers trained to teach in VET.</p>

Bulgaria				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	shortage of 2,619 (15% of 2004 teachers)	shortage of 5,124 (29% of 2004 teachers)	surplus of 5,707 (7% of 2004 teachers)	surplus of 4,421 (6% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 54%(of 2009 teachers)	- 89%(of 2014 teachers)	7%(of 2009 teachers)	6%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 30%(of 2009 teachers)	- 59%(of 2014 teachers)	- 4%(of 2009 teachers)	- 5%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	2%(of 2009 teachers)	-11%(of 2014 teachers)	20%(of 2009 teachers)	26%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	-20%(of 2009 teachers)	-52%(of 2014 teachers)	6%(of 2009 teachers)	3%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (2001-2004)</i>

	Level 0: 17496 Level 1: 18762 Level 2 and 3: 57609 Total 1-3 = 76,371	13.6	75%	2.5
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -3.2	<i>New graduates as proportion of all teachers (2005)</i> 3.5	<i>Dormant teachers as proportion of all teachers (2005)</i> 115.5	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> NA
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 2.5%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice)</i> NA	<i>Proportion of female teachers</i> 84.5%
Observations from the literature	<p>Demand/supply balance: whereas in recent years the number of teachers has increased, the number of pupils has decreased. This trend is causing major financial problems for the state which could possibly be rectified by closing some schools where student populations are decreasing. Yet, there is a fear that closing schools and increasing the ratio of students to teachers would cause mass unemployment for teachers and also might contribute to school-drop-out, if, in the case of school closures, travel costs for students become unaffordable (OECD, <i>Thematic Review of National Policies for Education – Bulgaria</i>, 2002)</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • Falling teacher/student ratios. • Concerning vocational education, the participation in upper secondary vocational education is around 55%. <p>Supply:</p> <ul style="list-style-type: none"> • The teaching population is ageing. 			

	<ul style="list-style-type: none"> • There is limited salary progression during teachers' careers, which encourages them to move abroad. • The status of the profession is decreasing. • Many students take teacher preparation courses with no intention of entering the profession.
<p>Assessment and validation</p>	<p>The base case projects surpluses at primary and secondary levels. Indeed the number of teacher is increasing when the number of pupils is decreasing.</p> <p>There are no base case projections to validate the replacement needs model. If the number of teachers is reduced, there will be greater teacher shortages than the replacement needs model predicts. The pupil teacher ratio (13.6) is currently higher than European average, reductions in teacher numbers will increase this ratio further.</p> <p>Increasing participation rates and reducing the number of entrants would have a minimal impact on the surplus of teachers for levels 1, 2 and 3.</p> <p>There is currently an outflow of teachers between 30 and 55 (teachers leaving the profession). Stopping this outflow (low supply scenario 1) would increase the surplus.</p>

Cyprus				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 61 (7% of 2004 teachers)	surplus of 11 (1% of 2004 teachers)	surplus of 3,365 (36% of 2004 teachers)	surplus 7,049 (76% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 30%(of 2009 teachers)	- 39%(of 2014 teachers)	26%(of 2009 teachers)	47%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 31%(of 2009 teachers)	- 39%(of 2014 teachers)	14%(of 2009 teachers)	38%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	24%(of 2009 teachers)	32%(of 2014 teachers)	26%(of 2009 teachers)	44%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	5%(of 2009 teachers)	- 4%(of 2014 teachers)	22%(of 2009 teachers)	40%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1999-2004)</i>

	Level 0: 862 Level 1: 3506 Level 2 and 3: 5736 Total 1-3 = 9,242	14.5	90%	2.7				
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -1.8	<i>New graduates as proportion of all teachers (2005)</i> 7.7	<i>Dormant teachers as proportion of all teachers (2005)</i> 25%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30yrs: 1.5 30-55 yrs: - 1.3 >55 yrs: - 2.6				
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 0%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>118.8%</td> <td>260.0%</td> </tr> </tbody> </table>	Min	Max	118.8%	260.0%	<i>Proportion of female teachers</i> 71%
Min	Max							
118.8%	260.0%							
Observations from the literature	<p>Demand/supply balance: The Eurydice survey <i>The Teaching Profession in Europe: Profile, Trends and Concerns</i>. (2004) indicates that unlike other countries, Cyprus has a surplus of secondary school teachers.</p> <p>Demand: The prospective teachers need to wait years until they are appointed. Given that appointments are made strictly in accordance with the waiting list ranking, only the oldest candidates are selected.</p> <p>Important influx of migrant children is a challenge for the education system.</p> <p>Supply: The main factors that continue to attract many into the teaching profession are:</p> <ul style="list-style-type: none"> • Job security • Status 							

	<ul style="list-style-type: none"> • Working hours per week • Working time for the year • Very reasonable salary
Assessment and validation	<p>The base case projects large surpluses at primary and secondary levels. This is corroborated by Eurydice.</p> <p>Increasing the demand would lead to shortages at pre-primary level. The supply limiting scenarios have a minimal impact on the surplus.</p> <p>The pupil teacher ratio is above the European average (13.3 for reference), reducing the ratio would lower the surplus of teachers in secondary education.</p> <p>Also, training teachers to respond to the particular requirements of educating migrant children could absorb part of the teachers' surplus.</p>

Czech Republic						
Key data	<i>Number of teachers (2004)</i> All level: 127,345	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 13 ^{12*13}	<i>Participation rate (2004) + 16 years old</i> 84%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 1.3		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -2.3	<i>Number of new graduates with teaching qualifications in 2004:</i> 11556	<i>Dormant teachers as proportion of all teachers (2005)</i> NA	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30yrs 30-55 yrs >55 yrs		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i>	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>57.2%</td><td>105.1%</td></tr></table>	57.2%	105.1%	<i>Proportion of female teachers</i> NA
57.2%	105.1%					
Observations from the literature	Demand/supply balance: According to the literature available there is an acute teacher shortage and at the same time 30-40% of trained teachers choose alternative employment.					

¹² This figure is based on national level data (Czech National Statistical Office). Calculating the pupil teacher ratio from the EU level data available gives a figure of 11.8 – this indicates discrepancies in the data for the Czech Republic. These discrepancies mean that the replacement needs could not be calculated.

¹³ Eurostat recorded 14.4

	<p>According to the Maastricht Study, due to the fact that many students follow vocational programmes at secondary level, there are actual and potential vocational teacher shortages in this country.</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • Increasing requirements on teachers in quality, class size/composition • Increasing pressures/requirements over duties and responsibilities of teachers ▪ Concerning vocational education, the majority of pupils follow vocational programmes at upper secondary level as opposed to other programmes (around 80%) ▪ Requirements for language teachers going to the Czech Republic are relatively low which might facilitate international mobility <p>Supply: Relative unattractiveness of the teaching profession is due to:</p> <ul style="list-style-type: none"> • Poor salary • Historical neglect • Poor progression conditions • Relatively unattractive retirement offers <p>Interventions:</p> <ul style="list-style-type: none"> • Recent efforts to increase attractiveness of salary and progression routes • Increase in support for new teachers and introduction of new educator-teacher assistants • Efforts to improve quality of teacher education and opportunities (and reward) for further training.
Assessment and validation	<p>No base case projections were possible for the Czech Republic. Available literature points out that there is a shortage of teachers particularly in vocational education. However, the teachers' population is increasing while the numbers of pupils are predicted to decrease. If this trend continues the pupil teacher ratio might fall further.</p> <p>Considering the low relative salary of teachers (less than per capita GDP), an increase in wages could attract more people to the profession, especially given that 30-40% of graduated teachers choose a different vocation. Efforts have been made recently, which go in this direction.</p> <p>Other possible improvements of teachers' conditions include improving progression rates and ameliorating retirement offers. Some recent reforms show that there is will to enhance attractiveness of teachers' profession.</p> <p>Given the high demand for vocational teachers, the above mentioned efforts should also pay particular attention to this</p>

	part of the profession.
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Denmark						
Key data	<i>Number of teachers (2004)</i> All levels: 114,166	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> NA	<i>Participation rate (2004) + 16 years old</i> 82%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 0.45		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 0.05	<i>Number of new graduates with teaching qualifications in 2004:</i> 6694	<i>Dormant teachers as proportion of all teachers (2005)</i> 51.6%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> NA		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 2.9%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>96.2%</td><td>114.7%</td></tr></table>	96.2%	114.7%	<i>Proportion of female teachers</i> NA
96.2%	114.7%					
Observations from the literature	<p>Demand/supply balance:</p> <ul style="list-style-type: none"> ▪ Rising shortage of teachers is beginning to appear ▪ Recruitment difficulties especially in fringe districts ▪ Concerning vocational education, the participation in upper secondary vocational education is around 50%. According to the Maastricht Study, there are actual and potential future vocational teacher shortages in this country. <p>Supply is affected by:</p> <ul style="list-style-type: none"> ▪ Ageing teaching body ▪ Trend towards individualization of wages to make profession more competitive ▪ Specific qualification requirements are an obstacle to mobility for foreign teachers willing to work in Denmark. 					

A beginning teacher shortage is about to make itself felt. There have been forecasts, which have drawn the attention to the problem by pointing at the concurrent growth in the number of children and an ageing teaching body. Other things have accelerated the problem: for instance that more teachers retire earlier than anticipated, partly due to age, partly after a rather short tenure in school. (Eurydice, *Reforms of the teaching profession: a historical survey 1975-2002*, Brussels: Eurydice 2002).

According to the OECD report on Denmark (Jacobsen et al. 2003), the present discussion about the future availability and need of teachers is taking place both at local and national levels. The local debate is dominated by the municipalities, which experience recruitment problems when they announce vacant positions and therefore hire both untrained teachers and use incitements such as a higher starting salary, special introductory programmes, help with accommodation etc. The Danish Union of Teachers (DLF) conducted a large questionnaire survey which showed that there was a **shortage of teachers in 53% of the municipalities**, and 14% of the municipalities had a teacher shortage of more than 5%. This was a problem especially in the fringe districts.

Projections have been prepared by the Ministry of Education. In 2002 it made a new analysis, which aimed at taking into account that a number of non-college-trained teachers teach in the free basic schools and continuation schools. This is a fact, which has been overlooked by earlier projections, misleading them to exaggerate the actual teacher shortage. The following projection includes an account of the demand for teachers, which it compares to the expected supply of teachers, both the experienced and the newly qualified ones. The account has been prepared in such a way that regional conditions are explained separately.

Estimated shortage of teachers (Source: *Ministry of Education projection of teachers August 2002*, based on estimations of total number of teachers trained at colleges of education, teachers in school, pupils and number of teachers required):

2005	-3415
2010	-4764
2015	-3499
2018	-838

- The survey shows that there is a modest shortage of teachers in elementary and lower secondary school. The regional analysis also shows that the shortage is not evenly distributed. The shortage is largest in Greater Copenhagen initially, but in the last year the shortage will be almost as large in western Denmark.

- An increase of the **pupil teacher ratio** from 10.7 to 11.2 will reduce the teacher shortage considerably so that there will

	only be a smaller shortage by 2010.
Assessment and validation	No base case projections were possible for Denmark. National statistics from Denmark show that there is a modest shortage of teachers in elementary and lower secondary school. As a consequence there are some policy recommendations in place to increase the pupil teacher ratio to balance out the shortage.

Estonia						
Key data	<i>Number of teachers (2004)</i> Level 0: 7,200	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> NA	<i>Participation rate (2004) + 16 years old</i> 87%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 0.7		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -2.7	<i>Number of new graduates with teaching qualifications in 2004:</i> 1896	<i>Dormant teachers as proportion of all teachers (2005)</i> 58.8%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> NA		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 2.4%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>79.1%</td><td>84.7%</td></tr></table>	79.1%	84.7%	<i>Proportion of female teachers</i> 99.7%
79.1%	84.7%					
Observations from the literature	<p>Demand: The following factors are influencing demand: Concerning vocational education, the participation in upper secondary vocational education is around 30%.</p> <p>Supply:</p> <ul style="list-style-type: none"> ▪ Maximum basic salary is slightly below the per capita GDP. ▪ Teaching is generally not considered an attractive profession. The social status of a teacher is lower than that of e.g. an engineer. However, in rural areas and other areas with high unemployment, teaching is more attractive as it provides a stable income. ▪ The fall in prestige has also lead to an ageing teacher's population. <p>Interventions:</p>					

	<ul style="list-style-type: none"> ▪ Local authorities in Estonia may offer extra pay to attract potential candidates to teach shortage subjects/ in specific areas. ▪ Teachers who are not fully qualified are offered the opportunity to obtain teaching qualifications in shortage subjects (Estonian as a second language, English, special needs).
Assessment and validation	No base case projections were possible for Estonia. The literature points out that Estonia might have shortages in specific subjects and that interventions are targeted at these.

Finland				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 977 (9% of 2004 teachers)	surplus 1086 (10% of 2004 teachers)	surplus of 5,505 (8% of 2004 teachers)	surplus 12,281 (19% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 59% (of 2009 teachers)	- 58%(of 2014 teachers)	8%(of 2009 teachers)	17%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	8%(of 2009 teachers)	9%(of 2014 teachers)	8%(of 2009 teachers)	17%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	12%(of 2009 teachers)	16%(of 2014 teachers)	- 0.3%(of 2009 teachers)	1%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	5%(of 2009 teachers)	3%(of 2014 teachers)	4%(of 2009 teachers)	9%(of 2014 teachers)

Key data	<p><i>Number of teachers (2004)</i></p> <p>Level 0: 11334</p> <p>Level 1: 24313</p> <p>Level 2 and 3: 41953</p> <p>Total 1-3 = 66,266</p>	<p><i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i></p> <p>11.7¹⁴</p>	<p><i>Participation rate (2004) + 16 years old</i></p> <p>85%</p>	<p><i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i></p> <p>0.8</p>		
	<p><i>Projected Annual Change in school age children between 2004 and 2015 (%)</i></p> <p>- 0.7</p>	<p><i>New graduates as proportion of all teachers (2005)</i></p> <p>8.2</p>	<p><i>Dormant teachers as proportion of all teachers (2005)</i></p> <p>37%</p>	<p><i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i></p> <p><30yrs: 2.5</p> <p>30-55 yrs: 1.5</p> <p>>55 yrs: -1.9</p>		
	<p><i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i></p> <p>3.4</p>	<p><i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i></p> <p>66%</p>	<p><i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i></p> <p>Min Max</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px;">100.6%</td> <td style="padding: 2px;">141.6%</td> </tr> </table>	100.6%	141.6%	<p><i>Proportion of female teachers</i></p> <p>73%</p>
100.6%	141.6%					
Observations from the literature	<p>Demand/supply balance:</p> <ul style="list-style-type: none"> ▪ The positive situation of the Finnish economy has resulted in a shortage of teachers for certain subjects (e.g. math, foreign languages) and in certain parts of the country (e.g. Helsinki region). ▪ The population concentration area of Southern Finland is experiencing shortages of both Finnish- and Swedish-speaking teachers, mathematics and special education teachers. 					

¹⁴ Eurostat recorded 14.3

- The flow of population from sparsely populated areas to centres presents problems in terms of both schools and teacher recruitment

Demand: The following factors are influencing demand:

- The number of pupils in Finland is likely to diminish in the years ahead. This points to a reduced demand for teachers, mainly in sparsely populated areas as the population moves rapidly to centres of faster growth.
- Consequently, there will be a future demand for teachers with increasingly extensive qualifications, meaning those who can work anywhere within primary and secondary education. It is likely that, in practical subjects in particular, the same teachers will also have to be able to work in general upper secondary education, as well as in vocational and adult education.

Supply:

- The peak within the 50-55 age-group is quite substantial and close to retirement age.
- People tend to move away from the teaching field during periods of economic prosperity (increasing flow of teachers in mathematics, natural sciences and languages leaving teaching work to apply for other positions)
- Wages and salaries are higher in the private sector than in the public sector and the teachers' pay level has affected the attractiveness of teaching work.
- Regardless of the traditional attraction of the teaching field and the good situation in respect of applicant volumes, the teaching profession has lost popularity among young people
- Early retirement has increased during the 1990s.
- Amount of burn-out has increased distinctly over the last five years
- The majority of teachers and trainers at ISCED level 3 teach in pre-vocational and vocational programmes.

Forecasting and Anticipation projects (OECD, *Attracting, Developing and Retaining Effective Teachers*, 2003)

In 1998, the Ministry of Education launched a two-year OPEPRO project to anticipate teachers' needs for initial and continuing education and training up until 2010. The starting point used for calculations in terms of demand for labour was the number of students in 2010, which had been anticipated on the basis of population forecasts and recent actual student volumes. The anticipated need for teacher education and training consisted of the difference between teacher demand and teacher reserves, taking account of teachers' retirement, entry of current students into the labour market upon graduation and teachers' mobility during their careers.

The data collected in the anticipatory project has made it possible to pinpoint problems related to the ageing, professional qualifications and regional placement of teachers. In all, more than 20,000 teachers are due to retire

	<p>between 2000 and 2010. The average age of the teaching workforce is highest in remote areas of Northern Finland. Conversely, the population concentration area of Southern Finland is experiencing shortages of both Finnish- and Swedish-speaking qualified class teachers and special education teachers.</p> <p>The surveys indicated that the shortage of qualified subject teachers was highest among teachers of languages and mathematical subjects. Almost one quarter of working teachers lacked formal qualifications. It anticipated that Finnish- and Swedish-language basic and general upper secondary education would require a total of almost 48,400 rector and full-time teachers in 2020. According to the working group, intake volumes for vocational teacher education and training should be increased for 2003–2008 by about 200 students per year.</p> <p>One of the conclusions of the anticipatory project was that it identified an immediate need to increase volumes in teacher education and training. On the other hand, demand for teaching workforce will decrease because of the reduction in the sizes of future age groups.</p>
<p>Assessment and validation</p>	<p>The base case predicts surplus of teachers at all levels for 2009 and 2014. The number of teachers is increasing slightly whereas the number of pupils is falling.</p> <p>The high demand scenarios have no impact on the surplus because Finland already has a low pupil/teacher ratio and a high participation rate.</p> <p>The surplus limiting scenarios reduce the surplus, particularly if the inflow of 30/55 years old is suppressed (the inflow is currently 1.5%), leading to shortages in 2009.</p> <p>It seems that existing shortages are due to regional imbalances in the population repartition. In some regions there will be a need for teachers who are qualified to teach two subjects to facilitate recruitment. In practical subjects in particular, the same teachers may have to be able to work in general upper secondary education, as well as in vocational and adult education.</p>

France				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 10,268 (7% of 2004 teachers)	surplus 28,044 (20% of 2004 teachers)	surplus of 5,521 (1% of 2004 teachers)	surplus 21,288 (3% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	7% (of 2009 teachers)	17% (of 2014 teachers)	- 9%(of 2009 teachers)	- 6%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 27%(of 2009 teachers)	- 13%(of 2014 teachers)	- 15%(of 2009 teachers)	- 13%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	14%(of 2009 teachers)	20%(of 2014 teachers)	2%(of 2009 teachers)	- 2%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	1%(of 2009 teachers)	7%(of 2014 teachers)	- 4%(of 2009 teachers)	- 7%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1999-2004)</i>

	Level 0: 138633 Level 1: 202954 Level 2 and 3: 511278 Total 1-3 = 714,232	14	82%	0.4		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> 0.04	<i>New graduates as proportion of all teachers (2005)</i> 10.4	<i>Dormant teachers as proportion of all teachers (2005)</i> 18.3	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30yrs: 2.5 30-55 yrs: 0.9 >55 yrs: -3		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.2%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 39%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>102.8%</td><td>190.5%</td></tr></table>	102.8%	190.5%	<i>Proportion of female teachers</i> 67%
102.8%	190.5%					
Observations from the literature	<p>Demand/supply balance:</p> <p>The OECD (2003) report found that the current situation in France is not characterised by the shortage of candidate. However, the skewed age structure of the French population is not favourable in view of the high demand for new teachers to be met in the coming years as a result of the high expected number of retiring teachers. Hence, France will also be faced with the problem of shortages.</p> <ul style="list-style-type: none"> - The number of retiring teachers will peak precisely in the decade from 2004 to 2014, in particular in secondary education. - The high level of recruitment in the decade 1965-1975 for the schooling of all children until the age of 16 in lower secondary education, which entails massive retirements between 2004 and 2014; - Extending the retirement age only postpones the problem without making it less acute; 					

	<p>- Increased violence and insecurity in certain urban areas and some schools inhibit many potential teachers, as many students reject the option of passing the selective examinations (concours) required to become a secondary education professor.</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> ▪ Potential fall in pupil enrolments ▪ Concerning vocational education, the participation in upper secondary vocational education is around 55%. According to the Maastricht Study, there are actual and potential future vocational teacher shortages in this country <p>Supply:</p> <ul style="list-style-type: none"> ▪ Recruitment difficulties vary in inverse proportion to the unemployment rate. ▪ Teachers' salaries are unattractive compared with private sector ▪ Image of the profession has deteriorated and working conditions have worsened in the last years ▪ Mobility is limited at the regional level (centralize system of appointment) ▪ Considering the skewed age structure, retirement will peak in the next decade.
<p>Assessment and validation</p>	<p>The base case scenario predict a small surplus of teachers for 2009 and 2014 (1% and 3% for levels 1,2,3).</p> <p>Increasing the demand by applying the Lisbon participation rates would give rise to teachers' shortages. Reducing the pupil/teacher ratio (currently 14) would have a strong impact: the surplus would then revert to important shortages at all levels.</p> <p>Supply limiting scenarios have a more limited effect, but reducing the number of entrants would also create shortages at levels 1,2, and 3.</p> <p>The importance of the shortage will mostly depend on the adjustment of the pupil/teacher ratio, on the future participation rates and the potential recruitment difficulties.</p>

Germany				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 51,138 (27% of 2004 teachers)	surplus 81,515 (43% of 2004 teachers)	surplus of 38,954 (5% of 2004 teachers)	surplus 36,764 (4% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	9% (of 2009 teachers)	20% (of 2014 teachers)	2%(of 2009 teachers)	2%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 15%(of 2009 teachers)	- 26%(of 2014 teachers)	- 16%(of 2009 teachers)	- 16%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	17%(of 2009 teachers)	22%(of 2014 teachers)	- 8%(of 2009 teachers)	- 27%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	18%(of 2009 teachers)	24%(of 2014 teachers)	2%(of 2009 teachers)	- 2%(of 2014 teachers)

Key data	<i>Number of teachers (2004)</i> Level 0: 189965 Level 1: 232937 Level 2 and 3: 597681 Total 1-3 = 830,618	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 14.6 ¹⁵	<i>Participation rate (2004) + 16 years old</i> 68%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 1.9		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 1.2	<i>New graduates as proportion of all teachers (2005)</i> 2.5 ¹⁶	<i>Dormant teachers as proportion of all teachers (2005)</i> 170.3%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30yrs: 1.4 30-55 yrs: 3.4 >55 yrs: -1.8		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 3.5%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 46%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>153.4%</td><td>189.8%</td></tr></table>	153.4%	189.8%	<i>Proportion of female teachers</i> 70%
153.4%	189.8%					
Observations from	Demand/supply balance:					

¹⁵ Eurostat recorded 16.1

¹⁶ Figures provided by the German ministry of education suggest that the actual number of teaching graduates is 27,159, this gives a proportion of 2.4% of the teaching population. The Replacement Needs Model was calculated on slightly smaller number of graduates reported in UOE table EF14 of 25,337. This difference has very little effect on the projections, any changes are within the model's margin of error, although it does significantly alter the proportion of graduates entering the teaching profession.

<p>the literature</p>	<ul style="list-style-type: none"> • According to the Maastricht Study, there are actual and potential future vocational teacher shortages in Germany. • The recruitment need for teachers cannot be fully met in the period from 2002 to 2015 and shortages will build up. • There are two different trends within the country : rising pupil numbers in old Laenders versus falling pupil numbers in new Laenders • Forecasts predict that a tendency towards shortage of teachers will relate to specific teaching careers, especially vocational teaching and lower secondary (linked to demand, attractiveness of curricula) <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • While numbers of teachers decline in new Laenders in line with less demand, there are still subject-linked shortages since reunification • The numbers of immigrant children in German schools are rising. • Concerning vocational education, the participation in upper secondary vocational education is around 60%. <p>Supply:</p> <ul style="list-style-type: none"> • Increasing numbers of teaching staff will retire in coming years from the education service for age-related reasons • the number of graduates from the preparatory service will be comparatively small for some teaching careers as a result of the temporarily fall in numbers of students starting their training with the aim of qualifying for a teaching career since the mid-1990s. • In response to the decreasing demand in new Laenders, there has been an increase in part-time teachers in order to prevent redundancies • Due to poor literacy results, there is a risk of increase in teachers' insecurity (PISA) • Increasing levels of pressures on teachers have meant increasing levels of burn-out among teachers <p>Interventions:</p>
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A number of interventions to face the above have been implemented.

1. Measures to motivate student teachers:

- increasing the capacities at teacher training colleges, at specialised teacher training institutes (Pädagogische Fachseminare) and in vocational study courses;
- setting up new study courses at universities for vocational school teachers;
- creating the possibility for graduates from higher education colleges (Fachhochschulen) to enter the main study course as so-called "side-door entrants" in the vocational field;
- amendment of examination regulations primary and lower secondary schools (GHPO I) connected with a promotion of the so-called "small" subjects;
- abolishment of the Numerus clausus (limitation of access to university) for prospective teachers;
- participation of the Land Baden-Württemberg in the image campaign for teachers planned by the Standing Conference of Education Ministers;
- optimising information offered by the internet about teacher training, the teaching profession and teacher recruitment;
- checking the possibility of financial incentives for trainee teachers in the vocational field;
- The length of study to become a teacher has been reduced to tackle the ageing trend in teachers profession;

On the other hand, excessive student numbers in overcrowded teacher training courses or study subjects have to be reduced. This calls for greater regulation concerning capacities, also with regard to the students' priorities concerning school levels and subjects.

2. Other measures:

- Remuneration packages are increasingly linked to performance in relation to promotion; this is to increase incentive and opportunities for progression.
- On the other hand, in the old Laenders where there is shortage, measures are in place to increase the number of entrants in shortage areas – this is both for region and subject area.
- Teacher qualification programmes increasingly include multicultural dimensions.
- Schemes have been put in place in response to rise of immigrant pupils : Mother Tongue Teaching for

	<p>immigrant children after school; the right to be thought in their original language.</p> <ul style="list-style-type: none"> • In order to address the above mentioned burn-out, managing departures from teaching have been developed in response: ie relocation of teachers into other professions. <p>References:</p> <p>OECD, 'The Education System in the Federal Republic of Germany 2004', Secretariat of the Standing Conference, OECD, 2004</p>
<p>Assessment and validation</p>	<p>The discrepancies between the two sets of data (qualitative and quantitative) present here could be explained by the fact that:</p> <ol style="list-style-type: none"> 1. The quantitative data do not take into account the regional differences but the overall numbers 2. The quantitative data do not reflect the part-time nature of important number of teachers' jobs in new Landers <p>The shortages depicted by the literature are currently being addressed by numerous reforms of teachers' education. However, attention should be paid to directing the future teachers supply towards subjects and courses where the shortages are most urgent.</p> <p>There is also an important "hidden potential" in form of dormant teachers.</p> <p>Measures have also been taken to address the particular demand created by increasing numbers of children with non-German origins.</p>

Greece						
Key data	<i>Number of teachers (2004)</i> Level 0: 11006 Level 1: 58395 Level 2 and 3: 83848 Total 1-3 = 142,243	<i>Pupil teacher ratio (2004) Level 1,2, 3 – Eurostat recorded</i> 9.5	<i>Participation rate (2004) + 16 years old</i> 84%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 2.5		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 0.4	<i>Number of new graduates with teaching qualifications in 2004:</i> 8782	<i>Dormant teachers as proportion of all teachers (2005)</i> 25.5	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i>		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 4.1%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 45%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px;">121.7%</td> <td style="padding: 2px;">219.1%</td> </tr> </table>	121.7%	219.1%	<i>Proportion of female teachers</i> 61%
121.7%	219.1%					
Observations from the literature	<p>Demand/supply balance:</p> <p>The analysis of the OECD Country report (Stylianidou et al. 2004) reveals that no teacher shortage has yet been reported. Teacher vacancies in Greek schools most commonly arise due to teacher retirements or temporary leave or secondment to educational services outside schools. Resignation from the teaching profession is a rare phenomenon. The opposite is true: on the whole there is a great surplus of teachers of all specializations. However there is an indication that this situation may have recently changed in the case of primary teachers, due to the late mass recruitment of primary education teachers to new positions opened in all-day schools</p> <p>In Greece overall there are no major policy concerns about attracting people into the teaching profession. More</p>					

	<p>specifically in secondary education, there is a great surplus of qualified teachers. Some of the factors that may account for this surplus are:</p> <ul style="list-style-type: none"> • Low demand and thus unemployment in other professional sectors; • A high degree of job security (tenure), as well as relatively satisfactory salary structures and working conditions in the teaching profession; • Wide access to a teaching qualification, since a university first degree in a school discipline is in most cases a sufficient requirement to qualify for employment as a teacher. • The teaching profession offers many benefits compared to other sectors, such as employment for life (teachers in public-sector schools have civil servant status), reduced working hours and longer holidays
Assessment and validation	<p>No base case projections were possible for Greece. A surplus can be expected considering that pupil numbers will decrease in the period 2004-2015.</p>

Hungary				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	shortage of 215 (1% of 2004 teachers)	shortage 1,817 (6% of 2004 teachers)	surplus of 21,395 (16% of 2004 teachers)	surplus 37,605 (28% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 12% (of 2009 teachers)	- 18% (of 2014 teachers)	12%(of 2009 teachers)	23%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 1%(of 2009 teachers)	- 6%(of 2014 teachers)	15%(of 2009 teachers)	26%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	1%(of 2009 teachers)	- 6%(of 2014 teachers)	12%(of 2009 teachers)	20%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	- 4%(of 2009 teachers)	- 14%(of 2014 teachers)	12%(of 2009 teachers)	20%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1999-2004)</i>

	Level 0: 31487 Level 1: 42643 Level 2 and 3: 97,775 Total 1-3 = 140,418	10.4	90%	- 0.9%		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 1.7	<i>New graduates as proportion of all teachers (2005)</i> 19.3	<i>Dormant teachers as proportion of all teachers (2005)</i> 75.1%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 1.9 30< >55 years old: 1.1 >55 years old: -1.9		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.6%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 50%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>42.6%</td><td>77.3%</td></tr></table>	42.6%	77.3%	<i>Proportion of female teachers</i> 82%
42.6%	77.3%					
Observations from the literature	<p>Demand/supply balance:</p> <ul style="list-style-type: none"> • The pupil/teacher ratio is low and it is decreasing. • According to the Maastricht Study, there are actual and potential future vocational teacher shortages in this country. • In comparison with other countries, teachers represent a significant proportion of the total workforce in Hungary. <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • Concerning vocational education, the participation in upper secondary vocational education is rather low (around 10%). 					

	<ul style="list-style-type: none"> • There are Indications of a teachers' shortage in certain underdeveloped regions of the country as well as in certain school subjects like computer science, foreign languages and music. <p>Supply:</p> <ul style="list-style-type: none"> • Among individuals with high qualifications, teachers are seen to have low salaries. • The prestige of the profession has suffered in the past. • Teachers with high qualifications have difficulties finding jobs. • Retired teachers are returning to the profession. • Part-time employment of teachers is far below the level found in OECD countries. <p>Interventions:</p> <ul style="list-style-type: none"> • A number of measures introduced recently indirectly prevent shortage of teachers, such as increasing the retirement age, increasing salaries, reducing the number of teaching-hours. • The prestige of the profession also grew together with the recent reforms.. <p>References:</p> <p>Eurydice, The teaching profession in Europe: Profile, trends and concerns. Report II: Supply and demand., 2002</p>
Assessment and validation	<p>The base case projections estimate small teachers' shortages in pre-primary education and surplus at all the other levels.</p> <p>Hungary has a rather low pupil teacher ratio and already high participation rates. These factors, combined with the decreasing number of children, mean that the demand for teachers in the future should be stagnating or decreasing. Teachers' shortages in particular areas, e.g. vocational education, might appear.</p> <p>Despite the recent efforts, the wages in the profession remain relatively low. That explains the large proportion of trained teachers who do not exercise this profession.</p>

Ireland				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	shortage of 6 (4% of 2004 teachers)	surplus 3 (2% of 2004 teachers)	surplus of 5,479 (10% of 2004 teachers)	surplus 6,055 (12% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	Not reliable	Not reliable	5% (of 2009 teachers)	5% (of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 58% (of 2009 teachers)	- 51%(of 2014 teachers)	- 8%(of 2009 teachers)	- 8%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	-4% (of 2009 teachers)	0%(of 2014 teachers)	5%(of 2009 teachers)	1%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	-8% (of 2009 teachers)	- 8%(of 2014 teachers)	5%(of 2009 teachers)	1%(of 2014 teachers)

Key data	<i>Number of teachers (2004)</i> Level 0: 169 Level 1: 24734 Total 1-3 = 48,956	<i>Pupil teacher ratio (2004) Level 1, 2, 3 – calculated</i> 14.3 ¹⁷	<i>Participation rate (2004) + 16 years old</i> 98%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 2.2		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> 0.66	<i>New graduates as proportion of all teachers (2005)</i> 13%	<i>Dormant teachers as proportion of all teachers (2005)</i> 31.1%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 3 30< >55 years old: 1.3 >55 years old: -1.4		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.4%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>77.0%</td><td>149.8%</td></tr></table>	77.0%	149.8%	<i>Proportion of female teachers</i> 71%
77.0%	149.8%					
Observations from the literature	<p>Demand/supply balance:</p> <p>There is a general shortage of about 1,000 primary school teachers in Ireland. There is a shortage of male teachers, particularly in Primary schools. The gender ratio is 9:1 females to male, and an OECD report speculates that primary school teaching in is traditionally seen as "women's work" (Egan et al. <i>Attracting developing and retaining effective teachers</i>, OECD, 2003).</p> <p>Demand: The following factors are influencing demand:</p>					

¹⁷ Eurostat recorded 16.3

	<ul style="list-style-type: none"> • Falling pupil numbers • There is a relatively new immigrant population that has yet to settle in Ireland– this is likely to have consequences on the teaching profession and qualification requirements in the near future, such as shortage in teachers from minority backgrounds <p>Supply:</p> <ul style="list-style-type: none"> • Faster ageing and retirement of large proportions of teachers is counter-balancing the fall in pupil numbers • The status of teachers in Ireland is high • General conditions for foreign teachers to enter teaching in Ireland are strict
Assessment and validation	<p>The base case scenario predicts surpluses at primary and secondary levels, and a small shortage at pre-primary level.</p> <p>Increasing the demand, in lowering the pupil/teacher ratio (currently 14.3) would create shortages at all levels.</p> <p>The low surplus scenarios have a limited impact.</p>

Italy ¹⁸				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	shortage of 3,475 (4% of 2004 teachers)	shortage 6,057 (8% of 2004 teachers)	shortage of 92,447 (16% of 2004 teachers)	shortage 208,867 (36% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 5% (of 2009 teachers)	- 9% (of 2014 teachers)	- 21%(of 2009 teachers)	- 59%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 78%(of 2009 teachers)	- 85%(of 2014 teachers)	- 19%(of 2009 teachers)	- 56%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	- 13%(of 2009 teachers)	- 27%(of 2014 teachers)	- 18%(of 2009 teachers)	- 59%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced	- 6%(of 2009 teachers)	- 11%(of 2014 teachers)	- 20%(of 2009 teachers)	- 61%(of 2014 teachers)

¹⁸ The Italian ministry of education noted that the budget currently being discussed in the Houses of Parliament, predicts that in the next three years 150,000 teachers will be hired. They predict that re-activating dormant teachers and as well as recruiting new teachers will mean that they will not suffer the predicted 53% shortfall.

by 25%				
Key data	<i>Number of teachers (2004)</i> Level 0: 132471 Level 1: 260769 Level 2 and 3: 417023 Total 1-3 = 677,792	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 11.9 ¹⁹	<i>Participation rate (2004) + 16 years old</i> 88%	<i>Annual percentage growth/decline in numbers of teachers (2001-2004)</i> -0.4
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 0.2	<i>New graduates as proportion of all teachers (2005)</i> 1.2%	<i>Dormant teachers as proportion of all teachers (2005)</i> 265.5% ²⁰	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 0 30< >55 years old: 0.6 >55 years old: -2.2
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a</i>	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i>	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i>	<i>Proportion of female teachers</i> 81%

¹⁹ Eurostat recorded 10.9

²⁰ The highest teaching qualification in Italy is the “l’abilitazione all’insegnamento” (teaching certificate). This title is obtained after a degree course (university course, Studies in Education for teachers ISCED1 and post-graduate courses SSIS, Scuola di Specializzazione per l’Insegnamento Secondario, for teachers ISCED2 and ISCED3). Before the institution of this university training, this qualification was obtained through a public competition (annex pg 25 the “state exam”). All the teachers with this qualification are on a list from which the administration can select teachers annually to cover open positions. The qualified teachers on these lists are gradually hired in accordance with the economic situation or the need for teachers in schools. They are hired by the public administration. Only teachers on these lists can become full-time teachers, despite the fact that principals can hire other personnel without this qualification to cover temporary needs in their schools. Therefore teachers on these lists are the DT in Italy. There are about 450,000 DTs and 750,000 full-time teachers, that is 60% of the total.

	<i>teacher qualification as their highest qualification)</i> 3.9	66%	<table border="1"> <thead> <tr> <th><i>Min</i></th> <th><i>Max</i></th> </tr> </thead> <tbody> <tr> <td>93.3%</td> <td>138.1%</td> </tr> </tbody> </table>	<i>Min</i>	<i>Max</i>	93.3%	138.1%	
<i>Min</i>	<i>Max</i>							
93.3%	138.1%							
Observations from the literature	<p>Demand/supply balance:</p> <ul style="list-style-type: none"> Italy is in a difficult situation as far as replacement needs are concerned as most of its teachers are in the 50-55 age-group and benefit from possibilities for early retirement. It is warned that Italy, could soon face a shortage of teachers, because a large proportion of current teachers face retirement in the next decade. Whether this will be sufficient to absorb those on the Italian waiting lists--and what the next way in for aspiring school teachers remains to be seen. <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> There is a shortage of technical and scientific subject teachers in Italy. Concerning vocational education, the participation in upper secondary vocational education is rather low (around 25%). <p>Supply:</p> <ul style="list-style-type: none"> The maximum basic salary is only obtained close to retirement age (65) or after 30 or more years of service. The minimum/maximum basic salary ratio is low. Salary increase is a priority for the larger trade unions whose aim is to secure teacher remuneration at the same levels as elsewhere in Europe. The status of the teaching profession in Italy is perceived quite low. Less and less students are attracted to the teaching profession which is becoming more and more a feminine occupation. The status of the teaching profession is perceived higher in the south of Italy. This is due to the local labour market conditions (the unemployment rate is very high). The majority of teachers and trainers at ISCED level 3 teach in pre-vocational and vocational programmes. <p>Interventions:</p> <ul style="list-style-type: none"> Reform of the education system ensures the right to education and training for at least twelve years or until 							

	<p>students obtain a qualification within 18 years of age.</p> <ul style="list-style-type: none"> • The recent reforms have gradually abolished opportunities of early retirement will in the short term undoubtedly help to ensure that teachers in the age-group remain in the profession. Yet they offer no solution to the shortfalls in recruitment now observable in the age-groups below them. <p>References:</p> <p>Eurydice, <i>National Summary Sheets on Education Systems in Europe and Ongoing Reforms –Italy</i>, Brussels: Eurydice, 2005</p>
<p>Assessment and validation</p>	<p>The odd figures concerning Italy might be explained by the fact that teacher training was an alternative to secondary education that allows to go to University afterwards. While this is no longer the case, it may explain the very high number of dormant teachers.</p> <p>The base case scenario forecasts shortages of teachers at all education levels.</p> <p>Given the slowly decreasing number of pupils, the low pupil teacher ratio and the relatively high participation rates, the demand is unlikely to grow drastically.</p> <p>On the other hand the decrease in supply, due to retirements and very low inflow of new teachers, is likely to amplify these shortages.</p> <p>Recent reforms try to discourage early retirements from teachers' profession; however efforts should be made to motivate new inflow into the sector.</p> <p>As mentioned in the literature, salaries remain relatively low, especially in the North and it takes a long time to reach higher wage categories.</p>

Latvia				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 1,607 (28% of 2004 teachers)	surplus 3,198 (55% of 2004 teachers)	surplus of 4,410 (13% of 2004 teachers)	surplus 2,757 (8% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 17% (of 2009 teachers)	0.3% (of 2014 teachers)	11%(of 2009 teachers)	8%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	20%(of 2009 teachers)	32%(of 2014 teachers)	16%(of 2009 teachers)	12%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	2%(of 2009 teachers)	0.2%(of 2014 teachers)	28%(of 2009 teachers)	37%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	13%(of 2009 teachers)	21%(of 2014 teachers)	15%(of 2009 teachers)	11%(of 2014 teachers)

Key data	<p><i>Number of teachers (2004)</i></p> <p>Level 0: 5757</p> <p>Level 1: 7124</p> <p>Level 2 and 3: 24989</p> <p>Total 1-3 = 32,113</p>	<p><i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i></p> <p>11²¹</p>	<p><i>Participation rate (2004) + 16 years old</i></p> <p>87%</p>	<p><i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i></p> <p>1.5</p>				
	<p><i>Projected Annual Change in school age children between 2004 and 2015 (%)</i></p> <p>-3.4</p>	<p><i>New graduates as proportion of all teachers (2005)</i></p> <p>19.4%</p>	<p><i>Dormant teachers as proportion of all teachers (2005)</i></p> <p>136.4%</p>	<p><i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i></p> <p><30 years old: 2.5</p> <p>30< >55 years old: 0.2</p> <p>>55 years old: -0.8</p>				
	<p><i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i></p> <p>1.6</p>	<p><i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i></p> <p>NA</p>	<p><i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Min</i></td> <td style="text-align: center;"><i>Max</i></td> </tr> <tr> <td style="text-align: center;">30.3%</td> <td style="text-align: center;">48.0%</td> </tr> </table>	<i>Min</i>	<i>Max</i>	30.3%	48.0%	<p><i>Proportion of female teachers</i></p> <p>85%</p>
<i>Min</i>	<i>Max</i>							
30.3%	48.0%							
Observations from the literature	<p>Demand/supply balance:</p> <p>Demand:</p> <ul style="list-style-type: none"> Concerning vocational education, the participation in upper secondary vocational education is around 40% <p>Supply:</p>							

²¹ Eurostat recorded 13.1

	<ul style="list-style-type: none"> • Some teachers return from retirement to fill gaps and there are others who are replacement teachers in subjects where they do not have the qualifications. • Very low salaries <p>Interventions:</p> <ul style="list-style-type: none"> • Salaries are slowly being increased. • There is no support system for teachers who are suffering stress. • There have been recent changes to the teaching qualifications needed for the profession. Initiatives are in place to re-qualify those who are already in the profession. <p>References:</p> <p>Eurydice, <i>The Education System in Latvia (2004/2005)</i>, 2004</p>
Assessment and validation	<p>The base case projections forecasts high surpluses for pre-primary education and lower surpluses for other levels.</p> <p>The surpluses are likely to increase even further given that the number of pupils is decreasing while the number of teachers grows. This despite the very low comparative wages.</p> <p>The teachers' surplus could be reduced by slowing down the high inflow of new teachers.</p>

Lithuania				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 189 (2% of 2004 teachers)	shortage 1394 (13% of 2004 teachers)	surplus of 14,159 (26% of 2004 teachers)	surplus 23,177 (43% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 65% (of 2009 teachers)	- 96% (of 2014 teachers)	24%(of 2009 teachers)	39%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	2%(of 2009 teachers)	- 17%(of 2014 teachers)	25%(of 2009 teachers)	40%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	18%(of 2009 teachers)	16%(of 2014 teachers)	- 25%(of 2009 teachers)	- 39%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	- 1 %(of 2009 teachers)	- 26%(of 2014 teachers)	24%(of 2009 teachers)	38%(of 2014 teachers)

Key data	<i>Number of teachers (2004)</i> Level 0: 11127 Level 1: 11,561 Total 1-3 = 65,814	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 12.1 ²²	<i>Participation rate (2004) + 16 years old</i> 92%	<i>Annual percentage growth/decline in numbers of teachers (1999-2004)</i> 3.3		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 3.9	<i>New graduates as proportion of all teachers (2005)</i> 17.4%	<i>Dormant teachers as proportion of all teachers (2005)</i> 83.6%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 1.8 30< >55 years old: -0.4 >55 years old: -0.8		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.9%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>55.3%</td><td>113.0%</td></tr></table>	55.3%	113.0%	<i>Proportion of female teachers</i> 87%
55.3%	113.0%					
Observations from the literature	<p>Demand/supply balance:</p> <p>The demand for teaching staff was not met in 1998 and 1999 but the relation between supply and demand balanced out in 1999/2000.</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> Concerning vocational education, the participation in upper secondary vocational education is rather low 					

²² Eurostat recorded 9.3

	<p>(around 25%). A decrease in participation over the period 2000-2004 has been observed.</p> <p>Supply:</p> <ul style="list-style-type: none"> • The salary level is lower than the general salary level in the economy at large (91% of the average salary level in the state sector). • The fall in prestige has also lead to an ageing teacher's population. 73% of the teachers have over 10 years of work experience in Lithuania. <p>Interventions:</p> <ul style="list-style-type: none"> • New official retirement age was set on 60 years for women and 62.5 for men. • A frequently adopted measure when oversupply is forecast is to limit the number of student entrants to initial training. <p>References:</p> <p>Eurydice, <i>The Teaching Profession in Europe: Profile, Trends and Concerns, Report II: Supply and Demand</i>, Brussels: Eurydice, 2004</p>
<p>Assessment and validation</p>	<p>In long terms, the base case projections predict shortage of teachers at pre-primary education and important surplus at other levels.</p> <p>Considering the envisaged decline of pupils and the growing tendency in numbers of teachers, the oversupply is likely to grow.</p> <p>The teachers' surplus could be balanced by decreasing the numbers of new entrants into the profession. This combined with the retirements of those close to retirement ages could improve the oversupply.</p> <p>The shortage at level 0 could be tackled by improvement of teachers' conditions, e.g. wage growth.</p>

Luxembourg				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 421 (39% of 2004 teachers)	surplus of 745 (68% of 2004 teachers)	surplus of 656 (10% of 2004 teachers)	surplus of 1,560 (25% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	14% (of 2009 teachers)	29%(of 2014 teachers)	8%(of 2009 teachers)	17%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	22%(of 2009 teachers)	35%(of 2014 teachers)	8%(of 2009 teachers)	18%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	21%(of 2009 teachers)	29%(of 2014 teachers)	2%(of 2009 teachers)	4%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	24%(of 2009 teachers)	35%(of 2014 teachers)	4%(of 2009 teachers)	10%(of 2014 teachers)

Key data	<i>Number of teachers (2004)</i> Level 0: 1089 Level 1: 3002 All levels: 5943	<i>Pupil teacher ratio (2004) Level 1, 2, 3 – calculated</i> 12 ²³	<i>Participation rate (2004) + 16 years old</i> 76%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 0.8		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> 0.4	<i>New graduates as proportion of all teachers (2005)</i> 0.3%	<i>Dormant teachers as proportion of all teachers (2005)</i> NA	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 3.9 30< >55 years old: 2.0 >55 years old: -1.8		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> NA	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>104.5%</td><td>196.7%</td></tr></table>	104.5%	196.7%	<i>Proportion of female teachers</i> NA
104.5%	196.7%					
Observations from the literature	Demand/supply balance: In general the government succeeds in recruiting a sufficient number of young teachers, because of the good working conditions and attractive salaries in the profession. A frequently adopted measure when oversupply is forecast is to limit the number of student entrants to initial training. However at present, there is a perceptible shortage of teachers, particularly for German, French and English as well as for mathematics (European Commission, <i>Mise en Oeuvre du Programme de Travail "Education et Formation 2010"</i> ,					

²³ Eurostat recorded 9.8

Brussels, 2005)

Planification of replacement needs for teachers:

To guarantee a better planification of replacement needs for teachers, the Ministry is relying on the increasing use by the local administrations of the new IT tool "Scolaria", to make more precise previsions for pre- primary and primary education. At the moment the need for teachers remains very important for primary education when they tend to stabilise for pre primary. The combined effect of the increase in the number of pupils and the ageing of the teaching population will be considerable in the years ahead in Luxembourg (Ministère de l'éducation nationale, *Rapport d'activité 2005*)

A permanent Commission of experts is in charge of carrying out studies on the planification of teaching staff needs for post-primary teachers. The 2004 report was presented to the Ministry of Education, which then adopted a recruitment programme for the years 2004/2005 to 2008/2009.

Academic Year 2004/2005 180 posts
2005/2006 185 posts
2006/2007 190 posts
2007/2008 195 posts
2008/2009 200 posts

Total of 950 posts.

Despite the incremental improvements in the volume of recruitments, the shortage of teachers is still very serious in French and Mathematics. For other subjects the balance supply/demands is slowly reached (Ministère de l'Éducation nationale et de la Formation professionnelle, *Rapport d'activité 2004*)

Concerning future needs of teachers, important factors are demographic growth, due to birth rate and immigration, and increase in teachers retiring. They will impact on the replacement needs for the future period 2006-2007. For instance the demographic evolution in schools corresponds to a need of 65 additional posts per year. To address these needs the Government adopted a five year plan, which allows for 170 to 190 new posts each year. This plan should help resorbing the increasing needs. It is also meant to prevent the increase in the number of extra hours for teachers (Ministère de l'Éducation nationale et de la Formation professionnelle, *Le recrutement de personnel enseignant pour l'enseignement primaire et l'enseignement post primaire*, Luxembourg, 2002)

Demand: The following factors are influencing demand:

- Need for teachers to teach immigrant children is increasing.

	<ul style="list-style-type: none"> ▪ A rise in the number of pupils in lower secondary education is likely to be especially high by 2005. ▪ Concerning vocational education, the participation in upper secondary vocational education is above 60%. <p>Supply:</p> <ul style="list-style-type: none"> ▪ In Luxembourg the level of minimum basic salaries is much higher than the average in Europe ▪ The difficulty and length of the teacher studies, together with the high level of the salary, are elements which are not likely to incite to leave for a long-term mobility.
Assessment and validation	<p>The base case scenario predicts large surpluses at pre primary level, as well as surpluses at levels 1,2 and 3.</p> <p>Increasing the participation rate has a limited effect on the surplus.</p> <p>The supply limiting scenarios would reduce the surplus, especially if there is no inflow of 30/55 years old into the profession (which is currently 2%).</p>

Malta				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	Not reliable	Not reliable	surplus of 659 (12% of 2004 teachers)	surplus of 1,054 (20% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	Not reliable	Not reliable	- 1% (of 2009 teachers)	7% (of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	Not reliable	Not reliable	3%(of 2009 teachers)	10%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	Not reliable	Not reliable	17%(of 2009 teachers)	25%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	Not reliable	Not reliable	8%(of 2009 teachers)	11%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (2002-2004)</i>

	Level 0: 170 Level 1: 1654 Level 2 and 3: 3733 Total 1-3 = 5,387	13	65%	- 7.9		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 1.1	<i>New graduates as proportion of all teachers (2005)</i> 17.7%	<i>Dormant teachers as proportion of all teachers (2005)</i> 80%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 3.7 30< >55 years old: -2.7 >55 years old: -2.7		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 0%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>123.9%</td><td>169.6%</td></tr></table>	123.9%	169.6%	<i>Proportion of female teachers</i> 65%
123.9%	169.6%					
Observations from the literature	<p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • There is a shortage of teachers in mathematics • Concerning the participation in upper secondary vocational education, there has been a sharp increase in participation rate of pupils over 2000-2004 (from 30 to 55%). <p>Supply:</p> <ul style="list-style-type: none"> • There are financial incentives given to teachers who train in subjects with shortages. • Some teachers are allowed to work beyond retirement because of shortages. • There is some country-wide mobility among kindergarten teachers. Foreign teachers have to meet specific 					

	qualifications and language requirements.
Assessment and validation	<p>The base case predicts small surpluses at primary and secondary levels.</p> <p>Considering the low participation rate in Malta, it can be expected that the demand will increase in the next decade. High participation rates would lead to a small shortage of teachers.</p> <p>A lower pupil teacher ratio would limit the surplus of teacher.</p>

Netherlands				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	NA	NA	surplus of 462 (0.2% of 2004 teachers)	surplus of 4,052 (2% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	NA	NA	- 5% (of 2009 teachers)	- 3% (of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	NA	NA	- 1%(of 2009 teachers)	1%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	NA	NA	- 2 %(of 2009 teachers)	- 6%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	NA	NA	- 4 %(of 2009 teachers)	- 7%(of 2014 teachers)

Key data	<i>Number of teachers (2004)</i> Level 1: 132068 All levels: 192,315	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 12.1 ²⁴	<i>Participation rate (2004) + 16 years old</i> 72%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 2%		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> 0.02	<i>New graduates as proportion of all teachers (2005)</i> 13.5 ²⁵ %	<i>Dormant teachers as proportion of all teachers (2005)</i> 134.4%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 2.6 30< >55 years old: 1.3 >55 years old: -2.0		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.8%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 33%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>102.3%</td><td>156.3%</td></tr></table>	102.3%	156.3%	<i>Proportion of female teachers</i> 65%
102.3%	156.3%					
Observations from the literature	Demand/supply balance: <ul style="list-style-type: none"> ▪ The shortage of teachers in the Netherlands applies especially to the big cities and to secondary education. 					

²⁴ Eurostat recorded 15.9

²⁵ Figures provided by the Netherlands ministry of education suggest that the actual number of teaching graduates is 11,700, this gives a proportion of 6.1% of the taching population. The Replacement Needs Model was calculated on the larger number of graduates reported in UOE table EF14 of 32,607. This difference has very little effect on the projections, any changes are within the model's margin of error, although it does significantly alter the proportion of graduates entering the teaching profession.

- According to the Maastricht Study, there are actual and potential future vocational teacher shortages in this country.

The forecasting model developed by the Dutch Ministry of Education (2006) identified the following trends:

- *A decrease in the number of pupils in primary education (after 2009).* Consequently, the demand for teachers at this level of education will decrease.
- *Ageing of the teaching labour force.* An increase in the demand for teachers will be a consequence of a substantial group of teaching staff going into (early) retirement. This trend will become more visible in secondary and vocational education from 2007 onwards.
- *An increase in part-time work.* The actual number of people needed to fill all the vacancies in education is higher than the number of posts since in education the occurrence of part-time work is increasing.
- *Increasing popularity of teacher training.* In the period 1998-2004 entry into teacher training increased by 25% and is currently more than 16,000 people a year. Moreover, it seems that 90-95% of teaching graduates for primary education opts for a job in education as opposed to 65% for secondary education.
- Account has to be taken of the “silent reserve” and the fact that, especially in adult and vocational education, a proportion of the teachers is not formally qualified.
- For both primary and secondary education teacher *shortages* are expected to occur by 2010, albeit no shortage is expected for primary education in the case of a depressed labour market condition.

Demand: The following factors are influencing demand:

- Since 1994 regular schools were extended so that they could cater for children with special needs.
- Participation in upper secondary vocational education is almost 70%.

Supply:

- Remuneration packages have been made more attractive to increase the competition position with other professions in the labour market.
- Substantial effort has to be put in providing for good child care.
- Since 2000 the flexible pension allowances after the age of 61 are being increased to encourage people to stay longer in the labour force.
- In secondary education the shortage of teachers is being addressed by hiring unqualified teachers

	<p>See also Annex A4 'The forecasting model developed by the Dutch Ministry of Education' which contains more detailed information on future supply and demand.</p>
<p>Assessment and validation</p>	<p>The base case predicts very small surpluses at levels 1,2 and 3 for 2009 and 2014.</p> <p>Considering the low participation rate today, it can be expected that demand will increase in the future. A high demand scenario would lead to a shortage of teachers.</p> <p>A low supply scenario would also lead to shortages. In particular, a buoyant labour market would reduce the inflow into the profession and the number of entrants.</p>

Poland						
Key data	<i>Number of teachers (2004)</i> All levels: 588419	<i>Pupil teacher ratio (2004) Level 1,2, 3 –</i> NA	<i>Participation rate (2004) + 16 years old</i> 85%	<i>Annual percentage growth/decline in numbers of teachers (2000-2004)</i> -0.1		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -3.4	<i>Number of new graduates with teaching qualifications in 2004:</i> 65847	<i>Dormant teachers as proportion of all teachers (2005)</i> 50.3	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004)</i> NA		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 5.1%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 60%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td style="text-align: center;">77.7%</td><td style="text-align: center;">137.1%</td></tr></table>	77.7%	137.1%	<i>Proportion of female teachers</i> NA
77.7%	137.1%					
Observations from the literature	<p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> ▪ Decrease in the school population is leading to the closure of some schools. ▪ Concerning the participation in upper secondary vocational education, a decrease in participation rate of pupils has been observed over 2000-2004 (from 65 to 50%). ▪ The new training standards for teachers include use of ICT, good command of at least one foreign language, increased number of hours in professional training. ▪ There is currently a high demand for specialist teachers of western languages <p>Supply:</p>					

	<ul style="list-style-type: none"> ▪ Teachers' salaries are low and highly differentiated due to the decentralization and reliance on local budgets. ▪ Marked decline in the financial status of teachers vis à vis other professionals with the same education. ▪ Inter professional mobility: system to encourage people from industry to take up a teacher's position in a vocational school. ▪ Intra professional mobility: to meet a current demand for specialist teachers of western languages, teachers of other subjects are encouraged to retrain. ▪ Teachers may move anywhere within the country without losing all their salary entitlements. ▪ The majority of teachers and trainers at ISCED level 3 teach in pre-vocational and vocational programmes.
Assessment and validation	No base case projections where possible for Poland. Considering the sharp decrease in the school population, the lower demand might lead to surpluses.

Portugal				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 802 (6% of 2004 teachers)	surplus of 1,737 (12% of 2004 teachers)	surplus of 2,130 (1% of 2004 teachers)	shortage of 1,540 (1% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 23% (of 2009 teachers)	- 16% (of 2014 teachers)	- 5%(of 2009 teachers)	- 7%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 37%(of 2009 teachers)	- 30%(of 2014 teachers)	1%(of 2009 teachers)	- 1%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	5%(of 2009 teachers)	10%(of 2014 teachers)	9%(of 2009 teachers)	10%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	1%(of 2009 teachers)	3%(of 2014 teachers)	- 2%(of 2009 teachers)	- 9%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i>

	Level 0: 14470 Level 1: 65548 Level 2 and 3: 85858 Total 1-3 = 151,406	9.8	88%	NA		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -0.07	<i>New graduates as proportion of all teachers (2005)</i> 14.2	<i>Dormant teachers as proportion of all teachers (2005)</i> 81.3	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 2.4 30< >55 years old: -0.3 >55 years old: -1.6		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 2.3%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>147.3%</td><td>331.5%</td></tr></table>	147.3%	331.5%	<i>Proportion of female teachers</i> 77%
147.3%	331.5%					
Observations from the literature	<p>Demand/supply balance:</p> <p>There will be increased demand for teachers as Portugal tries to meet the EU educational objectives. Currently, Portugal displays low levels of basic competencies, compared to the average for their counterparts in most of the Member States. Between 2000 and 2003 there was an improvement in Portugal's results in the indicator that is used in this domain (level of reading literacy among 15 year-olds, as measured by the OECD PISA Study), although they are still far below the Community average.</p> <p>There is a need to drastically reduce the shortfall from which Portugal is suffering in relation to most of the countries in the European Union, as regards both the rate of completion of secondary education, and the proportion of early school leavers. Despite the progresses that have been made since 2000, Portugal is still (or at least was in 2004) one of only two Member States in which the percentage of people between the ages of 20 and 24 who have completed upper</p>					

	<p>secondary education remains below 50% (still a long way from the European target of 85%). Similarly, in 2004 Portugal continued to occupy the second-worst place in the European Union as regards the percentage of the 18-24 age group who did not pursue any type of studies or training after their basic nine years of schooling, also despite the important progress that has been achieved in the last few years.</p> <p>(European Commission, <i>National Report on the Implementation of the Education and Training 2010 Work Programme</i>, 2005)</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • Schools are closing and there is a redistribution of the teaching population. <p>Supply:</p> <ul style="list-style-type: none"> • Salary progression is slow. • The teaching profession does not have a high prestige. • New training/qualifications programmes are launched to provide teacher skills in core areas. • Portugal relies on existing teaching staff for replacement needs.
<p>Assessment and validation</p>	<p>The base case predicts a small surplus in 2009 which then becomes a shortage in 2014 for primary and secondary levels.</p> <p>The high demand scenario is consistent with the current low rate of completion of education and the high number of early school leavers emphasised in the literature. It can be expected that demand will increase as Portugal complies with European targets.</p> <p>Reducing the current net outflow of teachers between 30 and 55 in the profession would lead to a surplus of teachers at all levels.</p>

Romania				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	shortage of 3,063 (9% of 2004 teachers)	shortage of 9,856 (28% of 2004 teachers)	surplus of 4,825 (2% of 2004 teachers)	shortage of 8652 (4% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 46% (of 2009 teachers)	- 88% (of 2014 teachers)	- 2%(of 2009 teachers)	- 9%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 65%(of 2009 teachers)	- 112%(of 2014 teachers)	- 30%(of 2009 teachers)	- 41%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	11%(of 2009 teachers)	- 3%(of 2014 teachers)	17%(of 2009 teachers)	17%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	- 12%(of 2009 teachers)	- 47%(of 2014 teachers)	1%(of 2009 teachers)	- 9%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1999-2004)</i>

	Level 0: 34585 Level 1: 57536 Level 2 and 3: 157681 Total 1-3 = 215,217	16	73%	-2.3		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 2.6	<i>New graduates as proportion of all teachers (2005)</i> 0.7%	<i>Dormant teachers as proportion of all teachers (2005)</i> 89.7%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 2.2 30< >55 years old: -1.8 >55 years old: -3.1		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 0.9%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>63.1%</td><td>108.2%</td></tr></table>	63.1%	108.2%	<i>Proportion of female teachers</i> 76%
63.1%	108.2%					
Observations from the literature	<p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • A policy to reduce class size and teaching load is expected to lead to an increase in the number of teachers needed, particularly in vocational education • Participation in upper secondary vocational education is above 60% • Pupil/teacher ratio has been falling during the last decade. <p>Supply:</p> <ul style="list-style-type: none"> • Teachers are less likely to want to work in rural communities because the socioeconomic pressures result in falling 					

	<p>school conditions and increased pressure.</p> <ul style="list-style-type: none"> • There are many requirements for foreign teachers who wish to come to Romania. • New teacher training programmes in rural communities are providing career opportunities for teachers both for those who are undertaking the training as well as, in many cases, the mentors who are delivering it.
Assessment and validation	<p>The perception of a shortage of teachers is consistent with the high pupil teacher ratio.</p> <p>The base case predicts a small surplus at levels 1,2 and 3 for 2009, transforming into a shortage in 2014. A shortage is also expected at pre-primary level already in 2009.</p> <p>The high demand scenario is consistent with recent policies aiming at reducing class sizes and pupil teacher ratio. The impact lowering the ratio to 12 would be a considerable shortage at all levels. Participation rates can also be expected to increase considering the relatively low participation in 2004.</p>

Slovakia				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	shortage of 1,655 (13% of 2004 teachers)	shortage of 3,989 (33% of 2004 teachers)	surplus of 5,267 (8% of 2004 teachers)	surplus of 8,957 (13% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 63% (of 2009 teachers)	- 117% (of 2014 teachers)	8% (of 2009 teachers)	16%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	- 29%(of 2009 teachers)	- 72%(of 2014 teachers)	- 10%(of 2009 teachers)	- 2%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	10%(of 2009 teachers)	6%(of 2014 teachers)	17%(of 2009 teachers)	28%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	- 16%(of 2009 teachers)	- 51%(of 2014 teachers)	6%(of 2009 teachers)	10%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i>

	Level 0: 12263 Level 1: 14420 Level 2 and 3: 52192 Total 1-3 = 66,612	14.5	78%	0.03		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -3.2	<i>New graduates as proportion of all teachers (2005)</i> 13.5	<i>Dormant teachers as proportion of all teachers (2005)</i> 91.3	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 2.1 30< >55 years old: -1.8 >55 years old: -2.6		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 3.5%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 76%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>53.1%</td><td>78.2%</td></tr></table>	53.1%	78.2%	<i>Proportion of female teachers</i> 83%
53.1%	78.2%					
Observations from the literature	<p>Demand/supply balance:</p> <p>There is a shortage of IT and foreign language teachers (especially English). There appears to be a surplus of teachers in the vocational subject fields of commerce, sales and textile.</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> ▪ Concerning vocational education, the majority of pupils follow vocational programmes at upper secondary level as opposed to other programmes (around 75%). ▪ Increased demand for foreign language teachers in other than the public education systems. <p>Supply:</p>					

	<ul style="list-style-type: none"> ▪ The salary level is lower than the general salary level in the economy at large (79% in 2000 of the average salary level in the state sector). ▪ The fall in prestige has lead to an ageing teacher's population. The average age of teachers in Slovakia is 50 years old. ▪ The higher education institutions oriented at teacher training study still attract continuous interest because of the perceived advantages of the profession (job security, autonomy...) ▪ The majority of teachers and trainers at ISCED level 3 teach in pre-vocational and vocational programmes. ▪ Departures of many experienced teachers to sectors of the economy which offer better pay and conditions. <p>Interventions:</p> <p>Pay rises and bonuses have been set out in recent reforms.</p> <p>Various measures have been adopted in an attempt to try to fill the gap of foreign language teachers, including the employment of unqualified persons, both Slovak and foreign, retraining programmes for teachers of obsolete subjects, and an increase in both the number and variety of university degree courses in English. While these have met with varying degrees of success, there is still a clear need for in-service education, not only for unqualified and requalifying teachers, but also for their more experienced colleagues, who are faced with a climate of massive and ongoing change.</p> <p>References:</p> <p>Faudel H., <i>Teachers and Trainers in Vocational Education and Training in the Future Member States: An Overview</i>, European Training Foundation 2002</p> <p>Gill S., 'Closely Observed Teachers: Insett in Slovakia', <i>Papers from the 1995 Polish Teacher Trainer Conference Krakow</i>, Issue PTT 3/4, April 1995</p>
<p>Assessment and validation</p>	<p>The baseline previsions forecast shortages of teachers at Level 0 and some surplus at other Levels. The fact that the number of teachers is stagnating, while the number of pupils is decreasing might slightly equilibrate these shortages.</p> <p>On the other hand, if the pupil teacher ratio (currently 14.5) is to improve, it would cause shortages at all the levels of education and severe ones at level 0 (it has to be stated though, as is explained in the report, that teaching assistant and other staff at pre-primary level is not included in the UOE data)</p> <p>Given the very important proportion of dormant teachers (91.3% of all graduated teachers) and the fact that teacher training still attracts many students, the shortages could be addressed through improving teachers' conditions, e.g. wage rise at least to the average level. Given that the demand for language skilled people is high in other sectors which offer better salaries, it remains a challenge to attract these people into teachers' profession.</p>

Slovenia				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	shortage of 530 (21% of 2004 teachers)	shortage of 1,321 (52% of 2004 teachers)	surplus of 795 (4% of 2004 teachers)	surplus of 527 (2% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	- 54% (of 2009 teachers)	- 154%(of 2014 teachers)	4%(of 2009 teachers)	3%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ration = 12	- 113%(of 2009 teachers)	- 250%(of 2014 teachers)	- 17%(of 2009 teachers)	- 18%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	2%(of 2009 teachers)	- 10%(of 2014 teachers)	14%(of 2009 teachers)	19%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	- 26%(of 2009 teachers)	- 102%(of 2014 teachers)	1%(of 2009 teachers)	- 3%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1999-2004)</i>

	Level 0: 2565 Level 1: 6185 Level 2 and 3: 16456 Total 1-3 = 22,641	14.5	84%	- 0.9		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> - 1.6	<i>New graduates as proportion of all teachers (2005)</i> 13.6%	<i>Dormant teachers as proportion of all teachers (2005)</i> 61.4%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 2.1 30< >55 years old: -1.0 >55 years old: -2.4		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.9%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> Min Max <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td style="text-align: center;">77.4%</td><td style="text-align: center;">150.0%</td></tr></table>	77.4%	150.0%	<i>Proportion of female teachers</i> 80%
77.4%	150.0%					
Observations from the literature	<p>Demand/supply balance: Teacher/student ratio is falling.</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • The recent introduction to new compulsory subjects requires teachers to have different training. • There is a need for more IT skilled teachers. • Children with special needs are increasingly integrated into mainstream classrooms, creating particular demand on teachers. • There is an increase in migrant children from the former Yugoslavia which causes teacher roles to change. 					

	<ul style="list-style-type: none"> Concerning vocational education, the majority of pupils follow vocational programmes at upper secondary level as opposed to other programmes (around 70%) <p>Supply:</p> <ul style="list-style-type: none"> Teaching is perceived as a secure profession. The salary level is higher than the average salary in the economy but lower than the state salary. <p>Interventions:</p> <p>The country has introduced new accelerated training in languages in order to address the need for foreign language teachers.</p>
<p>Assessment and validation</p>	<p>Base case projections show shortages of teachers at pre-primary level and very low surplus at other levels. Given that the number of teachers is decreasing together with the number of pupils, even though on slightly slower pace, these shortages will not equilibrate naturally.</p> <p>If the pupil teacher ratio continues to decrease, as mentioned in the literature, shortages will appear at all the education levels. Some of these might be addressed by the “hidden” potential among unemployed and, more importantly, dormant teachers.</p> <p>Another measure which could improve teachers’ numbers in pre-primary education is bringing the lowest wages closer to the average salary.</p> <p>The demand of particular skills due to increased presence of migrant children in schools and by inclusion of children with special needs into regular schools, might require particular teachers’ training.</p>

Spain				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	surplus of 19,051 (19% of 2004 teachers)	surplus of 57,960 (58% of 2004 teachers)	shortage of 16,369 (4% of 2004 teachers)	shortage of 52,978 (12% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	14%(of 2009 teachers)	33%(of 2014 teachers)	- 14%(of 2009 teachers)	- 23%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	14%(of 2009 teachers)	33%(of 2014 teachers)	- 4%(of 2009 teachers)	- 12%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	- 12%(of 2009 teachers)	- 14%(of 2014 teachers)	- 3%(of 2009 teachers)	- 13%(of 2014 teachers)
Low supply scenario Number of new entrants reduced by 25%	10%(of 2009 teachers)	28%(of 2014 teachers)	- 6%(of 2009 teachers)	- 19%(of 2014 teachers)
Key data	<i>Number of teachers (2004)</i>	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i>	<i>Participation rate (2004) + 16 years old</i>	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i>

	Level 0: 100669 Level 1: 179271 All levels: 531,671 Total 1-3 = 431,002	11.7	81%	1.1		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> 0.46557	<i>New graduates as proportion of all teachers (2005)</i> 9.9% ²⁶	<i>Dormant teachers as proportion of all teachers (2005)</i> 9.8%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 2 30< >55 years old: 1.5 >55 years old: -2		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 4.2%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>144.52%</td><td>213.16%</td></tr></table>	144.52%	213.16%	<i>Proportion of female teachers</i> 66%
144.52%	213.16%					
Observations from the literature	Demand/supply balance: While Spain is not suffering any shortage of teachers at the moment, it could find their recruitment is more difficult in the future for areas like computer sciences and information technology, as there are some difficulties already in finding qualified staff (OECD 2003).					

²⁶ ²⁶ Figures provided by the Spanish ministry of education suggest that the actual number of teaching graduates is 33,062, this gives a proportion of 6.2% of the taching population. The Replacement Needs Model was calculated on the larger number of graduates reported in UOE table EF14 of 55,177. This difference has very little effect on the projections, any changes are within the model's margin of error, although it does significantly alter the proportion of graduates entering the teaching profession.

	<p>According to Eurydice (<i>The teaching profession in Europe: Profile, trends and concerns. Report II, 2002</i>), although currently not suffering any teacher deficit, Spain is concerned that the favourable economic climate may lead to shortages in the long run. The primary objective of to keep the influx into the profession in line with demand.</p> <p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> • Need to train teachers in ICT with the introduction of new compulsory subjects in the classroom <p>Supply:</p> <ul style="list-style-type: none"> • Initially Spanish salaries are competitive but the salary scale quickly flattens. • There needs to be more opportunities for career progression. • There is difficulty recruiting men into the teaching profession. • Within Spain it is difficult for teachers to move because of the different regional languages.
<p>Assessment and validation</p>	<p>The base case scenario predicts shortages at primary and secondary levels, but surpluses at pre-primary level.</p> <p>Increasing the participation rate to 85% will make the shortage substantially larger. Considering the already high participation rates and good pupil teacher ratio, the two high demand scenarios confirm the above tendency. Given that the number of pupils is growing at a slower pace than the number of teachers the small shortage of teachers in next few years might equilibrate.</p> <p>Low supply scenarios have a more limited impact on the shortage, but limiting the supply will also make the shortage worse. Given the attractiveness of teachers' salaries, these should continue to stimulate the inflow of new teachers to the profession. At the same time the literature underlines that the conditions for career progression should be improved in order to motivate teachers.</p> <p>Concerning pre-primary level, limiting the inflow of 30-55 would create a shortage.</p>

Sweden				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	NA	NA	surplus of 16,814 (12% of 2004 teachers)	surplus of 31,524 (22% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	NA	NA	11%(of 2009 teachers)	20%(of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	NA	NA	11%(of 2009 teachers)	20%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	NA	NA	- 1 %(of 2009 teachers)	- 5%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	NA	NA	7%(of 2009 teachers)	13%(of 2014 teachers)

Key data	<i>Number of teachers (2004)</i> Level 0: 33972 Level 1: 68325 Level 2 and 3: 75243 Total 1-3 = 143,568	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 9.8 ²⁷	<i>Participation rate (2004) + 16 years old</i> 87%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 2.9
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> -0.5	<i>New graduates as proportion of all teachers (2005)</i> 9.7%	<i>Dormant teachers as proportion of all teachers (2005)</i> 112.4%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 1.6 30 < >55 years old: 2.9 >55 years old: -1.8
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 2%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> 65%	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> NA (no salary scale)	<i>Proportion of female teachers</i> 74%
Observations from the literature	<p>Demand/supply balance:</p> <p>Shortages of qualified teachers, e.g. those lacking full teaching credentials, have increased from 7 percent in 1995 to 20 percent in 2003 for primary and lower secondary education and from 10 percent to 20 percent in upper secondary education (Swedish National Agency for Education).</p> <p>A rise in the number of pupils in lower secondary education is expected in the immediate future. The children who were</p>			

²⁷ Eurostat recorded 12.5

	<p>born during the last baby boom are now entering upper secondary school, which means that the number of upper secondary school students is expected to rise from about 400,000 to over 500,000 up to 2010, after which the numbers will decline. According to forecasts made by Statistics Sweden, the number of compulsory school pupils is expected to fall from almost 1,100,000 to less than 900,000 during the above-mentioned period (OECD 2003).</p> <p>The recruitment of teachers in mathematics and sciences for secondary school as well as teachers in foreign languages is especially problematic. The shortage in the future seems to be most pronounced in these areas. On the other hand there are teacher education programmes where the number of students clearly exceeds the number of available places (e.g. pre-school teacher education and teachers in the areas of social sciences and the arts). Possibilities for work may be problematic in these domains (Kallós D., 'Recent Changes in Swedish Teacher Education', 1999).</p> <p>An issue requiring particular attention is the shortage of vocational teachers. The National Agency for Education considers an adequate supply of trained teachers to be the most important factor for maintaining and raising standards in upper-secondary education. In the agency's assessment, the graduation rate for vocational teachers will have to be tripled in the run-up to 2010 to meet needs (Ministry of Education, Research and Culture, <i>Implementing the 'Education and Training 2010' Work Programme</i>, Stockholm 2005).</p> <p>Supply: factors influencing supply of teachers include the following:</p> <ul style="list-style-type: none"> ▪ Following the collapse of the high tech industry, teacher education has become more popular. The number of applicants has increased during the last couple of years ▪ While the number of places in teacher training increased strongly in the 1990s, the number of applicants rose even more sharply. ▪ High rates of early retirement from the age of 60 onwards. ▪ Concerning vocational education, the participation in upper secondary vocational education is above 50%. The majority of teachers and trainers at ISCED level 3 teach in pre-vocational and vocational programmes.
<p>Assessment and validation</p>	<p>The base case scenario predicts surpluses at primary and secondary levels.</p> <p>This tendency is confirmed by the high participation, and the pupil/ teacher ratio already under 12. Moreover the number of pupils is expected to decline in the future.</p> <p>The low supply scenario has a strong impact: suppressing the inflow of 30/55 would lead to a slight shortage. The inflow of teachers being very responsive to labour market conditions, it can be expected that the inflow will only decline in a</p>

	situation of buoyant labour market.
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UK				
	Replacement needs at Level 0		Replacement needs at Level 1, 2 and 3	
	2009	2014	2009	2014
Base case projections	Not reliable	Not reliable	surplus of 55,980 (7% of 2004 teachers)	surplus of 73,796 (10% of 2004 teachers)
High demand scenario 1 Participation Rates Increased	Not reliable	Not reliable	3% (of 2009 teachers)	6% (of 2014 teachers)
High demand scenario 2 Pupil Teacher Ratio = 12	Not reliable	Not reliable	-12%(of 2009 teachers)	- 9%(of 2014 teachers)
Low supply scenario 1 No inflow or outflow between 30 and 55 yrs	7%(of 2009 teachers)	8%(of 2014 teachers)	10%(of 2009 teachers)	11%(of 2014 teachers)
Low supply scenario 2 Number of new entrants reduced by 25%	- 52%(of 2009 teachers)	- 197%(of 2014 teachers)	5%(of 2009 teachers)	5%(of 2014 teachers)

Key data	<p><i>Number of teachers (2004)</i></p> <p>Level 0: 42656</p> <p>Level 1: 258966</p> <p>Level 2 and 3: 494869</p> <p>Total 1-3 = 753,835</p>	<p><i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i></p> <p>14.5²⁸</p>	<p><i>Participation rate (2004) + 16 years old</i></p> <p>74%</p>	<p><i>Annual percentage growth/decline in numbers of teachers (1999-2004)</i></p> <p>0.4</p>		
	<p><i>Projected Annual Change in school age children between 2004 and 2015 (%)</i></p> <p>- 0.73</p>	<p><i>New graduates as proportion of all teachers (2005)</i></p> <p>10.1</p>	<p><i>Dormant teachers as proportion of all teachers (2005)</i></p> <p>36.7</p>	<p><i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i></p> <p><30 years old: 2.7</p> <p>30< >55 years old: 0.3</p> <p>>55 years old: -2.4</p>		
	<p><i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i></p> <p>1.3%</p>	<p><i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i></p> <p>47%</p>	<p><i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i></p> <p>Min Max</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px;">109.79%</td> <td style="padding: 2px;">177.83%</td> </tr> </table>	109.79%	177.83%	<p><i>Proportion of female teachers</i></p> <p>69%</p>
109.79%	177.83%					
Observations from the literature	<p>Demand/supply balance: There has been an increase in the number of teachers employed in the UK over the past ten years (1992 -2002). However, it should also be noted that school pupil numbers also grew over the same period, keeping the pupil teacher ratio at around the same level. Now pupil numbers in primary schools are once more falling, while teacher numbers continue to rise. Secondary school numbers were expected to peak in 2004, and the rising numbers of teachers should ensure an adequate supply. (Country Background Report for the OECD, 2003).</p>					

²⁸ Eurostat recorded 16.7

	<p>However, the government is now cutting the numbers of new teachers to be trained in England over the next three years. Cuts of 17% in secondary training numbers and 7% in primary have been ordered despite England's comparatively high pupil-teacher ratios - and the imminent retirement of large numbers of teachers over 50 - representing one third of the workforce. A recent Department for Education and Skills statement said the number of teachers in classrooms in England had risen by 32,700 since 1997, due to measures introduced by the government – such as 'golden hellos' – reversing the trend of falling applications for teacher training (MacLeod D., the Guardian Report, 2005).</p> <p>According to the University Council for the Education of Teachers (Ucet), the UK has one of the highest pupil-teacher ratios in Europe.</p> <p>Retirement and the age factor:</p> <p>A significant proportion of teachers will retire in the next decade and the cohort of teachers who will replace them is relatively small. There is also evidence of teacher shortage in some specific geographical areas including maths, science and technology (Country Background Report for the OECD, 2003).</p> <p>England is also characterised by having an ageing teaching population, especially in primary education. 40% of all teachers are aged 45 to 55, and those aged above 55 account for another 6% of the workforce. Within the next 10 years, nearly 50% of the current workforce would be expected to have retired. Since the number of pupils is not forecast to decrease significantly, at the current level of recruitment into teaching, a large shortage of teachers is therefore predicted (Dolton, P., <i>The Labour Market for Teachers: A Policy Perspective</i>, Commissioned by the Office of Manpower Economics, 2004)</p> <p>Supply: Factors influencing supply of teachers include:</p> <ul style="list-style-type: none"> • Increasing pressures on teachers' workloads and increasing difficulties to manage their professional practice. • Large remuneration differences within subjects and regions of the country. This is linked to shortages in recruitment in some subjects (math and languages) – financial incentives in place to manage surplus vs shortages. • Early retirement used as an effective tool to reduced the ageing proportion of teachers • Only limited movement of teachers between regions in England
Assessment and validation	<p>The base case scenario predicts a moderate surplus at primary and secondary levels.</p> <p>However the UK has a high pupil teacher ratio and relatively low participation rate. Lowering the pupil teacher ratio would create a shortage at levels 1,2 and 3. More teachers have to be trained if the government wants to improve the pupil teacher ratio.</p>

	Increasing participation rates and limiting the number of entrants would have a limited impact in reducing the surplus.
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Croatia				
Key data	<i>Number of teachers (2004)</i> Level 0: 7397 Level 1: 10807 Level 2 and 3: 36920 Total 1-3 = 47,727	<i>Pupil teacher ratio (2004) Level 1,2, and 3 – Eurostat recorded</i> 13.8	<i>Participation rate (2004) + 16 years old</i> 51%	<i>Annual percentage growth/decline in numbers of teachers (2003-2004)</i> - 1.1
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> NA	<i>Number of new graduates with teaching qualifications in 2004:</i> 3060	<i>Dormant teachers as proportion of all teachers (2005)</i> 228.6%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> NA
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 3.75	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> NA	<i>Proportion of female teachers</i> 75%
Observations from the literature	<p>Demand: The following factors are influencing demand:</p> <ul style="list-style-type: none"> Concerning vocational education, the majority of pupils follow vocational programmes at upper secondary level as opposed to other programmes (around 75%) <p>Supply:</p> <ul style="list-style-type: none"> Teaching salaries are low. Constant changing in school policies are causing teachers to feel insecure and disoriented. 			

	<ul style="list-style-type: none">• Teachers are expected to have more qualifications now than before.
Assessment and validation	No base case projections were possible for Croatia. The number of dormant teachers is very high and might be unreliable. No specific evidence was found in the literature.

FYR of Macedonia				
Key data	<i>Number of teachers (2004)</i> Level 0: 2934 Level 1: 5681 Level 2 and 3: 14260 Total 1-3 = 19,941	<i>Pupil teacher ratio (2004) Level 1,2, and 3 – Eurostat recorded</i> 17.4	<i>Participation rate (2004) + 16 years old</i> 78%	<i>Annual percentage growth/decline in numbers of teachers (2000-2004)</i> 0.18
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> NA	<i>Number of new graduates with teaching qualifications in 2004:</i> 2215	<i>Dormant teachers as proportion of all teachers (2005)</i> NA	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> NA
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> NA	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> NA	<i>Proportion of female teachers</i> 62%
Observations from the literature	<p>Demand/supply balance:</p> <p>The use of the teaching force is not always efficient. Most schools already work on two or more shifts to accommodate various language groups. Nevertheless, universities train teachers (for grades 5 and upwards) for one subject specialisation only, so that they are qualified to teach that subject only; this means schools need more teachers but are unable to offer them sufficient teaching hours. The MoES is addressing this problem by training teachers to teach several subjects at grades 5-8, or teach two subjects in secondary schools.</p> <p>Inflexible employment regulations restrict possibilities of part-time and shared employment between schools; smaller and poorer schools or groups of schools therefore have no access to better-qualified teachers, especially in subjects like</p>			

	<p>languages and IT.</p> <p>Over-employment in the teaching force cannot be solved just by reducing numbers – only structural changes (increasing school sizes, for example) may lead to gradual decrease in demand over time. However, there may be more room for manoeuvre in teachers’ salaries. The salary scheme is very flat with small increments. Linking salary and promotion with performance would create a more differentiated scale, improvement in quality as well as efficient use of scarce resources (OECD, <i>Thematic Review of National Policies for Education – FYROM. Stability Pact for South Eastern Europe 2002</i>)</p> <p>Concerning vocational education, the participation in upper secondary vocational education is around 60%.</p>
Assessment and validation	No base case projections were possible for Macedonia.

Iceland						
Key data	<i>Number of teachers (2004)</i> Level 0: 1922 Level 1: Level 2 and 3: 5803	<i>Pupil teacher ratio (2004) Level 1,2, and 3 – Eurostat recorded</i> 11.3	<i>Participation rate (2004) + 16 years old</i> 82%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> 1.7		
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> NA	<i>Number of new graduates with teaching qualifications in 2004:</i> 1402	<i>Dormant teachers as proportion of all teachers (2005)</i> 75%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 1.5 30< >55 years old: -0.8 >55 years old: -1.2		
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> NA	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <i>Min</i> <i>Max</i> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>60.11%</td><td>97.18%</td></tr></table>	60.11%	97.18%	<i>Proportion of female teachers</i> 77%
60.11%	97.18%					
Observations from the literature	Demand/supply balance: In Iceland in recent years, the level of shortage has remained much the same. As an indicator, the proportion of posts allocated to non-qualified or fully but not appropriately qualified teachers was around 15% in 2000. Long-term planning looking 10 or more years ahead exists in Iceland. It has only adopted forward planning policies in 2000 as a direct response to teacher shortages (Eurydice, <i>The Teaching Profession in Europe: Profile, Trends and Concerns, Report II: Supply and Demand</i> , 2004).					

	<p>Concerning vocational education, the participation in upper secondary vocational education is around 35%. According to the Maastricht Study, there are actual and potential future vocational teacher shortages in Iceland.</p> <p>Supply:</p> <ul style="list-style-type: none"> ▪ The minimum basic salary is very low. Local authorities or school authorities in have the decision-making autonomy to allocate salary bonuses to posts for teachers who work in classes containing mixed groups of pupils. ▪ The negative perception of the teaching profession is strong: less than 10 % of teachers feel appreciated. They rank their profession as one of the least prestigious and attractive. ▪ Several problems for the short-term mobility of teachers and trainers include job replacement, lack of funding, language barriers and other organizational issues.
Assessment and validation	No base case projections were possible for Iceland.

Liechtenstein				
Key data	<i>Number of teachers (2004)</i> Level 0: 62 Level 1: 260 Level 2 and 3: 334 Total 1-3 = 594	<i>Pupil teacher ratio (2004) Level 1,2, 3 – calculated</i> 9.1	<i>Participation rate (2004) + 16 years old</i> 55%	<i>Annual percentage growth/decline in numbers of teachers (1998-2004)</i> NA
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> NA	<i>New graduates as proportion of all teachers (2005)</i> NA	<i>Dormant teachers as proportion of all teachers (2005)</i> NA	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> NA
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> NA	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> NA	<i>Proportion of female teachers</i> 62%
Observations from the literature	<p>Demand/supply balance:</p> <p>There is no shortage in Liechtenstein: the other side of the coin is oversupply leading to teacher unemployment. Liechtenstein reported that a falling birth rate had reduced the requirement for teachers.</p> <p>Liechtenstein cooperates closely with Switzerland in the areas of teacher training and employment. Switzerland has a forward planning policy under which trends in teacher supply and demand are monitored. As these trends are noted at an early stage, Liechtenstein relies on the findings for its own purposes and supports and contributes to this activity.</p>			

	<p>(Eurydice, <i>The Teaching Profession In Europe: Profile, Trends And Concerns. Supply And Demand</i>, 2002)</p> <p>Concerning vocational education, the majority of pupils follow vocational programmes at upper secondary level as opposed to other programmes (around 80%).</p> <p>Liechtenstein is one of the countries in the EU which have much higher minimum basic salaries.</p>
Assessment and validation	No base case projections were possible for Liechtenstein.

Norway								
Key data	<i>Number of teachers (2004)</i> Level 1: 40388 Level 2 and 3: 42420 Total 1-3 = 82,808	<i>Pupil teacher ratio (2004) Level 1,2, and 3 – Eurostat recorded</i> 11	<i>Participation rate (2004) + 16 years old</i> 82%	<i>Annual percentage growth/decline in numbers of teachers (2000-2004)</i> 0.25				
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> NA	<i>Number of new graduates with teaching qualifications (2004):</i> 7340	<i>Dormant teachers as proportion of all teachers (2005)</i> 390.4%	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> <30 years old: 1.4 30< >55 years old: 0.4 >55 years old: -1.8				
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> 1.8%	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i> NA	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>77.81%</td> <td>95.66%</td> </tr> </tbody> </table>	Min	Max	77.81%	95.66%	<i>Proportion of female teachers</i> 65%
Min	Max							
77.81%	95.66%							
Observations from the literature	<p>Demand/supply balance:</p> <p>For the time being the shortage of teachers is not being felt in Norway but there is already a shortage of qualified teachers in mathematics and physics. Eurydice, <i>Reforms of the teaching profession: a historical survey</i>, Brussels: Eurydice 2002</p> <p>There is also a hidden lack of teachers, defined by the way that teachers teach subjects that they are not fully qualified</p>							

	<p>for. According to Statistics Norway, half the teachers that teach mathematics and science and environment in primary school did not have any credits in the subjects in 2000. Due to larger cohorts of students and high average age of teachers, there is a risk that in a few years time, a lack of teachers to teach in upper secondary education will exist. (Ministry of Education and Research, <i>Report 2003: The Situation in Primary and Secondary Education in Norway</i>, 2003)</p> <p>Statistics Norway has constructed a model to analyze the demand for and supply of teachers in the future based on a number of different assumptions. In the basic model it is assumed that the demand for general teachers in primary and lower secondary schools will increase from 2002 to 2006 and then stabilize until 2015. The supply is more stable in the period resulting in a demand gap from 2005 until 2015. When we look at all teachers (primary to upper secondary education) the difference between demand and supply is almost equal (Ministry of Education and Research, <i>The Common European Objectives in Education and Training: A Norwegian perspective</i>, Oslo, 2005).</p> <p>The proportion of older teachers has been increasing during the last decade, and will continue to increase in the future. The number of pupils in the relevant age group who are attending or will attend primary school and lower secondary school will be relatively stable in Norway for the next decade, but the number of pupils in upper secondary education will increase by almost 20 per cent by 2010, putting even more pressure on the recruitment of new teachers. However the resource situation of schools is better in Norway than in most countries, with the relative high teacher density in Norwegian schools (Ministry of Education and Research, <i>The Common European Objectives in Education and Training: A Norwegian perspective</i>, Oslo, 2005).</p>
Assessment and validation	No base case projections were possible for Norway. The number of dormant teachers appears to be very high. Based on the LFS data the vast majority of these dormant teachers work in other professions. No evidence was found in the literature to support or explain this figure.

Turkey				
Key data	<i>Number of teachers (2004)</i> Level 0: 19122 Level 1: 384004 All levels: 563,140 Total 1-3 = 544,018	<i>Pupil teacher ratio (2004) Level 1,2, and 3 – Eurostat recorded</i> 23.7	<i>Participation rate (2004) + 16 years old</i> 34%	<i>Annual percentage growth/decline in numbers of teachers (2000-2004)</i> 2.8
	<i>Projected Annual Change in school age children between 2004 and 2015 (%)</i> NA	<i>Number of new graduates with teaching qualifications (2004):</i> 105436	<i>Dormant teachers as proportion of all teachers (2005)</i> NA	<i>Annual average inflow of teachers in the teaching profession as a percentage of all teachers (1999-2004):</i> NA
	<i>Unemployment rate of teachers in 2005 (Source LFS unemployment of those indicating having a teacher qualification as their highest qualification)</i> NA	<i>Proportion of ISCED level 3 teachers that are vocational teachers or trainers in 2003</i>	<i>Relative salary of teachers per capita GDP 2000/2001 (source Eurydice) ISCED 2</i> NA	<i>Proportion of female teachers</i> 45%
Observations from the literature	<p>Demand/supply balance: In Turkey, the future demand for vocational teachers and trainers is expected to increase due to an increase in students entering vocational schools (Faudel, 2002). According to the Maastricht Study, there are actual and potential future vocational teacher shortages in Turkey (Lisbon-to-Copenhagen-to-Maastricht Consortium partners, 2004).</p> <p>Supply: The following factors are influencing supply:</p> <ul style="list-style-type: none"> • The low status and pay of teachers, combined with limited promotion opportunities and lack of recognition of performance contribute to the lack of motivation of the teaching force. 			

	<ul style="list-style-type: none"> • Turkey is the only country which requires that vocational teachers graduate from a four year university vocational teacher degree programme. • The Turkish Ministry of Education sends Turkish teachers to schools in Germany where they instruct Turkish children in their mother tongue.
Assessment and validation	No base case projections were possible for Turkey.

Annex G: Bibliography

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Annex H: List of Abbreviations and Acronyms

CEDEFOP	European Centre for the Development of Vocational Training
CLIL	Content and Language Integrated Learning
CPI	Cyprus Pedagogical Institute
ECTS	European Credit Transfer and Accumulation System
EEA	European Economic Area
EFTA	European Free Trade Association
ERA-MORE	European Network of Mobility Centres
FYROM	Former Yugoslav Republic of Macedonia
GRTP	Graduate and Registered Teacher Programmes
INDIRE	Italian National Institute for Documentation and Educational Research
ISCED	International Standard Classification of Education ISCED 0: Pre-primary education ISCED 1: Primary education ISCED 2: Lower secondary education ISCED 3: Upper secondary education
IUFM	Instituts Universitaires de Formation des Maîtres
IVT	Initial Vocational Training
LEA	Local Education Authorities
LSF	Labour Force Survey
MTL	Mother tongue lessons
NEOST	National Employers Organisation for School Teachers
OECD	Organisation for Economic Co-operation and Development
PAD	Paedagogischer Austauschdienst der Kultusministerkonferenz (Pedagogical Exchange Service)
QTS	Qualified Teacher Status
SCITT	School-centred initial teacher training

SBO	Sectorbestuur voor de Onderwijsarbeidsmarkt (Sectoral Management for the Education Labour Market)
TDA	Training and Development Agency for Schools
UOE	UNESCO-UIS/OECD/EUROSTAT
UIS	UNESCO Institute for Statistics
VET	Vocational Education and Training

Teaching Professionals (minor SOC group 23) - Teaching professionals teach the theory and practice of one or more disciplines at different educational levels, conduct research and improve or develop concepts, theories and operational methods pertaining to their particular discipline, and prepare scholarly papers and books. Tasks performed by workers in this sub-major group usually include: conducting classes, courses, or tutorials at a particular educational level, for educational or vocational purposes, including private lessons; conducting adult literacy programmes; teaching and educating handicapped persons; designing and modifying curricula; inspecting and advising on teaching methods and aids; participating in decisions concerning the organisation of teaching and related activities at schools and universities; conducting research in their particular subjects to improve or develop concepts, theories or operational methods for application in industrial and other fields; preparing scholarly papers and books. Supervision of other workers may be included.

All Professional (major SCO group 2) - Professionals increase the existing stock of knowledge, apply scientific or artistic concepts and theories, teach about the foregoing in a systematic manner, or engage in any combination of these three activities. Most occupations in this major group require skills at the fourth ISCO skill level. Tasks performed by professionals usually include: conducting analysis and research, and developing concepts, theories and operational methods, and advising on or applying existing knowledge related to physical sciences including mathematics, engineering and technology, and to life sciences including the medical profession, as well as to social sciences and humanities; teaching the theory and practice of one or more disciplines at different educational levels; teaching and educating handicapped persons; providing various business, legal and social services; creating and performing works of art; providing spiritual guidance; preparing scientific papers and reports. Supervision of other workers may be included.