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## 15

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## Staff in educational institutions

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# Table of contents

<b>1</b>	<b>Introduction</b>	<b>5</b>
<hr/>		
<b>2</b>	<b>Overview</b>	<b>6</b>
<hr/>		
<b>3</b>	<b>Teaching staff</b>	<b>7</b>
<hr/>		
3.1	Teaching staff by sex	8
3.2	Teaching staff by age	9
3.3	Teaching staff by work-time percentage	10
3.4	Student-teacher ratio	11
<hr/>		
<b>4</b>	<b>Management staff</b>	<b>14</b>
<hr/>		
4.1	Management staff by sex	15
4.2	Management staff by work-time percentage	16
<hr/>		
<b>5</b>	<b>Mid-level staff and administrative and technical staff at higher education institutions</b>	<b>17</b>
<hr/>		
<b>6</b>	<b>Personnel resources at higher education institutions by type of activity</b>	<b>19</b>
<hr/>		
<b>7</b>	<b>Sources</b>	<b>21</b>
<hr/>		
<b>8</b>	<b>Abbreviations</b>	<b>22</b>
<hr/>		



# 1 Introduction

This publication provides an overview of staff in Switzerland's educational institutions. Thereby a distinction is made between school staff and higher education institution staff.

## **School staff:**

Staff of compulsory education<sup>1</sup>, upper secondary level (general education courses and vocational education and training), and PET colleges<sup>2</sup>.

## **Higher education institution staff:**

Staff of universities (UNI), universities of applied sciences (UAS) and universities of teacher education (UTE).

The presented results show the teaching staff and management staff of the educational institutions. For the higher education institution staff, the descriptions additionally include the mid-level staff (assistants and research associates) and the administrative and technical staff. The analyses are based on data on higher education institution staff, stemming from the "university staff statistics (SHIS-PERS)" of the years 2016 and 2017<sup>3</sup>, and on data on state schools from the "school staff statistics (SSP)" of the academic year 2016/17.

When compared with the labour market as a whole, in which according to the Swiss Labour Force Survey (SLFS, FSO), roughly two-thirds of employed persons work full-time, in education a much smaller proportion – about one third – work full-time. For this reason, in order to provide a clear picture of staff volumes, in this publication in addition to staff numbers, the full-time equivalents (FTE) are also often shown.

**A full-time equivalent corresponds to a 100% job (Example: A 50% appointment equals 0.5 FTE).**

<sup>1</sup> Compulsory education lasts eleven years. It is divided into the primary level 1–2 (two years of kindergarten or the first two years of the first learning cycle), the primary level 3–8 and the lower secondary level (3 years).

<sup>2</sup> There is no formal regulation governing preparation for the federal and the advanced federal PET diploma examinations, for which courses are often taught in the form of modules. For this reason, only the school staff of PET colleges are presented from the domain of professional education and training (PET).

<sup>3</sup> For higher education institutions, staff numbers were gathered on the reference day 31.12.2017, whereas the full-time equivalents refer to the whole calendar year of 2017 with the exception of the student-teacher ratios (chapter 3.4) which refer to the FTEs for the calendar year 2016.

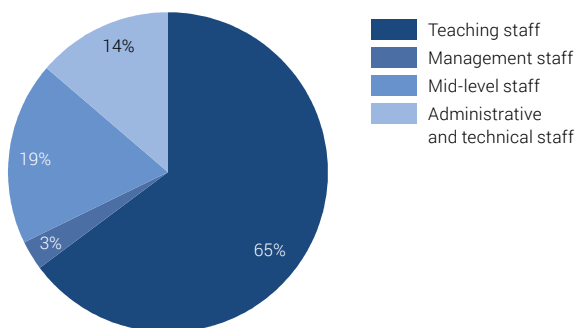
## 2 Overview

Overall, some 210 000 persons work in educational institutions with a total activity volume of some 140 000 FTE.

Measured in full-time equivalents, it can be seen that the teaching and management bodies of school staff account for 55% and 3% of total personnel resources respectively, whereas the proportion of teaching staff, management staff, mid-level staff and administrative and technical staff at higher education institutions account for 10%, 0.2%, 19% and 14% respectively.

### Staff volumes in the education system by staff category, 2016/17 (in FTE)

G1



Sources: FSO – SSP, SHIS-PERS

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### 3 Teaching staff

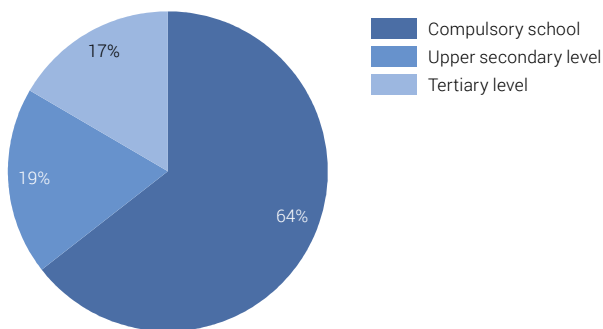
In compulsory education, at upper secondary level and at the PET colleges, teaching staff refers to personnel directly entrusted with teaching – excluding replacement teachers, interns or special education staff (e.g. speech or psychomotor therapists). At higher education institutions, the teaching staff is made up of professors (UNI) or lecturers with management responsibility (UAS/UTE), and of other lecturers (UNI and UAS/UTE)<sup>1</sup>.

Among school staff, the actual teaching body is comprised of 116 929 people. 16% of them teach at primary level 1–2, 43% at primary level 3–8, 29% at lower secondary level, 10% in general education courses at upper secondary level, 15% in vocational education and training (VET), and 2% at the PET colleges<sup>2</sup>. 27 907 people are employed as teaching staff at the higher education institutions: 49% at the UNI, 41% at the UAS and 10% at the UTE.

Measured in full-time equivalents it can be seen that almost two-thirds of the staff volume (64%) are accounted for by compulsory education, whereas 19% goes to upper secondary level (8% to general education courses and 11% to vocational education and training). 17% is accounted for by tertiary education (UNI: 7%, UAS: 6%, UTE: 2%, PET colleges: 1%).

#### Teaching staff volumes by educational level, 2016/17 (in FTE)

G2



Sources: FSO – SSP, SHIS-PERS

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<sup>1</sup> In this publication, mid-level staff are generally not included in the teaching staff of higher education institutions.

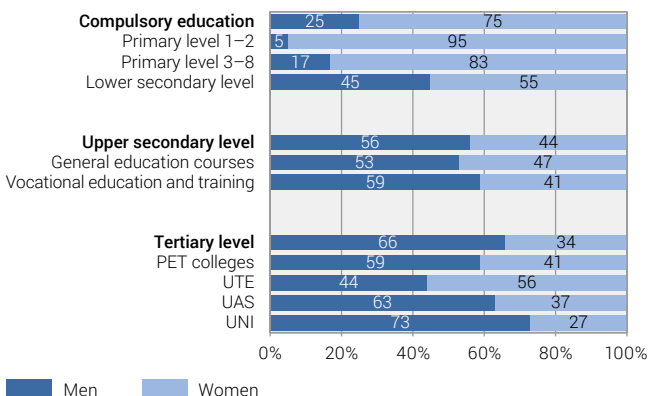
<sup>2</sup> As teaching staff can work at several educational levels at the same time, the sum of the indicated percentages exceeds 100%.

### 3.1 Teaching staff by sex

Some 90 000 women represent approximately 60% of all teaching staff in Switzerland. The percentage of women, however, varies greatly depending on the level of education: Whereas women are clearly overrepresented at primary level (primary level 1–2: 95%, primary level 3–8: 83%), from upper secondary level onwards they are under-represented – with the exception of the universities of teacher education.

#### Teaching staff by sex, 2016/17 (in persons)

G3



Sources: FSO – SSP, SHIS-PERS

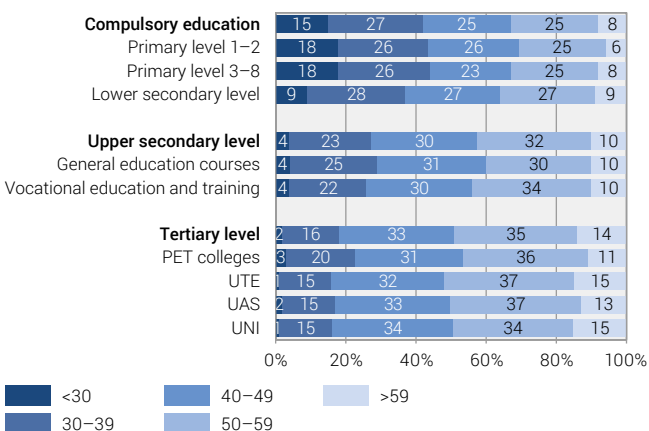
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## 3.2 Teaching staff by age

A clear trend can be observed in the age structure of teaching staff: the higher the level of education, the more strongly the older age groups are represented. The percentage of teaching staff aged 50 or over is 33% in compulsory education, whereas at upper secondary level it is 42% and at tertiary level 50%. In contrast, the percentage of teaching staff under the age of 30 decreases the higher the level of education and drops from 15% in compulsory education to 4% at upper secondary level and to 2% at tertiary level. This is related to the observation that teaching staff at higher educational levels go through longer training – especially for posts requiring a PhD.

### Teaching staff by age, 2016/17 (in persons)

G4



Sources: FSO – SSP, SHIS-PERS

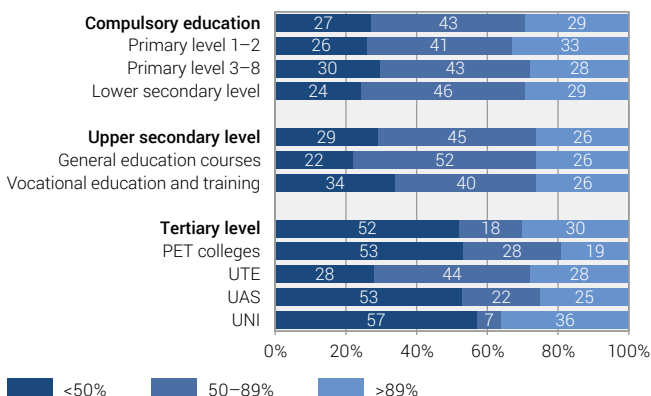
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### 3.3 Teaching staff by work-time percentage

The percentage of teaching staff employed on a full-time basis (90–100% appointment) is similar across the different educational levels and ranges from 26% at upper secondary level to 30% at tertiary level. Within the tertiary level, there are, however, marked differences between the types of institution, with the percentage of full-time teaching staff ranging from 19% at the PET colleges to 25% at the universities of applied sciences (UAS), 28% at the universities of teacher education (UTE) and 36% at the universities (UNI). The high percentage of teaching staff that work less than 50% is worth noting: in compulsory education it is 27%, at upper secondary level 29% and in the PET colleges 53%. In the higher education institutions it is 52% (UTE: 28%, UAS: 53%, UNI: 57%).

#### Teaching staff by work-time percentage, 2016/17 (in persons)

G5



Sources: FSO– SSP, SHIS-PERS

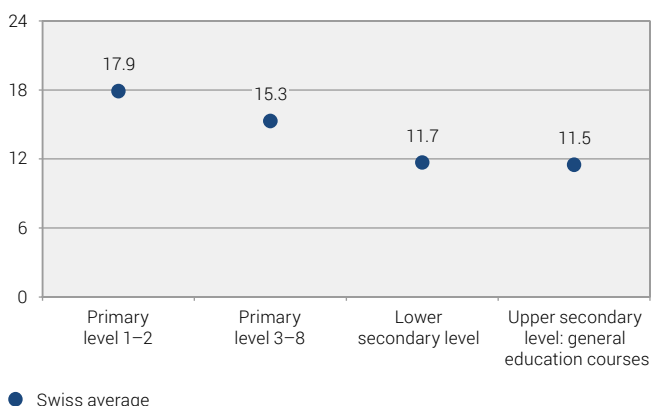
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### 3.4 Student-teacher ratio

The student-teacher ratio is determined by the number of students per teacher (in FTE) at a given educational level. This indicator therefore measures the teaching resources used for the education and supervision of students. With regard to school staff, there is a correlation between the student-teacher ratio and the educational level: the higher the level, the lower the number of students per teacher (17.9 at primary level 1–2; 15.3 at primary level 3–8; 11.7 at lower secondary level and 11.5 in general education courses at upper secondary level).

**Student-teacher ratio by educational level, 2016/17**  
(in FTE)

**G 6**



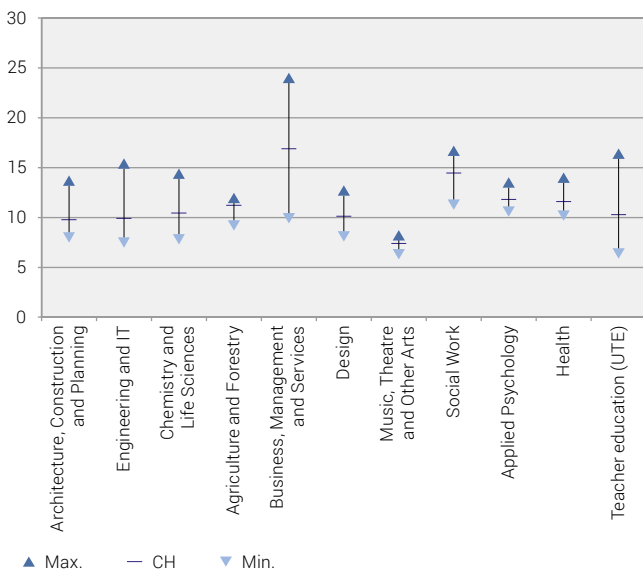
Source: FSO – SSP

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The student-teacher ratio in higher education institutions – in both the UNI and UAS/UTE – varies widely depending on the course. For this reason, the student-teacher ratio is shown by faculty. Technical and natural science faculties tend to show a lower student-teacher ratio than humanities and social sciences or economics and law (UNI: 11.9 for Natural Sciences compared with 41.2 for Law; UAS: 9.9 for Engineering and IT compared with 16.9 for Business, Management and Services).

## Student-teacher ratio in the UAS/UTE by faculty, 2016 (in FTE)

G7

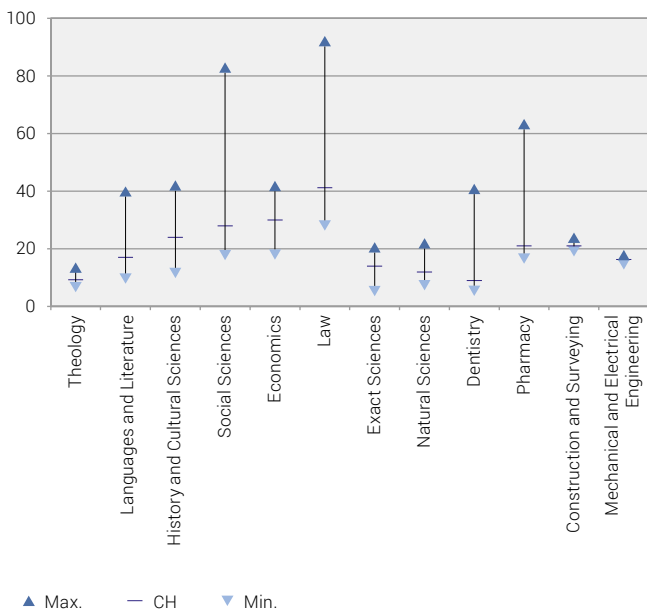


Source: FSO – SHIS-PERS

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## Student-teacher ratio in the UNI by faculty, 2016 (in FTE)

G8



Source: FSO – SHIS-PERS

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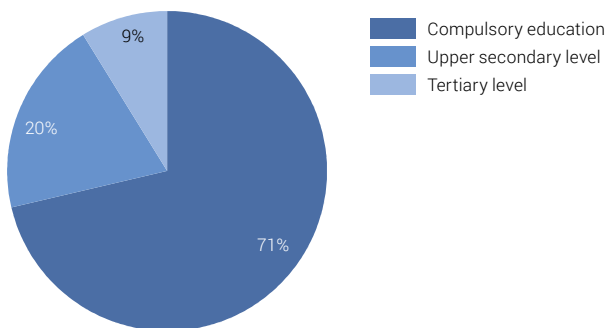
## 4 Management staff

Management staff are responsible for tasks in the realms of personnel management, development and the organisational management of educational institutions.

It comprises 11 080 persons, of whom 33% work at primary level 1–2, 51% at primary level 3–8, 29% at lower secondary level, 20% at upper secondary level and 6% at tertiary level<sup>1</sup>.

Measured in full-time equivalents, it can be seen that compulsory education accounts for almost three-quarters (71%) of this staff volume (primary level 1–2: 10%, primary level 3–8: 37%, lower secondary level: 24%), whereas upper secondary level accounts for 20% and tertiary level for 9%.

### Management staff volumes by educational level, 2016/17 (in FTE)

**G9**


Sources: FSO – SSP, SHIS-PERS

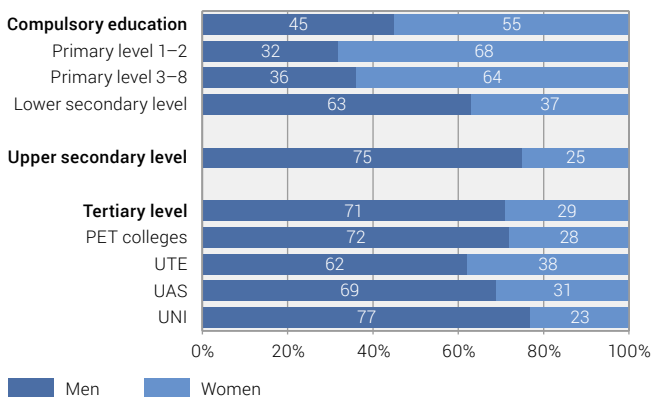
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<sup>1</sup> As management staff can work at several educational levels at the same time, the sum of the indicated percentages exceeds 100%.

## 4.1 Management staff by sex

Across all educational levels 49% of management staff are women and 51% men. The distribution by sex, however, correlates greatly with the level of education. A similar picture can be seen as for the teaching staff: the higher the level, the lower the percentage of women tends to be. Whereas women account for 68% at primary level 1–2 and are still in the majority at primary level 3–8 (64%), their percentage from lower secondary level (37%) onwards decreases markedly and is only 25% and 28% at upper secondary level and at the PET colleges respectively. At higher education institutions, the percentage of women among management staff ranges from 23% at the UNI to 31% at the UAS and 38% at the UTE.

### Management staff by sex, 2016/17 (in persons) G 10



Sources: FSO – SSP, SHIS-PERS

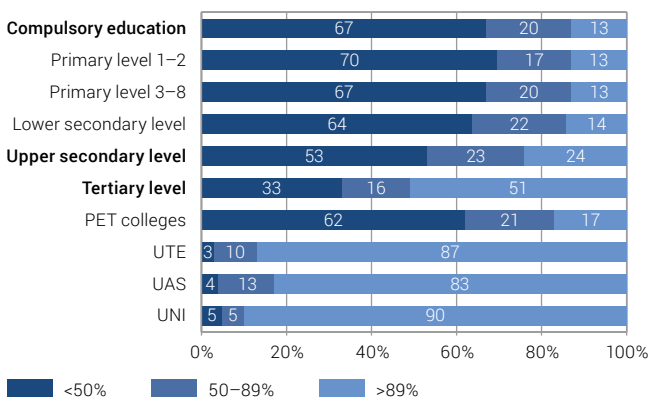
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## 4.2 Management staff by work-time percentage

The work-time percentage of management staff differs from that of teaching staff: firstly, the percentage of management staff working full-time tends to increase the higher the educational level (13% in compulsory education, 24% at upper secondary level and 51% at tertiary level). A second difference can be seen by comparing diagrams G11 and G5: with the exception of higher education institutions, at all educational levels the percentages of management staff working less than 50% are greater than those of teaching staff (67% compared with 27% in compulsory education, 53% compared with 29% at upper secondary level and 62% compared with 53% at PET colleges – but 4% compared with 52% at the higher education institutions).

### Management staff by work-time percentage, 2016/17 (in persons)

G11



Sources: OFS – SSP, SHIS-PERS

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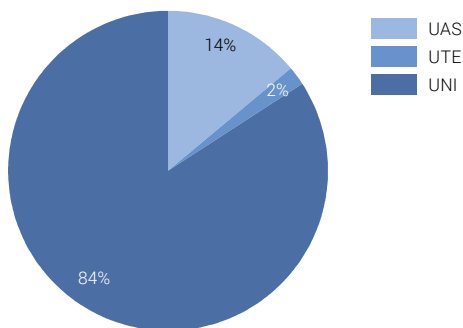
## 5 Mid-level staff and administrative and technical staff at higher education institutions

This chapter presents an overview of the remaining staff categories at higher education institutions. These can be divided into two groups: on one side are mid-level staff, i.e. assistants and research associates active in teaching and especially in research. On the other side are administrative and technical staff who work for the higher education institutions' central services (management, libraries, and social services, etc.) and operations (logistics and laboratories, etc.).

There are a total of 37 069 mid-level staff representing 26 222 FTEs, with the UNI accounting for over 80% and the UAS for over 10% of these resources, while the UTE account for 3% of the persons and 2% of the FTEs.

### Mid-level staff volumes by type of higher education institution, 2017 (in FTE)

G12



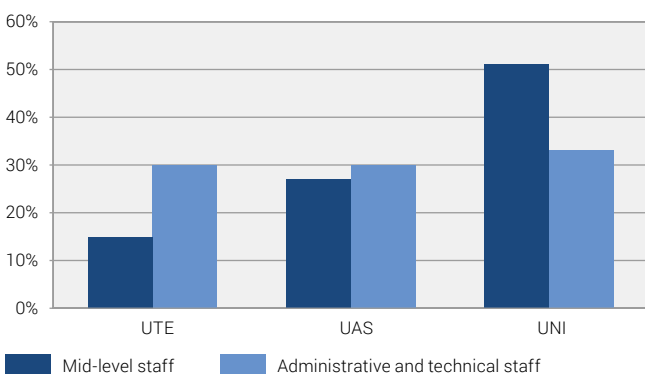
Source: FSO – SHIS-PERS

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There are 25 538 administrative and technical staff at higher education institutions. This corresponds to a volume of 19 444 FTEs. The UNI account for approximately three-quarters of these FTEs, the UAS for about a fifth and the UTE for the remaining 5%.

Measured in full-time equivalents, the share of administrative and technical staff is roughly a third of all personnel resources for all types of higher education institution. In contrast, the share of mid-level staff varies greatly between the types of higher education institution, accounting for 15% at the UTE, 27% at the UAS and 51% at the UNI.

### Mid-level staff and administrative and technical staff percentages in total staff volume by type of higher education institution, 2017 (in FTE) G13



Source: FSO – SHIS-PERS

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For further information, the publication “Statistics of Higher Education Institutions” (FSO, 2018) provides a clear overview of the higher education system and its structure, with a chapter devoted to staff at higher education institutions.

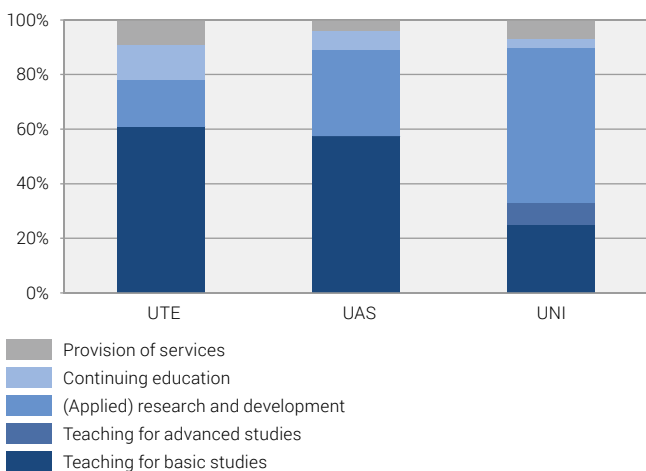
## 6 Personnel resources at higher education institutions by type of activity

Overall, 60 540 FTEs are available to higher education institutions. With over 43 300 FTEs, more than two-thirds of personnel resources are deployed in the UNI (72%). UAS personnel accounts for approximately 13 700 FTEs (23% of the total) and UTE personnel for 3538 FTEs or 6% of personnel resources in higher education.

The deployment of personnel resources varies widely between the different types of higher education institution. Whereas the UTE and UAS devote roughly 60% of personnel resources to teaching in basic tertiary education, this percentage is 25% at the UNI. Instead, at the UNI more than half of personnel resources are devoted to research and development (57%), whereas (applied) research and development at the UAS and UTE accounts for 32% and 17% of FTEs respectively. The amount of research activity at the UNI is related to the relatively high percentage of mid-level staff at the UNI (see chapter 5).

### Staff resources by type of higher education institution and type of activity, 2017 (in FTE)

G 14



Source: FSO – SHIS-PERS

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Only the UNI offer advanced educational courses (doctorate) to which they devote 8% of their resources. Continuing education courses (e.g. Master of Advanced Studies) are available at all types of higher education institution: these courses account for 13% of resources at the UTE, 7% at the UAS and 3% at the UNI. Services, such as scientific analyses for the public or private sector, account for 4%, 7% and 9% of resources at the UAS, UNI and UTE respectively.

Further information on the resources used in the higher education system can be found in the publication "Ressources humaines et financières des hautes écoles 2015"<sup>1</sup> (FSO, 2017).

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<sup>1</sup> Also available in German but not in English.

## 7 Sources

### School staff statistics (SSP)

The school staff survey gathers information on persons working in schools within the Swiss territory, as well as on the content of the activities they carry out. The survey covers all educational levels, from primary to tertiary (excluding higher education institutions). Data from 26 cantons are harmonised at national level. Compatibility with the UNESCO's International Standard Classification of Education (ISCED) is ensured. This means that school systems can be compared internationally.

### University staff statistics (SHIS-PERS)

In the context of the Swiss higher education information system (SHIS), the FSO carries out a survey of staff at the universities of teacher education (UTE), the universities of applied sciences (UAS) and the universities (UNI) comprised of the cantonal universities and the federal institutes of technology (FIT). As such the FSO produces annual statistical information on staff resources available to higher education institutions. The survey records variables about individuals (sex, age and nationality) as well as variables on their activities (category of staff, faculty, type of activity and work-time percentage).

### Further sources

The following additional sources were used to calculate the student-teacher ratios:

- Statistics on pupils and students (SDL)
- Statistics on students and degrees of higher education institutions (SHIS-studex)

### Definitions

All definitions used in this publication are available on the Federal Statistical Office's statistics portal at: [www.statistics.admin.ch](http://www.statistics.admin.ch)

## 8 Abbreviations

<b>FIT</b>	Federal Institutes of Technology
<b>FSO</b>	Federal Statistical Office
<b>FTE</b>	Full time equivalent
<b>SDL</b>	Statistics on pupils and students
<b>SHIS</b>	Swiss Higher Education Information System
<b>SHIS-PERS</b>	University staff statistics
<b>SHIS-studex</b>	Statistics on students and degrees of higher education institutions
<b>SLFS</b>	Swiss Labour Force Survey
<b>SSP</b>	School staff statistics
<b>UAS</b>	Universities of applied sciences
<b>UNI</b>	Universities (cantonal universities and FIT)
<b>UTE</b>	Universities of teacher education
<b>PET</b>	Professional education and training
<b>VET</b>	Vocational education and training

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