Swiss VPET in an international context

Universities of applied sciences: looking back and ahead to the future

Overview of public expenditure on ERI

Information from the State Secretariat for Education, Research and Innovation SERI

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

Swiss Confederation
Title page:
The introduction universities of applied sciences from 1997 signified a major reform for Switzerland’s higher education system. Blaise Roulet, who has been head of the UAS Division since 2001, looks back on the establishment of these ‘professional universities’ (see article on p12). Photo: HES-SO Nadine Gagnebin
Swiss education system

Dear Reader

In 2006 the Swiss electorate and cantons voted solidly in favour of the new constitutional provisions on education. When federal responsibility for education, research and innovation was concentrated in one department a year and a half ago, this also generated a largely positive echo. As a result, expectations that education policy will be new, (more) up-to-date and (more) strategic have risen.

It should be made clear that there is no lack of principles, political guidelines or will to coordinate in this policy area. Evidence for this can be found in the second edition of the Swiss Education Report, published in January, or in the joint federal-cantonal paper setting out objectives for education in Switzerland. Both the Education Report and this paper show that policymakers are aware of the problems and that improvements are being made where necessary.

Nonetheless, it is tempting to believe that the state of the Swiss education system can be improved overnight with more centralisation and greater political concentration. But we should not forget that this education system, which enjoys international recognition, has grown and evolved despite (or thanks to?) a lack of ‘national’ coordination. Why should we push for greater centralisation, believing that this will result in improvements, when it is generally accepted that the success of the system lies in its flexible interfaces, permeability and diversity?

But of course, we are all permitted to have opinions. It is possible to conceive of a totally different way of sharing responsibilities between the Confederation and the cantons in this policy area. The former would gain greater powers, the latter would relinquish them. It would just require an amendment to the Constitution. But is that really a priority and opportune at the current time? I have the gravest doubts.

Mauro Dell’Ambrogio
State Secretary for Education, Research and Innovation
VPET Act 10 years on

Vocational and professional education and training: Fit for the future

In 2014 Switzerland looks back at ten years of having a modernised Vocational and Professional Education and Training Act (VPETA). The revised Act came into force in 2004 and sparked off a comprehensive modernisation process in vocational and professional education and training over decade that followed. A large number of individual reforms have now been introduced. In the coming years, these will be consolidated and any remaining gaps will be closed.

The impetus for the legislative work came in the mid-1990s, not least due to the crisis in the apprenticeship market at the time. Various parliamentary interventions demanded that action should be taken. A Federal Council report on vocational and professional education and training published in 1996 also identified the need to modernise. In 1999 the electorate voted in favour of giving the federal government full responsibility for regulating vocational and professional education and training (VPET) (Federal Constitution, Article 63, paragraph 1). This laid the foundation for revising the law in order to bring it in line with professional, technological, economic and social developments. Existing legislation at the time dated back to 1978 and took account primarily of the commercial-industrial and trade sectors.

Revision at several levels

The new law established cooperation between the federal administration, cantons and professional organisations in the field of VPET and defined professional education and training as a discrete entity in tertiary-level education. A further important feature of the revised legislation was the introduction of a performance-related and full-cost-related lump-sum funding system.

The new legislation regulated non-academic professions, in particular in the fields of health, social work and art, that previously were the responsibility of the cantons. This meant integrating different VPET cultures, incorporating existing training courses into the new education system and creating new VPET courses.

The aims of the VPET Act are set out in Article 3:

- Employability of students
- Company competitiveness
- Encouraging individual skills
- Permeability
- Transparency

Employment prospects

The employability of VPET graduates was and is at the core of any reform and new developments in training opportunities. Since 2005, an average of almost 20 new education and training ordinances or ordinance reforms have been introduced annually. The new VPET Act introduced two-year Federal VET Certificate courses for young people with primarily practical talents, which unlike the former two-year apprenticeships give these young people skills which are sought after in the job market. By 2015 nearly all sectors will offer at least one two-year VET course. In 2014 SERI will be commissioning a study on the employment prospects of apprentices who complete these courses.

In professional education and training, too, courses are aimed at preparing students for the needs of the job market. PET students have very good employment prospects. The whole of the PET environment has, however, developed over time; the revised VPET Act united federal PET examinations and PET college courses under one umbrella at tertiary level, in particular as a formalised offering separate from more practically-oriented continuing education and training courses. Ten years after the VPETA first came into force, there was a need to even out imbalances in the financial burden on PET students compared with those in university education, establish the separate identity of professional education and training courses and make PET qualifications more recognisable and comparable. SERI is addressing these objectives in conjunction with its VPET partners in a strategic project on professional education and training launched in 2013.

The fact that the objectives and contents of the VPET training courses are defined by professional and business associations also boosts the competitiveness of the private sector. This means that training courses meet the actual needs of businesses. The modernisation which has taken place under the reforms means that courses are now more flexible and adaptable. The task of the state will be to keep administrative and regulatory requirements to a minimum so that businesses continue to want to train young people.

Integration and encouraging talent

In order to encourage individuals entering the job market, VPET partners have in recent years developed a range of support instruments, in particular for low-level entry. In 2006 VPET case management system was introduced, aimed at helping young people with various problems; all the institutions involved coordinate efforts to ensure the measures are implemented efficiently and effectively. The Confederation has provided CHF 15.5 million to fund consolidation activities between 2012 and 2015.

Talented young people are also being encouraged to a greater extent. This is an area in which there is room for development, e.g. the vocational baccalaureate. The VPET provides room for the creation of new models which can respond to the changing needs of society and the economy. Possible measures are currently being discussed by the Confederation with the cantons and private sector representatives. The professional organisations also play a major role, since they develop new educational courses.
and can most effectively persuade companies to recruit and train the young people they need.

**Individual reforms, then consolidation**

Permeability both within the VPET system and between the VPET and general education systems has continued to increase. The importance of gaining a recognised qualification was central to the legislative reform and the work done implementing it. In future the education and training system needs to allow increasingly for career flexibility – with changes in direction, leave for having a family and returning to work after a break.

Moves to unify, systematise and position the VPET offerings nationally have helped to increase the transparency of the system, as has the new funding model and the greater responsibility now borne by the individual players. Qualifications are now more clearly defined and comparable at an international level. With the creation of a national qualifications framework (NQF-CH-VPET) and supplementary explanations to VPET qualifications under the Copenhagen Process it is hoped that transparency between countries can be increased, and so make it easier for people to work abroad.

The individual reforms carried out under the total revision of the ten-year-old Vocational and Professional Education and Training Act have now largely been completed. In the coming years the task will be to consolidate and close any gaps. The VPETA, as framework legislation, provides the basis and freedom necessary to do this – for further developments and a flexible response to current and future challenges.

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**Year of Vocational Education and Training - Events calendar**

The Year of Vocational Education and Training 2014 organised by the Confederation, cantons and professional organisations aims to raise public awareness of vocational and professional education and training both nationally and internationally. A wide range of events such as apprenticeship conferences, VET days, job fairs and information days are drawing attention to vocational and professional education and training and the benefits it brings.

An overview of the events can be found in the calendar at www.berufsbildung2014.ch. Anyone organising an event, conference or other action to promote vocational and professional education and training can advertise on this same website. Please send your information to info@sbfi.admin.ch.

**Upcoming events (selection)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>1.7. und 18./19.9.</td>
<td>SFIVET summer campus, Zollikofen and Bern</td>
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<tr>
<td>2.7.</td>
<td>Swissmem-Industry Day, Zurich</td>
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<tr>
<td>29.8.-2.9.</td>
<td>OBA Ostschweizer Bildungs-Ausstellung, St. Gallen</td>
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<tr>
<td>9.-11.9.</td>
<td>BIM Berufsinfo-Messe 2014, Olten</td>
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<tr>
<td>11.-17.9.</td>
<td>Capa’cité 2014 at the heart of Neuchâtel</td>
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<tr>
<td>15.-18.9.</td>
<td>International Congress on Vocational and Professional Education and Training, Winterthur</td>
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<tr>
<td>17.-21.9.</td>
<td>SwissSkills Bern 2014, Bern</td>
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<td>5.11.</td>
<td>Lucerne Professional Education and Training Conference, Lucerne</td>
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<tr>
<td>5.-9.11.</td>
<td>FIUTSCHER, Bündner Berufsausstellung für Aus- und Weiterbildung, Chur</td>
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<tr>
<td>13.11.</td>
<td>National “Day of the Future”, throughout Switzerland</td>
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<td>18.11.</td>
<td>SERI VPET Congress, Bern</td>
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**Contact**

Katrin Frei, SERI  
Head of Fundamentals and Policy Section, Education Fundamentals Division  
☎+41 58 462 82 47  
✉ katrin.frei@sbfi.admin.ch

**Further Information (in German)**  
ヴィハウスsbfi.admin.ch/bb-2004-2014_de
Mobility in vocational and professional education and training

SFIVET becomes bilingual teaching agency

The world of work and education are becoming more and more internationalised, a development which creates new requirements in vocational and professional education and training. In order to encourage the learning of foreign languages for use in a job context, bilingual teaching needs to become more widespread. SERI is supporting the Swiss Federal Institute for Vocational Education and Training (SFIVET) in creating the structures to necessary achieve this.

According to Art. 12 para. 2 of the Ordinance on Vocational and Professional Education and Training, the individual VET ordinances should in general foresee the teaching of a second language. Of the 180 or so VET ordinances which have come into force since 2005, about a fifth prescribe instruction in a second national language or English.

Another way to boost the foreign language skills of students is bilingual teaching, a particularly attractive option considering the pressures on VET curricula. In bilingual courses content is taught in another language, either in a specialist or general subject. Additional lessons are not necessary. Experience in this gained so far, for instance in the canton of Zurich, has been positive. The canton’s office for middle school education and vocational education and training states in a brochure that bilingual teaching is very efficient and of considerable didactic value. Because teaching is in two languages, the material must be structured and presented very clearly. Content and vocabulary are gone over twice, in the first and second languages. Furthermore, this method of topic-based teaching encourages the practical use of language in a work context.

Commitment at apprenticeships conference

The issue of mobility has concerned VPET partners for several years. Solutions are sought to make it easier for VPET students to work abroad and to prepare them to be mobile on the international job market. Top representatives of the VPET partners made a commitment on this at the conference on apprenticeships held in 2011. It is hoped that the number of mobility activities such as language exchanges, work experience abroad etc. can be increased, and that the foreign language skills of VPET students can be improved. Following the 2011 apprenticeships conference, the VPET partners focused on encouraging the acquisition of foreign language skills in schools via the medium of bilingual teaching.

SFIVET - central agency for bilingual teaching

SERI also sees potential in promoting bilingual teaching. At the beginning of May this year it launched a joint project with SFIVET to establish bilingual instruction in vocational and professional education and training and to set up a central bilingual teaching agency. SFIVET also works closely with those universities of teacher education which already offer bilingual programmes.

There are three main aspects to the project:

- a conference (planned for spring 2015) which aims to raise awareness of bilingual teaching, provide information and arouse the interest of players in vocational and professional education and training.
- training of specialists to offer advice to schools, lecture in CAS (Certificate of advanced studies) courses and devise other continuing education and training courses.
- an advice centre for schools and industry course centres looking to introduce bilingual instruction.

Besides the above, SFIVET also plans to offer a range of new CAS continuing education and training courses, in particular German-French and French-German, to complement existing German-English CAS courses. It is also developing further ways of supporting VET schools in introducing bilingual teaching.

Contact
Bettina Bichsel, SERI
Deputy Head, Fundamentals and Policy Section, Education Fundamentals Division
☎️ +41 58 462 93 79
✉️ bettina.bichsel@sbfi.admin.ch

SERI NEWS | VOCATIONAL EDUCATION AND TRAINING
Promoting Swiss vocational and professional education and training internationally

SERI's strategy for international cooperation in VPET

SERI has finalised Switzerland’s International Research and Innovation Strategy drawn up for the Federal Council in 2010 in the area of vocational and professional education and training (VPET). The strategy for international cooperation in VPET has now been published, providing for the first time a coherent frame of reference. SERI will now implement this strategy in conjunction with its VPET partners.

Internationalisation in the labour market and society in general is having a direct effect on VPET: for example, Switzerland increasingly finds itself in a position of needing to respond to international developments in VPET, to benefit from the chances that this presents for Swiss VPET and to minimise any risks. In particular this means strengthening and developing the position of Swiss VPET in the rapidly changing international environment, yet without making any compromises in terms of the quality of the system and its recognised strengths.

At the same time, international developments also mean that there is considerable interest abroad in the Swiss VPET system and its specific strengths. There is a high demand for information and expertise, visits by delegations and partnerships. Switzerland’s strategy for international cooperation in VPET is a means of responding appropriately to this demand. Image: Tomas Wüthrich

In recent years, foreign interest in the Swiss VPET system with its specific strengths has grown. There is a high demand from abroad for information and expertise, visits by delegations and partnerships. Switzerland’s strategy for international cooperation in VPET is a means of responding appropriately to this demand. Image: Tomas Wüthrich

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At the same time, international developments also mean that there is considerable interest abroad in the Swiss VPET system and its specific strengths. There is a high demand for information and expertise, visits by delegations and partnerships. The correct response must be found to this demand, while weighing up the resources required on the one hand and the benefits for the Swiss VPET partners and VPET in general on the other.

Need for a strategic basis
In order for SERI to be able to ensure coherence in its activities and use existing resources efficiently, a strategic framework for carrying out these activities is required. What are the objectives? What is to be done, and by what method? What resources are required and with which national partners and international players are partnerships to be formed? Where should action be taken, and where should it not?

SERI has therefore developed a strategic framework in conjunction with its VPET partners and other federal bodies involved. This is based on the priorities and objectives of the federal strategy on international research and innovation published in 2010. Analyses of the VPET environment, of the opportunities and risks involved and of existing activities and measures also served as a basis.

Four strategic objectives defined
The overriding objective of SERI’s strategy for international cooperation in VPET is to strengthen the position of Swiss VPET in an international context. This has led to the formation of four strategic goals:

1. Increase the international orientation of Swiss VPET and improve the international skills of VPET players
2. Raise Switzerland’s international profile and demand for Swiss expertise in vocational and professional education and training
3. Improve international recognition of Swiss VPET qualifications
4. Maintain international recognition of Swiss VPET as a quality product

These objectives have not been added to SERI’s existing and future priority measures and activities (e.g. introduction of a national qualifications framework for VPET qualifications and continuing cooperation in European education programmes). Instead, new areas of measures were defined, for example improving VPET cooperation with countries which have a similar (i.e. dual-track) vocational education and training system. The exchange of specialist knowledge and experiences should continue to be encouraged and opportunities to represent shared interests in VPET exploited on the international stage.

A range of possible measures for transferring Swiss VPET expertise were defined at various levels of intensity. This makes it possible to respond to requests from countries potentially interested in a partnership. The measures for bilateral expertise transfer range from contacts...
and provision of information on the Swiss VPET system to targeted consulting and services in specific areas (e.g., specialist advice on developing skills-oriented qualifications) and more comprehensive and long-term partnership projects to transfer individual elements of the Swiss VPET system. SERI believes that it is inadvisable to try to transfer the Swiss system 1:1 to a partner country; this is unrealistic and likely to be unsuccessful due to differences in economic and social cultures.

Set of criteria
The players in Swiss VPET have limited resources for international activities and the successful transfer of systemic elements in Swiss VPET to another country depends on many factors. These considerations and the experience gained in the Swiss VET Initiative India (SVETII, see page 9) pilot project supported by SERI has allowed us to define priorities and establish a set of criteria for the bilateral transfer of expertise with partner countries.

For measures which involve the use of considerable resources, the Swiss players must be prepared to share their expertise and the private sector in the partner country must be involved in the cooperation project. In general, the greater the intensity of the transfer measure, the greater the number of criteria to be met. Both in terms of SERI policy and business, Switzerland wants to focus its priorities on Europe, the BRICS countries (Brazil, Russia, India, China and South Africa) and other partner countries.

Coordination among VPET partners is key
SERI cannot successfully implement its strategy for international VPET cooperation single-handedly. This can only be done by cooperating and coordinating with its Swiss VPET partners. Principles of coordination and cooperation measures at national level are therefore of great importance.

Evaluation and Recommendations on ECVET published
As part of a two-year European project, a team Swiss of experts has evaluated the European Credit System for Vocational Education and Training (ECVET), with recommendations on how this can be used by Switzerland. In its statement on the recommendations, SERI stated that the main focus of ECVET-related activities should currently be on spreading information, sharing experiences and supporting independent mobility activities. Priority will be given to introducing and implementing the National Qualifications Framework for Vocational and Professional Education and Training (NQF-CH-VPET).

The European Credit System for Vocational Education and Training is a methodological framework that can be used to record learning outcomes in a credits system. In the project run by the ch Foundation, the team of experts assessed the advantages and disadvantages of this instrument, determined the benefits and challenges it may pose and made concrete recommendations on possible scenarios for Switzerland.

SERI has taken note of the evaluation and will address the recommendations as follows:

- **Action area 1** - Learning outcome units (practical skills) as a structural element in VPET: SERI accepts without reservation the recommendation that there is no need to take action to change statutory law or regulations on education. The use of ECVET should continue to be voluntary in Switzerland and there will be no attempt to introduce a reform to the system of vocational and professional education and training in this respect.
- **Action area 2** – Testing the application of ECVET: ECVET should continue to be tested and used in the context of bottom-up initiatives and projects in VPET in Switzerland.
- **Action area 3** – ECVET and life-long learning: In terms of validation and recognition procedures, SERI’s priority is to raise the profile of existing systems and to encourage their use.
- **Action area 4** – Mobility for learning: SERI believes that the ECVET instrument should be used primarily for encouraging mobility and on a voluntary basis.
- **Action area 5** – Information flow and knowledge transfer: From among the European VPET instruments, SERI currently wishes to give top priority to introducing and implementing the National Qualifications Framework for Vocational and Professional Education and Training (NQF-CH-VPET). ECVET-linked activities will therefore focus on spreading information, sharing experiences and supporting independent mobility activities.

Further information
The final report is published on the ch Foundation website: http://www.ch-go.ch/nc#1-re-conference-nationale-ecvet
SERI’s statement on the expert group’s recommendations can be found on the SERI website:
www.sbfi.admin.ch/evaluation_sui-ind_en
A series of simple, low-threshold and low-resource instruments, systems and processes is designed to help the Swiss VPET partners to coordinate their activities in international VPET cooperation and ensure that a coherent picture is presented to the outside. For example, a single point of entry for queries will make it easier to direct questions to the right partner and for the partners to coordinate how they deal with such queries. Low-threshold information instruments such as presentations on Swiss VPET will be made available to all partners, and there will be a periodic exchange of information and experience at national level. Partners will be discouraged from acting autonomously according to their own strategic guidelines, aims and priorities.

Next steps
The planned coordination measures will be finalised in detail and implemented in conjunction with SERI’s VPET partners and the other federal bodies involved. At the same time, SERI is continuing activities and measures which are already running. In the medium term, looking forward to the next ERI period from 2017 onwards, there is also a need to establish the financial and legal bases which determine the scope of SERI’s activities.

Contact
Laura Antonelli, SERI
Head of International Education Projects
+41 58 465 12 42
laura.antonelli@sbfi.admin.ch

Further Information
Download SERI’s strategy for international cooperation in VPET:
www.sbfi.admin.ch/int-bildzuarb_en

Swiss-Indian VET partnership
Pilot project evaluation published

In 2008, to mark the 60th anniversary of the bilateral friendship agreement between Switzerland and India, the Swiss VET Initiative India (SVETII) was launched, a pilot project which is Switzerland’s first action in bilateral VET cooperation. The aim was to create a win-win situation for the two countries: Swiss businesses in India would increase their competitiveness and Indian trainees would receive vocational training with high labour market relevance. Furthermore, the initiative was intended to raise awareness of Switzerland’s dual-track model of vocational education and training internationally. An evaluation of the pilot project is now available and concludes that its overall results are positive. The visibility of Swiss vocational education and training still needs to be increased in India and cooperation between local public and private partners should be strengthened.

The pilot project was run between 2009 and 2011 on the initiative of representatives of Swiss business, with support from the State Secretariat for Education, Research and Innovation SERI. In all, the Swiss government funded the training of three groups between 2009 and 2013. In 2012 the pilot project was converted into a self-sustaining business model.

The aim of the project was to provide a complement to the existing local VET system. Elements from the Swiss VET system (e.g. methods and working practices) were transferred to India and local people trained according to the dual Swiss VET model, with its high labour market relevance, at the Indian production sites of Swiss companies. The Swiss-Indian company SkillSonics is responsible for implementing the programme locally and working with Indian VET representatives. Swiss VET players such as Swissmem, the association for the mechanical engineering, electrical engineering and metalworking industries, and the Swiss Federal Institute for Vocational Education and Training SFIVET also contributed their expertise.

Initial findings in the pilot project contributed to Switzerland’s international strategy in the field of Education, Research and Innovation, published in 2010. The results of the pilot project were also used in the creation of SERI’s recently published international strategy for cooperation in vocational education and training (see page 7).

Econcept AG was commissioned by SERI to evaluate the project and made the following findings:

- Despite the short duration of the pilot project, the Swiss VET Initiative India showed that it is possible to transfer elements of the Swiss vocational and professional education and training system to a country which does not have a comparable VET tradition. The majority of the objectives set were attained.
- The measures in the pilot project had a positive outcome for both companies and trainees. The companies involved in the project back the initiative and benefit from the SVETII training programme. They state that the skills of the trainees improved considerably.
- The initiative contributes positively to bilateral relations between Switzerland and India. The reputation of Swiss quality and of Switzerland as a reliable...
partner in vocational and professional education and training in India has received a boost.

• However, the initiative and therefore Swiss vocational and professional education and training still have low visibility in India.

If the initiative is to be continued long term, several challenges are faced. It is recommended that attention be paid to ensuring the quality of the trainee programmes and increasing the visibility of Swiss vocational and professional education and training in India, as well as strengthening cooperation between private and public players. Furthermore, it is vital to achieve a critical mass of companies and trainees.

Contact
Claudia Lippuner, SERI
Project manager
International Education Projects
☎ +41 58 463 79 84
✉ claudia.lippuner@sbs.admin.ch

Further information
Details of the pilot project and the assessment report can be found at:
➦ www.sbsi.admin.ch/evaluationen_en
➦ www.sbsi.admin.ch/IBBZ_en

According to the evaluation report on VET cooperation between Switzerland and India, the measures taken during the pilot project were positive for both the businesses and trainees involved. Photo: zVg
As a result of the discontinuation of negotiations on Switzerland’s association to Erasmus+, the Federal Council commissioned the Federal Department of Economic Affairs, Education and Research EAER with drawing up an interim solution for 2014. The latter was approved by the Federal Council in mid-April. The interim solution gives priority to mobility activities and is based on the principle that Switzerland wishes to regain full associate country status.

The interim solution contains the following main aspects:

- Costs will be met by the budget originally earmarked for Switzerland’s programme contributions to the European Commission in 2014 as an associate country in Erasmus+ (CHF 22.7m).
- The solution, in particular with regard to mobility activities, adheres as far as possible to the Erasmus+ requirements applicable for all European countries, with a view to renewing association to the programme.
- The Federal Council sets out a number of priorities, and also states the activities which will not receive funding for the time being. In this it ensures that demand both at national level and among foreign institutions can be met as far as possible.
- Priority is given to outgoing mobility in higher education (CHF 15m) and vocational and professional education and training (CHF 3.8m). Mobility in other areas also receives support: CHF 0.3m for schools, CHF 0.9m for extracurricular youth work and CHF 0.2m for adult education. Reciprocity in mobility activities is also considered, with incoming mobility financed from the funds allocated in each area.
- The portion of the budget dedicated to project activities is considerably smaller than the amount set for full participation in Erasmus+ (CHF 2.5m). Decentralised strategic partnerships are given priority. Switzerland also sets its own criteria regarding the projects to be funded. The Federal Council awards funding only to excellent projects which meet the education policy objectives set by the Confederation and the cantons.

The transitional solution for 2014 puts in place a framework to enable opportunities for learning mobility to be realised. For Swiss programme participants it ensures the greatest possible continuity in terms of a later association to Erasmus+, which remains the Federal Council’s goal.

The transitional solution for 2014 has its limitations and does not provide the full range of opportunities offered by Erasmus+. However, it creates the framework necessary to implement planned learning mobility projects. It ensures that Swiss participants enjoy as much continuity as possible until such time as Switzerland can again become an associate country in Erasmus+, which continues to be the Federal Council’s intention.

The ch Foundation is tasked by SERI to implement the interim solution for 2014 on an administrative level and to conclude agreements with Swiss applicants before they begin their activities. The ch Foundation continues to be responsible for ongoing projects in the ‘Lifelong Learning’ and ‘Youth in Action’ programmes.

**Contact**

Queries regarding submission of applications:

ch Stiftung
☎ +41 32 346 18 18
✉ info@ch-go.ch
🌐 www.ch-go.ch/

Queries regarding federal measures:

SERI, Therese Steffen, Head of Cooperation in Education,
☎ +41 58 462 96 69
✉ therese.steffen@sbfi.admin.ch

SERI, Gaétan Lagger, Deputy Head, International Education Projects,
☎ +41 58 463 26 74
✉ gaetan.lagger@sbfi.admin.ch

Media queries:
SERI, Communication Section,
☎ +41 58 462 96 90
✉ medien@sbfi.admin.ch

Factsheet SBFI:
🌐 www.sbfi.admin.ch/erasmusplus_e
Interview with Blaise Roulet

The creation of the universities of applied sciences is a real success story

With the Federal Act on the Funding and Coordination of the Higher Education Sector (HEdA) due to come into force in 2015, SERI has adapted its structures relating to higher education. From 1 April 2014, its Universities and Universities of Applied Sciences divisions were amalgamated into a single division, Higher Education. Blaise Roulet, who has been involved in the management of the universities of applied sciences (UASs) from the beginning of the 2000s, looks at the institutional background of these ‘practical universities’ which, to his mind, can play an important role in Swiss higher education provided they raise their profile, concentrating on their strengths and their research efforts.

Blaise Roulet, what is your view today of the universities of applied sciences, established in 1997?

The establishment of the UASs in 1997 signified a major reform in Swiss higher education. At the time, it was a particularly innovative challenge to set up a new type of higher education institution in the fields of technology, economics and applied arts and to give them university status. This gave graduates in vocational and professional training new and exciting prospects, and meant that the economy could benefit from well qualified students with a good knowledge of the needs of the market. This reform was greatly appreciated in the circles concerned, especially following Switzerland’s rejection of membership of the European Economic Area.

What were the greatest challenges facing UASs and the federal administration at the time?

At the time, it was not a question of the Federal Council opening a UAS in each of the cantons. The cantons therefore had to agree on an appropriate geographic distribution. In the end it was decided to divide Switzerland into seven UAS regions. Some of these regions are delimited by the borders of a single canton, others encompass several.

It was then necessary to introduce a new culture, better oriented towards the needs of the market. In order to achieve this, the new universities of applied sciences focused on offering excellent teaching, innovative applied research, high quality services for the economy and new continuing education and training opportunities.

What do you see as the milestones in the UASs’ development?

The first phase, from the beginning of the 1990s, was to reassert the value of the technical colleges, business administration colleges and colleges of applied arts and to merge them to form the seven new universities of applied sciences. The new UAS degree was introduced at this time.

The second phase, from 2000 onwards, was to carry out quality control of the different institutions making up the different UASs. The quality of the 220 institutions was analysed in depth by more than 400 national and international experts in two Swiss peer-reviewed studies.

At the end of 2003, in a third stage following this quality control, the seven UASs received definitive operational authorisation from the Federal Council. This was essential for the stability of the system. In 2004 the federal act was partially revised, and the Bologna Directive was applied to the universities of applied sciences, with the introduction of bachelor and master degrees and a system of accreditation. Furthermore, a reform of the Constitution meant that the fields of health, social work and the arts became the responsibility of the Confederation. In 2005 the revised act came into full force.
In a fifth phase, in 2005 and 2008 two private UASs were authorised by the Federal Council.

Since 1997, the number of students at UASs has more than doubled. To what do you attribute the success of the UASs?

The creation of the universities of applied sciences is a real success story. Having obtained a full ‘vocational’ bachelor degree with a focus on the needs of the economy and of society, from the very beginning young graduates were soon able to find jobs.

The wide range of opportunities to study at a UAS and the flexibility of the system is also a major advantage for the younger generation. Furthermore, the status and therefore attractiveness of several subjects has been raised by offering them at universities of applied sciences.

In which areas can the UASs still develop their potential, in your opinion?

The universities of applied sciences must first of all preserve or rather build on their main success factor, which is their focus on practical studies close to the needs of the economy and of society. At the same time they need to work more closely with other higher education institutions and with providers of professional education and training. They should also improve their skills and capacity in applied research and development in the areas in which this is necessary. The UASs must also absolutely develop their competences in an international context.

What place will the UASs hold in the Swiss higher education system in future?

The framework conditions for higher education in this country will in future confer greater autonomy on the higher education institutions and on UASs in particular. There will be less direct control by the Confederation, and so with greater room for manoeuvre, the UASs will be able to carve out a place in this system and position themselves successfully. Just like the other higher education institutions, the UASs need to take advantage of the highly competitive context, in particular in research, and so develop their profile, focusing on practical aspects and the needs of the labour market. At the same time, greater coordination between the institutions in the higher education system will encourage permeability and mobility between them and thereby also help to increase the UAS’s visibility.

What are the main issues facing the UASs in the coming months?

The transition from current higher education legislation to the new Federal Act on the Funding and Coordination of the Higher Education Sector (HEdA) is of major importance, as is the need to develop policies for promoting junior researchers. Consolidating the UASs as training institutions which benefit the economy, society and culture, but also as drivers of innovation, should be the main focus in this process.

The UASs and other higher education institutions are now united in SERI in a single Higher Education Division.

The new Higher Education Division concentrates the capacity and competences in higher education policy within SERI, with the aim of improving coherence and efficiency. Tasks relating to the cantonal universities and universities of applied sciences that were previously dealt with separately are now handled by just one division. Within this division, there are two separate units dealing with the issues and policies of each type of university. This new organisation also ensures that there is better coordination between the UASs and professional education and training. Several joint projects have already borne fruit, such as the Federal Council report on promoting junior researchers, the federal programme for equal opportunities in UASs, and preparation of the HEdA.

Contact
Blaise Roulet, SERI
Delegate of the State Secretary in charge of special missions
☎️ +41 58 463 37 12
✉️ blaise.roulet@sbfi.admin.ch

“...the framework conditions for the higher education system in Switzerland confer greater autonomy on the higher education institutions and on UASs in particular. There will be less direct control by the Confederation, and so with greater room for manoeuvre, the UASs will be able to carve out a place in this system and position themselves successfully,” says Blaise Roulet. Image: University of Applied Sciences of Southern Switzerland SUPSI
Overview of public expenditure on ERI

Funding in 2012: promises were kept!

In recent years the Confederation and the cantons have gradually improved their data on public expenditure on Education Research and Innovation (ERI), thereby increasing transparency. The first annual report now available shows that in 2012 the difference between budgeted expenses and actual expenses was less than 2% of the total amount.

Public expenditure in areas covered by the 2012 ERI Dispatch (in CHF million)

<table>
<thead>
<tr>
<th>ERI Dispatch</th>
<th>Financial statements</th>
<th>EDK study 2011</th>
<th>Financial statements</th>
<th>Total (financial-statements)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confederation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETH Domain</td>
<td>2164.3</td>
<td>2175.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cantonal universities</td>
<td>702.1</td>
<td>700.1</td>
<td>2874</td>
<td>2885.5</td>
</tr>
<tr>
<td>Universities of applied sciences (UASs)</td>
<td>451.1</td>
<td>467.4</td>
<td>1537</td>
<td>1494.1</td>
</tr>
<tr>
<td>VPET</td>
<td>774.1</td>
<td>844.3</td>
<td>2623</td>
<td>2754.5</td>
</tr>
<tr>
<td>Swiss National Science Foundation (SNSF)</td>
<td>842.9</td>
<td>851.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Commission for Technology and Innovation (CTI)</td>
<td>121.5</td>
<td>146.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>European Framework Programmes for research and innovation</td>
<td>466.9</td>
<td>487.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>314.3</td>
<td>298.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total ERI Dispatch/EDK study</td>
<td>5837.2</td>
<td>5971.3</td>
<td>7034</td>
<td>7134.1</td>
</tr>
</tbody>
</table>

| Confederation | | | |
| Non-ERI Dispatch funding | | | |
| ETH Domain rent | - | 301.0 | - | - | 301 |
| Other non-ERI Dispatch funding | | | |
| Confederation: CERN, compulsory ESA contribution, etc. | - | 111.6 | 128.4 | 240 |
| Cantons: tertiary education grants | - | 298.7 | - | - | 298.7 |
| Total funding (ERI Dispatch and other) | 6384.1 | 7262.5 | 13 646.6 |

Proportion of funding

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of funding</td>
<td>47%</td>
</tr>
</tbody>
</table>

Sources in the order they appear in the tables:

a. Federal Council draft 2012 ERI Dispatch; VPET with funds for research and Swiss Federal Office for Professional Education and Technology (SFIVET) rent.

b. 2012 federal financial statements; VPET with funds for research and pour SFIVET rent. ‘Other’ includes funding which is not covered by the ERI Dispatch, for example for CERN or compulsory contributions to ESA for core activities etc.

c. 2012 cantonal budgets according to 2011 EDK study. Figures obtained from the cantonal departments of education. Based on the number of students in 2012, the Federal Statistical Office estimated cantonal grants to students in tertiary education (not including students at universities of teacher education) to be CHF 128.4 million, correcting the figure of CHF 65 million which appears in the 2013-16 ERI Dispatch.

d. 2012 federal financial statements according to 2013 EDK study.
In recent years the Confederation and the cantons have gradually improved their data on public expenditure on Education Research and Innovation (ERI), thereby increasing transparency. The first annual report now available shows that in 2012 the difference between budgeted expenses and actual expenses was less than 2% of the total amount.

The cantons and the Confederation fund education, research and innovation (ERI) either individually or jointly, depending on the funding object. The greater part of federal funding is dealt with in the Dispatch on the Promotion of Education, Research and Innovation (ERI Dispatch).

**Improved methods of comparison**

In 2012, a report was published for the first time giving an overview of budgeted federal and cantonal ERI funding. The report, the first of its kind, was based on a study carried out by the Swiss Conference of Cantonal Ministers of Education (EDK) and on the funding requested from parliament by the Federal Council1. Two years later, it can be ascertained whether the budgeted amounts were in effect spent. The table below lists the funding budgeted in the 2012 ERI Dispatch (columns a and c) and compares them with actual funding as appears in the federal financial statements (columns b and d).

The first part of the table (up to the line ‘total ERI Dispatch/EDK study’) only shows federal and cantonal expenditure in areas mentioned in the 2012 ERI Dispatch. We can see that expenditure rose overall to CHF 13.1 billion, CHF 5.97 billion of which came from federal sources and CHF 7.13 billion from cantonal sources.

A more complete picture of joint ERI funding in 2012 is obtained by adding other federal ERI funding which is not the subject of the ERI Dispatch (e.g. rent for the ETH Domain), as well as cantonal expenditure not mentioned in the EDK study (grants to students in higher education). The second part of the table (total ERI Dispatch and non-ERI Dispatch funding) shows that when this is included, the total for 2012 rises to CHF 13.6 billion, 47% of which was borne by the Confederation and 53% by the cantons.

**Slight differences**

It can be seen that there was overall financial stability, as the financial statements show that the difference between budgeted spending and actual spending was less than 2% of the final figures.

However, there are some major deviations between the budget and the final statements, which can be explained as follows:

- **Confederation**: (a) when debating the 2012 ERI Dispatch, parliament decided to award extra funding (vocational and professional education and training (VPET) + CHF 100 million, UASs + CHF 14 million and CTI + CHF 10 million); (b) measures to counteract the effects of the strong franc and improve competitiveness (CTI + CHF 100 million).

Even though not all ERI funding had been used up by the end of 20122, these decisions by the Federal Assembly were clearly the reason for the difference (an additional CHF 134 m) between the 2012 federal financial statements and 2012 ERI Dispatch.

- **Cantons**: There is a very slight difference of less than 1% between the 2012 cantional budget totals for VPET, the universities and universities of applied sciences (as given in the 2011 EDK study) and those of the 2012 financial statements. This is due mainly to the correction to cantonal expenditure for student university grants.

**Contact**

Müfit Sabo, SBFI
Head of Fundamentals Section, National Research and Innovation Division
+41 58 465 91 51
mufit.sabo@sbfi.admin.ch

**Further information**

The report recently published by the EDK and SERI gives more detailed information on this subject (in German):

www.sbfi.admin.ch/bfibudget_12_de

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1 See ERI Dispatch 2013-2016, page 3121.
2 The federal financial statements explain in detail the reasons for the differences between the 2012 budget and 2012 statements.
SERI and the University of Bern sign agreement on CHEOPS

Switzerland has leading role in first ESA S-class mission

The CHEOPS (CHARacterizing ExOPlanet Satellite) mission is the first S-class (small) mission to be undertaken by the European Space Agency ESA and will be carried out in partnership with Switzerland. The University of Bern was commissioned by SERI, represented by Daniel Neuenschwander, head of the Swiss Space Office, to be responsible for the technical and scientific aspects and coordination of the CHEOPS mission. The Bernese astrophysicist Willy Benz is the Principal Investigator in this programme.

The University of Bern plays a central role in the ESA’s CHEOPS mission, as it is responsible for the technical development of the scientific instruments used in CHEOPS, developing the scientific ground segment and evaluating the results along with the University of Geneva. The University of Bern will also coordinate the activities of the CHEOPS consortium, which comprises partners from various European countries. This is all set out in an agreement between SERI and the University of Bern signed on 1 April of this year, establishing the responsibilities of each Swiss partner.

Based on the multilateral agreement between the ESA and the CHEOPS mission partner states, the project team leader, Professor Willy Benz, was officially appointed Principal Investigator for CHEOPS. Professor Benz, who is an astrophysicist at the University of Bern’s Centre for Space and Habitability (CSH), is thereby in charge of conducting and managing the mission, and for evaluating the scientific results.

The ESA also plays a major role in CHEOPS, as system architect of the satellite, coordinator of activities with industry and responsible for the interfaces with the launch vehicle. These activities are financed by the ESA science programme. Following an 18-month definition phase, in February 2014 the go-ahead was given to begin the development and construction phase of CHEOPS. The satellite is due to be launched at the end of 2017.

Contact
Daniel Neuenschwander, SERI
Head of the Swiss Space Office
📞 +41 58 463 17 93
✉️ daniel.neuenschwander@sbfi.admin.ch

Further Information:
🔗 cheops.unibe.ch

Investigating 700 bright stars

CHEOPS is an S-class satellite weighing about 250 kilograms and carrying a one-and-a-half-metre long telescope of 30 cm diameter developed by the University of Bern’s Centre for Space and Habitability in conjunction with international partners and Swiss industry. The S-class satellite, due to be launched in 2017, will be transported by a launch vehicle in an orbit of approximately 800 km altitude, where for over three and a half years it will observe about 700 bright stars orbited by exoplanets. This will involve the transit method: the observed exoplanets orbit their star in such a way that, seen from the Earth (and from CHEOPS), they continuously move in front of and behind the star. As a result, the star appears sometimes more, sometimes less bright, and this allows CHEOPS to determine the nature of the exoplanet’s surface and also its radius. Along with measurements of the exoplanet’s mass, which can be taken from the ground, this data allows scientists to determine its density, which in turn tells us something about the material of which the exoplanet consists. This is an important criterion for speculating about the possible existence of life on the planet; this possibility would give cause for further observations by larger space observatories.

FIGURE OF THE MONTH

According to the ad hoc index established by Bisnode, a company for business information, and the Institut für Jungunternehmen (IFJ), a start-up support agency, 10,568 new companies were entered in the Swiss Commercial Register in the first quarter of 2014, 469 more than in the same period of the previous year.

Prof. Willy Benz (links), Head of Space Research & Planetary Sciences at the University of Bern, and Daniel Neuenschwander, Head of the Swiss Space Office at SERI, sign an agreement on the CHEOPS small space mission. Image: Copyright University of Bern, Photo Manu Friederich