TRIAL

Vocational-pedagogic adult education

(Berufspädagogische Weiterbildung)

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1: Introduction to Case

In Germany a wide and controversial debate on a possible general lack of skilled workforce in engineering disciplines (cp. wiwo 2014) arose in the last years; but there is broad evidence that this lack already exists in chosen fields, beside others aren't there enough VET-teachers in technical domains (cp. handwerk 2013).

Another recent trend is the opening of German universities for non-traditional students (cp. oh_Bremen 2009) in the last decade; especially for applicants with a Continuous Vocational Education and Training (CVET) degree (master craftsmen (Meister), technicians). Open universities are not very successful in terms of numbers of students without traditional university entrance degrees (2% of all new students in 2010, (Che 2012)); due to a bundle of reasons: Time schedules, financing, academic snobbishness, academic teaching and learning etc.

Referring to these two trends Institute for Technology and Education (ITB) from Bremen University together with CVET adult education provider "Handwerk Bremen" (run by the chamber of handicraft) and supported (or at least tolerated) by the employers of the students started in 2012 the 3 years open study programme "TRIAL". Successful students receive a double qualification, a Bologna bachelor degree in engineering and a CVET-certificate as a vocational pedagogue, both on EQF-level 6. Programme combines and recognises the learning outcomes of three learning venues: university, CVET-courses and workplace. When successfully finalising this programme two career pathways are foreseen: Students could either work as a skilled trainer in a company or start a master programme to become a VET-teacher. Programme analysed is designed for around 30 students each year; offering many lessons outside regular work hours.

At the university the non-traditional students visit the same seminars as "normal" students; as both sub-groups are aiming at acquiring the same qualification. Seminars of university and of CVET-provider are synchronised in terms of time and content, employers try to support the programme by being flexible with the working times and offering project work that might be used for term papers.

2: Collaboration or partnership

Programme started with a feasible study in 2010 in four German regions (Bremen/Oldenburg, Trier, Rostock, Schwäbisch Gmünd). One of the main outcomes -beside the need for such programmes- was that for a smooth implementation a "conceptual, didactic and organisational integration of the three learning venues (University, CVET-provider, and company) is necessary". For this purpose a binding co-operation declaration

between university and CVET-provider was signed. As students participating work for different companies, comparable declarations with companies are not foreseen; co-operation works rather informal via motivating companies to be flexible with working times or helping to find work-processes that might be creditable within the programme.

Previous work-based learning or work experience is creditable with up to 60 ECTS points (one year of regular studies); modules, which foresee project or practical work, might be processed in the company.

In general education and training are playing an important role in German companies due to the dual VET-system; especially large companies run own training departments (for apprentices). Consequently the engagement or commitment of companies related to the issue of lifelong learning (LLL) is rather high, although there is only poor experience in co-operating with universities, usually companies co-operate with VET-schools or CVET-providers only.

3: The case study programme, based on interview matrix

3.1. Interviewees:

For this case study 4 persons were interviewed, all of them male.

- The project coordinator, aged 62 years, working at the university full-time for the programme with a PhD in sociology. As a side job he is a teacher in an adult education centre, but his main involvement is research in the field of vocational education.

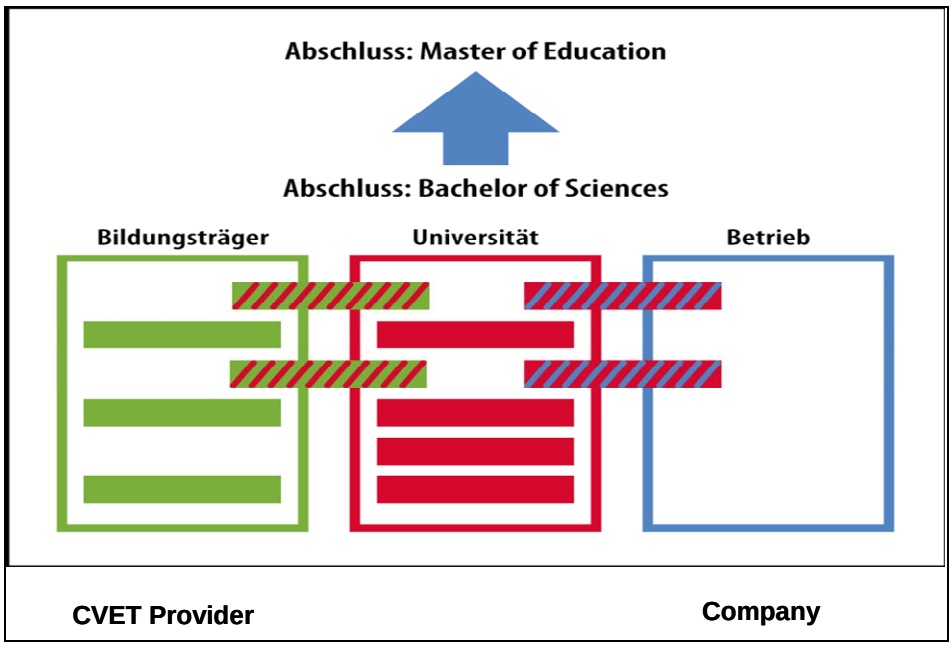
- A pedagogical colleague from CVET-provider, aged 43 years, teaching pneumatics, additionally responsible for projects run by the provider and development of curricula; within the TRIAL-programme he's in charge of marketing, mentoring and recognising of former LO, spending 10% of his working-time for the project. He started his career with an apprenticeship as an industrial tool mechanical, followed by a master craftsman (Meister) and studied sociology afterwards; awarded with a Diploma.

- Two students, both stable employed full-time, aged 31 resp. 47 and part of the "first generation students", starting in 10/2012. Both without "Abitur" (general university entrance diploma), leaving general school after 9 resp. 10 years. Starting their working life with an apprenticeship (fitter resp. industry mechanic), after some years of work experience (minimum: 5 years) they awarded the CVET "state certified technician"-qualification, one of them full-time (2 years) the

other one extra-occupational. One of them works in special purpose machinery manufacturing, the other one as a technician at the university.

3.2. Decision making process

After the positive resonance of feasible study the main challenge was to assure funding of the programme, as additional tasks -compared to traditional study programmes- arose; esp. promoting of programme to new target group, advising of students, organising new curricula and scheduling, and evaluation of programme. A proposal was successfully submitted to the German ministry (BMBF) and programme was funded from 03.12 till 02.15; a prolongation of another year till 02.16 was negotiated by the end of 2014. Stakeholders from university and CVET-provider jointly developed the curriculum; general structure of programme is sketched in Picture 1: The tripartite model. It was accredited by the competent body as a full, Bologna-compatible bachelor programme; the additional CVET-degree “VET-pedagogue” was already accredited by the regional chamber. Lecturing staffs are a mix of university and non-university staff. University lecturers are selected exclusively by the university. Non-university lecturers at CVET-provider are in-house professionals.



Picture 1: The tripartite model

Programme combines 5 core areas: Vocational- and workplace-pedagogies, vocational sciences of vocational discipline, core modules of vocational discipline, engineering basics, and engineering within the vocational discipline.

Students interviewed told us that the main driving factors to enter the programme were own motivation, acquiring a HE degree, linked with the perspective of a better (paid) job. They have chosen this programme because it is the only one of this kind in Bremen,

designed for master craftsmen (Meister) and technicians from the sectors of metalworking and electricity with recognition of work-related LO, due to the prestige of the provider and the relationship to current employment.

3.3. General programme information

A regular bachelor programme (180 CP), with the option of combining it with a CVET-degree. Lessons with redesigned curriculum started in winter 2012/13 with 30 students, 19 of them "traditional" the other 11 without university entrance diploma but with a CVET degree. It combines 3 learning venues; university, company and CVET-provider (optional). LO from the other 2 learning venues are (partially) accredited by university; prior LO from working or CVET experiences might be accredited with up to 60 CP, partially (22 for a technician) by general (blank) recognition, the rest by an individual portfolio, but no candidate reached full 60 CP. Beneficiaries have to apply as ordinarily students, too; as always in Germany the first undergraduate degree is free of charge; additionally the standard fees of CVET-provider (~5000€) are covered for students in the pilot phase by the programme. Regarding schedules of lessons a mixed model was established: Whilst "regular" engineering lectures are during daytime, seminars and didactic lessons are in the evening or as bloc-seminars on the weekend. Successful students award a bachelor of science, including the option of studying a master of education programme (2 years fulltime) afterwards.

Target group are vocationally qualified students, who are working full- or half-time from sectors of metalworking and electricians, who haven't a university entrance diploma. Generally programme would be suited for jobless technicians, too; but German welfare regime states that jobless people must by job-seeking full-time and that they are not allowed to study - if so, they lose their right for dole.

Programme is accompanied by an independent advisory board with stakeholders from all relevant institutions (other universities, ministry, employers, CVET-providers, trade unions). Advisory board meets each year to guide and support programme, and to increase visibility via public announcement.

3.4. Programme evaluation

University of Bremen generally supports policies of lifelong learning (LLL) issued by competent bodies; besides other approaches by supporting developing programmes for VET-qualified students (Open University). In TRIAL-programme special emphasis is given to guidance for students, starting with a pre-study, consultancy of potential students, individual recognition of prior learning outcomes, and a formative assessment of programmes' performance during the first 3 years. The main demands programme is responding to are up-skilling of competencies, improvement of labour market opportunities,

personal development and development of new (academic) skills. To assure involvement of all relevant stakeholders, an advisory board was founded, with delegates from ministry, social partners, university, CVET-providers etc. to guide advancement of programme.

Mean age of the target group is around 40, most of students (~80%) are male and all of them are employed. To match the programme to the learning needs of the target group schedule of lessons was adapted to their needs (mainly: evening/weekend), special bridging lessons (math, mechanics) were offered and additional lectures were hired; but most (around 20) of lecturers are normal university staff.

Besides recognition of prior learning some of the lessons of programme allow integration of working life of students, projects might be performed in company and bachelor theses can be written on topics of company, for example on improving apprenticeship schemes. Although a standard way through the lessons is foreseen, students are free to develop their individual learning paths, for example to concentrate a whole semester on challenging topics like mathematics. The standard length of bachelor programmes (3 years) is quite ambitious for working students, no punishments are foreseen if students need longer; the only constrain are fees that all long-term students have to pay (500€ each semester if standard duration+ 2 years is overspent).

Programme is evaluated twice, on one hand by the standard procedures used for all lectures (written feedback by students on the lecture at the end of course), on other hand by an additional formative evaluation process, consisting of more detailed questionnaires, and individual and group interviews.

Students interviewed for this case study were seriously challenged by family obligations and schedules; they developed their own evaluation scheme: First semester was seen as a personal feasible study; whether programme and university teaching and learning fit for them or not. Both decided 'yes' and identified mathematics as the hardest topic for them; so they reserved the whole 3rd semester for mathematics, again with the option to leave if they fail - but both succeeded.

> *„Mathematics-obstacle is very high; it costs time, nerves, courage, and energy for studying other topics."*
>
> *(„Die Mathematik-Hürde ist sehr hoch, es raubt Zeit, Nerven, Mut und Kraft für das Studieren der anderen Fächer.")*

Quality of lessons is seen differentiated: Students have the impression, that some of lecturers, esp. the pedagogic ones, really try to meet their needs in terms of scheduling, topics (close to working live), and teaching methods - whilst others, esp. from engineering faculty, suggest that they are not interested to teach VET-qualified students. In general

learning programme was as expected, partly even better, e.g. the cooperation with traditional students or the rather low attendance requirements.

Due to the innovative approach of offering a common programme for traditionally and VET-qualified students a row of specific challenges occurred:

- Different interests in scheduling: Traditional students prefer lessons from Monday to Friday between 08:00 and 18:00, whilst VET-qualified & working students usually cannot reach the university before 17:00 and are willing to offer their weekends.

- Different learning attitudes: VET-qualified students are challenged by ambiguous tasks without perfect solutions and their concept of learning is often rather directed by others, if they don't receive straight orders they are unsure on how to proceed.

- Self-dependence regarding learning, presenting in front of a broader audience and the ability to write scientifically must be developed during the programme.

  „Problem is; that rethinking to universities' learning- and working methods is approachable only under pain. The amount of private obstacles that must be overcome. I heard from other students too, that families are revolting; that families don't understand why students would do that to themselves at the age of 40."

  („Das Problem ist, dass ein Umdenken auf den universitären Lern- und Arbeitsmodus nur unter Schmerzen möglich ist. Was man für private Hindernisse überschreiten muss. Ich habe es auch von anderen Kommilitonen gehört, wo die Familie schon rebelliert, weil die das nicht nachvollziehen kann, dass man sich das mit 40 noch einmal antut.")

- Challenging topics: Some topics, especially mathematics, are built on learning outcomes of upper secondary school. If students never heart anything on those topics before, comprehensive additional teaching is needed.

3.5. Impact

As no student has already finished programme is it too early to judge evidence-based on the impact. Preliminary impressions reveal that the amount of drop-outs of vocationally qualified students is lower than the ratio of traditionally qualified students, in summer 2014 (after 2 years of programme) 7 (from 11) VET-students were still matriculated, whilst the amount of traditional students decreased from 19 to 7.

Programme can be considered as a success story from the learners' resp. companies' perspective; students reported from work-tasks with higher responsibility, a more confident work-attitude, application of methods learnt at the university and the expectation of higher wages when finalising the programme.

From universities' perspective programme is successful in a narrow meaning, in terms of increasing the amount of students in ITB's bachelor programme. But from a wider perspective, the shortage of VET-teachers in technical subjects in the region; it is not very successful; only few of the VET-qualified students are planning to continue with the -for VET-teachers mandatory- master programme. This is caused by a bundle of reasons; main factors are:

- Relative satisfaction with the actual company; no aspiration to change employer.
- Master-programme is not offered parallel to work; all lessons are on Mondays to Fridays from 8:00 to 18:00.
- Workload in the 3 years of the bachelor programme (parallel to work) was this high, that additional 2 years would be too challenging.

From a very wide perspective another risk occurs; due to the principle of subsidiarity between the German regions (Länder) every region is free to accept teachers, who went to university in another region, or not. Till now this risk was of relevance only for teachers in general schools; in Germany each teacher has to study two topics (e.g. physics and politics); and some combinations of these topics are accepted only in some of the regions.

Regarding TVET-teachers, two traditions of referencing to scientific topics exist in Germany:

- Most universities in south Germany refer mainly to the corresponding engineering discipline (e.g. mechanical engineering).
- North-German universities refer mainly to the corresponding vocational sciences (e.g. group of metal vocations).

If curricula of north-German universities are adapted more and more to the needs and potentials of vocationally qualified students (e.g. by lowering the standards of mathematics or mechanics), the risk that degrees are not accepted by VET-schools in south Germany is increasing.

4: Case summary

At a glimpse, main strengths, weaknesses, opportunities, and threats can by summarised as following:

Strength and opportunities:

- Study programme alongside the job
- Practice oriented and work process related studies
- Modularised curricula with certification of modules
- Flexible options for entry and exit

Weaknesses and threats:

- Timeframe 3 years (as for ordinary bachelor programmes): often *NOT* realistic
- Recognition and accreditation of vocational learning outcomes often less than expected
- Some lecturers are not willing to respect the need of evening sessions
- Some lessons are too hard (mathematics)

Interviewees saw the following potentials or needs for further development of programme:

- (Better) integration of vocational qualified students from the automotive sector
- Better permeability from HE to VET, in terms of recognising LO from university for IVET resp. CVET programmes, mainly focussing on traditional students who drop out from university
- Co-operation of traditional and non-traditional students should be increased by organisational measures
- CVET-degree 'vocational pedagogue' should be recognised as a trainer (in-company) certificate (this certificate is mandatory for in-company trainers & part of 'master craftsmen (Meister)'-CVET-programmes)
- Lessons in mathematics that refer to the needs and potentials of students in a VET-teacher programme.

Most crucial aspects for implementing such a programme in other institutions resp. countries are funding and scheduling; programme needs financial support by third parties at least for the phase of developing and implementing it; additionally must be taken into account that not all employers are able or willing to offer flexible working schedules.

Type	Payment	Award	Entry requirements
1	Free	Qualification	open
2	Free	Qualification	traditional
3	Free	Certificate	open
4	Free	Certificate	traditional
5	extra fees	Qualification	open
6	extra fees	Qualification	traditional
7	extra fees	Certificate	open
8	extra fees	Certificate	traditional

Tab. 1: Typology of LETAE-cases

Referring to Tab. 1: Typology of LETAE-cases the programme TRIAL is ***type 1***; no additional fees for students or companies have to be paid, the awarded degree is a Bologna-compatible Bachelor-degree and it is open for non-traditional (VET-qualified) students.

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