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## Polytechnical schools and how they function as a bridge to apprenticeship training

In April 2002, the *ibw* was asked by the Federal Ministry of Education, Science, and Art to evaluate in detail the polytechnic schools (PTS), which saw themselves reformed in the 1990s. In the school year of 2002/2003, both students of vocational schools (and apprentices) and companies were thus polled on their views on the effects of the aforementioned PTS reform (polling of those entitled to teach). The results have been made available in two volumes of the *ibw* series “Education and Economy” under the heading “effects of prior education of polytechnic schools with a view to leading their graduates to an apprenticeship”. One volume deals with polling companies that train apprentices<sup>1</sup>, and the other one focuses on the students of vocational schools<sup>2</sup> that were interviewed.

The introduction of an additional, ninth year of compulsory schooling in 1962 demanded establishing a school that would serve as a “bridge” between lower secondary school and apprenticeship training. Ever since, it has been subject to various reforms<sup>3</sup>. Due to there being various possibilities to do the ninth year of schooling in other school types, it was especially problematic to position the polytechnic course (pre-vocational year) and the polytechnic school (as it is called now). Today, approximately 21 per cent of all ninth grade students attend a polytechnic school.

According to the polling of students who attend vocational schools which was carried out by the *ibw*, roughly 50 per cent of all apprenticeship starters in the three technical and commercial apprenticeship trades chosen went to a PTS. Among office executives, the percentage is roughly 30%<sup>4</sup>. Despite the existence of rather different routes leading to apprenticeship training, the pre-vocational year at polytechnic schools is the most commonly chosen one in comparison to secondary technical vocational schools and colleges, as well as other ways.

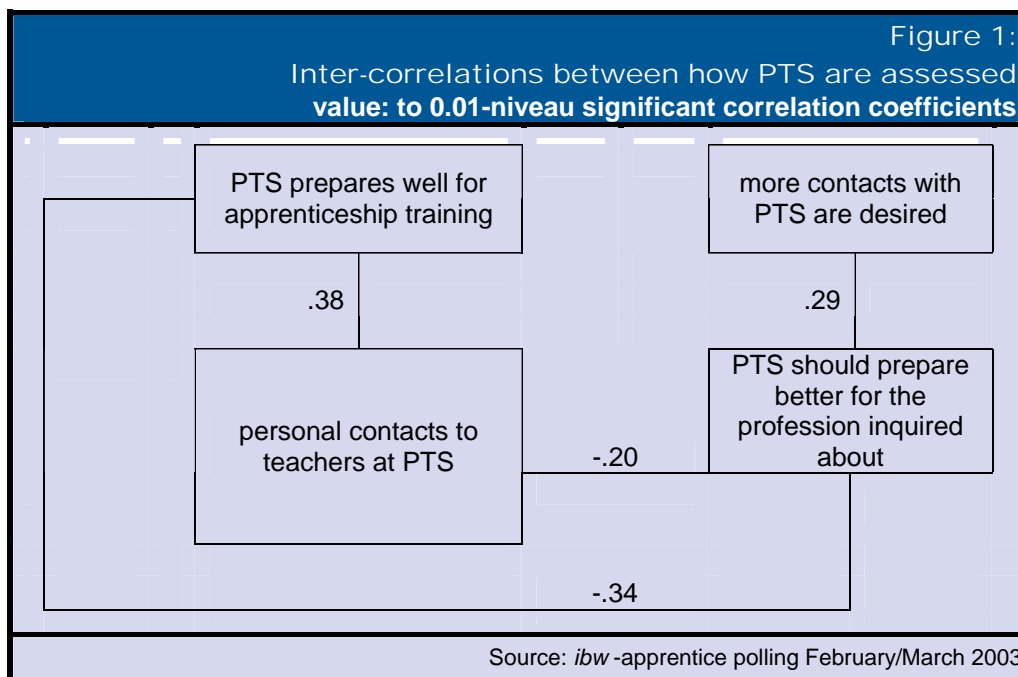
The abovementioned opinion poll among students of vocational school in the year 2002(03) was carried out all across Austria. The roughly 4,000 questionnaires that could be analysed make up 60 per cent of the total that can be reconstructed in school statistics. Almost 80 per

cent of the office executives were girls, whereas 98 per cent of all electricians and metalworkers were boys, and likewise were 96 of all carpenters.

The written polling of the companies that train apprentices, which was carried out in February and March 2003, asked for how they assess and what they know about polytechnic schools. A total of over 562 companies that engage in apprenticeship training (22 per cent of all those polled) from four large trade fields (office executive, electrician, metalworker and carpentry) responded. The investigation clearly shows that the higher the contacts between schools and training companies are in quality, the more can the aim to train well-prepared apprentices in the region be optimised.

### *Two thirds of all companies assess PTS positively*

Nearly two thirds of all training companies consider the performance of PTS as a provider of prior education as being positive. Just a little less than one third have their doubts. The further analysis is of big importance: it shows that those 42 per cent of the training companies polled which keep in touch with the PTS in their vicinity believe its performance in prior training to be far better than those that do not have contact or just very rarely (see figure 1).



Almost 30 per cent of all respondents “clearly” thought that PTS should and could prepare for the respective jobs in an even better way. Another 48 per cent thought this was “rather true”. An analysis of correlations shows that the more convinced people are of the fact that there is still room for improvement in PTS, the more companies ask for more contact to the teaching staff at PTS. Answers to an open question as to how the apprentices’ prior education could be improved express the wish for more cooperation between the companies and the PTS. The companies show interest in contributing to the curriculum; and they would welcome the consequent orientation of PTS towards everyday reality in the companies. Just around half of the training companies that took part would like there to be more contact with PTS. Here, one finds a starting point to alter the relations between the PTS and the companies that engage in apprenticeship training.

The positive assessment of the prior education PTS offer by those companies that regularly keep in touch with the former can be put down to a number of reasons: these people either have more school-specific information available, or these instructors can add their knowledge and their wishes to the training in PTS via personal contacts- and are thus more satisfied with the results. Still, it could well be that those who keep personal contact with the school are able to pick the apprentices who are highly motivated.

As regards metalworkers, the companies assess most often the prior education in the PTS very positively; also, the highest number of companies that are in touch with the teaching staff of PTS can be found among the metalworker trade. The opposite holds true for office

executives. The results for office executives partly differ greatly from the technical–commercial trades. Here, merely 26 per cent of all staff responsible for training say there exists personal contact with the PTS; metalworkers are in the lead with 53 per cent. The instructors of future office executives not only have less personal contact with the PTS, but they also express the wish to brush up relations with the PTS less often.

If we break down the results by province, a precise and subtle assessment of the PTS is possible. In terms of how frequently interviewees agreed with the statement that “PTS prepare well for apprenticeship training”, Vorarlberg, Salzburg, and Upper Austria are clearly above the average of 64 per cent. Tyrol and Lower Austria are pretty much around the average, and Styria, Carinthia, and the Burgenland are slightly below. Only in Vienna, training companies assess PTS strikingly less positively.

The interviewees in Vienna less frequently have personal contact with the teaching staff at PTS and merely one in five expresses the wish to intensify communication. This unsatisfactory state of communication between PTS teachers and companies that engage in apprenticeship training, does not come as a surprise for us researchers. The following results are in accordance with those gained from polling PTS teachers.<sup>5</sup>

The wish for more contact with the PTS is strongest in Tyrol (69 per cent), while in Vienna, the Burgenland, and Carinthia, the opposite is the case. This could be related to the relatively low percentage of PTS students in these provinces. While 25 per cent of all ninth grade students in Tyrol, Vorarlberg, and Upper Austria attended a PTS in

2001/2002, only 13 per cent did so in Carinthia, 15 in Vienna, and just under 16 per cent went to a PTS in the Burgenland (with an average of 21 per cent).<sup>6</sup>

Some of the detail questions were aimed at how the respective specialised subjects prepare for the apprenticeship. Unfortunately, however, only few answered this question. Lack of information regarding the reformation of the PTS may well play a role here: nearly 60 per cent of the people polled who keep in close touch with the PTS assessed the specialised subjects, too, whereas only 29 per cent of those who do not have contact with the PTS did so.

If one compares typical answering patterns of training companies as well as the attitudes of career starters on the basis of polling vocational students (which was carried out at the same time as the opinion poll among the companies), one finds that this is mainly a problem of information. Among the companies, the percentages of subject specific feedback vary between 14 and 57 per cent. Contrastingly, the polling of vocational students showed that career entries adequate to the specialised field only vary between 70 and 80 per cent among the 1,500 interviewees of the opinion poll among students. All in all, 76 per cent of the former PTS students that were polled in a PTS said their specialised subject did correspond with the technical-commercial apprenticeship trade they had chosen.

The training companies that answered the questions on preparation in the specialised fields did so very positively. *Nearly 90 per cent of the training companies which gave feedback agreed to the claim that prior education in the specialised fields at the PTS facilitated the start of the apprentices.* Moreover, 70 per cent agreed that the youths have a better basic specialist understanding, and 60 per cent said their specialised prior education makes them more versatile. Both facts can be seen as recognition of the prior education provided by PTS. Looking at it on a provincial level, one undoubtedly sees some variation in the positive assessment of prior education in specific fields; yet, even in the provinces that show relatively low recognition levels, the majority of people assess it clearly positively. In all provinces, for instance, the claim that “training in the field of specialisation simplifies the apprentices’ start” was supported by more than 70 per cent of all those answering.

A total of 37 per cent of all people polled also answered the questions concerning the fields of specialisation. The *specific answering percentage* displays a quite different picture, which is still all but surprising: office executives: 35 per cent; electricians: 45 per cent; metal workers: 62 per cent, and carpenters: 68 per cent. Except for electricians, technical-commercial apprenticeship trades are above the average as regards positive assessment of the apprentices’ specialised preparation.

chart 1:

Percentage of feedback to the questions concerning the PTS fields of specialisation by the training companies in comparison with how vocational students assess apprenticeship starters’ career entries as related to fields of specialisation, according to the provinces, 2003

Province	participants in the opinion poll among training companies	among these: participants that answered the questions concerning the PTS:		polling of vocational students: <u>career entry related to fields of specialisation</u> by PTS graduates in technical-commercial apprenticeship trades
Salzburg	47	27	57 %	79 % (n= 146)
Lower Austria	106	48	45 %	80 % (n= 285)
Vorarlberg	38	17	45 %	76 % (n= 114)
Upper Austria	111	41	37 %	72 % (n= 238)
Tyrol	57	20	35 %	77 % (n= 199)
Styria	95	32	34 %	80 % (n= 251)
Burgenland	24	8	33 %	66 % (n= 83)
Carinthia	48	12	25 %	70 % (n= 97)
Vienna	36	5	14 %	74 % (n= 133)
in total	562	210	37 %	76 % (n=1.546)

Source: opinion poll among training companies and vocational students.

## *75 per cent enter their apprenticeship well prepared in terms of their field of specialisation*

To evaluate the subject-specific preparation for the apprenticeship, we can resort to the polling of vocational students which was also a part of the project and carried out alongside with the polling of companies that engage in apprenticeship training. The hierarchy of the apprenticeship entry percentages according to the field of specialisation in the PTS and apprenticeship trades, correspond to the answering percentages gained from polling the training companies. According to the youths, 68 per cent of all *office executive* apprentices have gone through subject-specific preparation in their PTS. As regards technical-commercial apprenticeship trades, these figures are even higher: *electricians* 73 per cent, *metal workers* 78 per cent, and *carpenters* 80 per cent. On average, the polling of students resulted in 75 per cent seeing it subject-specific<sup>7</sup>.

The results gained from the opinion poll among vocational students confirms the polling among headteachers and teachers at 250 polytechnical schools all across Austria, which dealt with how their students succeed in finding an apprenticeship at the end of the school year of 1999/2000. 72 per cent of all PTS students already had their apprenticeship, and a further

11 per cent could count on one. 7 per cent decided to attend a follow-up school.

What is of big importance for the question concerning the subject-specific preparation, is the result that –according to the schools- most of the youths who do apprenticeship training manage to enter well-known apprenticeship trades (86 per cent).<sup>8</sup> One can thus assume a subject-specific transition percentage of between 60 and 70% at the end of a school year.

To allow for further development of polytechnical schools as bridges between the schools and the companies that engage in apprenticeship training, it is vital that these two stay in touch. Both sides clearly draw profit from this: on the one hand, the schools receive both feedback and subject-specific stimuli; on the other hand, the training companies are supplied with well-prepared youths.

*This research brief is based on the recently published study „effects of prior education of polytechnical schools with a view to leading their graduates into apprenticeship training“, which is part of the ibw-series “Education and Economy”.*

[Education and Economy No. 25: “results of an opinion poll among training companies”](#)

[Education and Economy No. 26:” results of polling vocational students: school type-specific analyses and comparisons.”](#)

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<sup>1</sup> Arthur Schneeberger, Bernd Kastenhuber, Alexander Petanovitsch: results of the polling of companies that train apprentices. Vienna, July 2003.

<sup>2</sup> Christine Stampfl: results of the interviews with students of vocational schools: school type-specific analyses and comparisons. Part of the *ibw* study “effects of prior education of PTS”. Vienna, July 2003.

<sup>3</sup> Peter Jäger: origin and development of polytechnical schools. BMBWK [Federal Ministry of Education, Science, and Art] (editor). Vienna, April 2001, page 12.

<sup>4</sup> Christine Stampfl, Wolf-Erich Eckstein: results of polling pre-vocational students. A volume of tables. Results according to trade and provinces. Vienna, July 2003.

<sup>5</sup> Günther Grogger. Evaluating the new polytechnical school. Results of a nationwide opinion poll among headteachers, teachers, and students, as well as results of panel discussions at selected PTS. Graz, September 2002, ZSE-report, p.50.

<sup>6</sup> Austria statistics: schools in Austria 2001/2002. Vienna, 2002, pp. 189ff.

<sup>7</sup> Stampfl, as above, p.13.

<sup>8</sup> Härtel, Peter, and Kämmerer, Erwin: job transition at PTS. Careers of graduates after the polytechnical school. Research report of the Federal Ministry of Education, Science, and Art. Vienna, Graz, 2001, p.12.

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