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Continuing Education and Education Vouchers

Results of a field experiment



**Summary and individual aspects
of the study's findings**

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Bern, February 2009

The project was conducted by the Centre for Research in Economics of Education at the University of Bern and commissioned by the Federal Office for Professional Education and Technology (OPET). The experiment was carried out in conjunction with the Federal Statistical Office (FSO).

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Summary

Participation in continuing education in Switzerland varies greatly depending on the group of people concerned. It is assumed, particularly with regard to people with a low level of basic education, that a higher rate of continuing education would generate individual as well as economic and social benefits. It is also assumed that it is primarily financial factors that prevent non educationally active people from participating in continuing education. However, there has been insufficient empirical evidence of this to date.

For that reason, the Centre for Research in Economics of Education at the University of Bern, on behalf of the Federal Office for Professional Education and Technology (OPET), conducted a large-scale field experiment in 2006. Education vouchers were distributed to a sample of 2,400 randomly chosen individuals who were free to use them for the purposes of continuing education. Their behavior was compared with that of roughly 10,000 people who did not receive such vouchers.

The results of the experiment with education vouchers described here show that the level of participation of groups who do not usually undertake continuing education can indeed be improved by means of financial support. Education vouchers can therefore certainly be considered as the right incentive tool to increase participation in continuing education.

However, there are also factors against a blanket introduction of vouchers. Firstly, it was possible to observe a certain 'deadweight loss effect' in all those with post-compulsory education¹, which meant that in people from this group, on average only one in three cases actually resulted in continuing education occurring that would not otherwise have taken place. Secondly, it was not possible to observe any positive labour market effects – at least in the short term – in those people who used the vouchers for continuing education, which for the time being would speak against strong public involvement in the funding of continuing education.

The experiment would therefore indicate that, if at all, public financing would only be justified for a strictly defined target group.

¹ Qualifications at least at upper secondary level (vocational education and training, baccalaureate) or higher.

Why state funding for continuing education?

In Switzerland, continuing education is primarily organised and paid for privately; even though an ever larger portion of the education market is covered by public sector providers (universities of applied sciences and universities). The advantages of this education, organised according to market economy criteria, are that it is tailored to the needs of the labour market and is flexible in terms of the available offerings. There are also disadvantages, however, particularly with regard to access to education (see Wolter 2001). Not all citizens can afford to pursue continuing education or have an employer willing to cover the costs. It could also be that there is no functioning credit market for investment in continuing education. Those interested in taking courses are therefore not able to obtain an advance to make up for their lack of financial resources.

This inequitable access to continuing education could potentially present social and economic disadvantages:

- Society has to forego revenues (for example in the form of higher tax revenue) that would have been generated if all individuals were able to maximise their productive potential.
- Society could face higher costs because less well-educated people are more likely to claim social transfers such as unemployment benefit. These costs could be prevented through adequate continuing education.²

State promotion of, or participation in, investment in continuing education could, from an economic perspective, therefore be thoroughly justified. However, various requirements would have to be met in order for such state involvement to actually be effective and efficient.

Conditions for state involvement

Generation of economic benefits

The continuing education activities supported by the government must genuinely produce an economic benefit. Only then is the social cost balanced out by an equivalent return. State financing of continuing education activities would be difficult to justify if merely an individual return in the form of satisfaction, self-fulfilment or some other were generated (as worthy as such effects may be). Similarly it would have to be assured that state resources would only be used for effective activities, in other words, which meet the needs of the labour market in terms of content and quality.

No substitution for private investment

It must be assured that state investment is not simply a substitute for private efforts. Supporting continuing education, which would otherwise be paid for by individuals themselves or by their employers would not generate any real social benefit. In such cases it is possible to refer to a 'deadweight loss effect', whereby state resources disappear to no real effect.

Correlation between financial support and participation in continuing education

Lastly, it must also be assured that a lack of participation in continuing education is due to a lack of financial means. The fact that certain groups of people are more likely to participate in continuing education than others is not proof enough to deduce that the cost of continuing education is the reason. Consequently it is not clear whether this imbalance in participation could be corrected through state financing. In that case, the state would have to consider other ways of encouraging participation in continuing education (e.g. better information on available courses etc), which would have a greater impact on the target group than financial support.

² Unemployment insurance contributes hundreds of millions of francs towards retraining and continuing education measures in Switzerland every year. These costs could, under certain circumstances, be avoided if the people concerned had actively participated in continuing training earlier in their working lives.

Only when all three conditions have been met cumulatively should state financing or subsidisation be considered. However, this still leaves the question of which channels and instruments the state should use in order to deliver its financial support in the most effective and efficient manner.

Education vouchers instead of provider financing

In a study commissioned by the federal government on 'demand-oriented' funding of continuing education, the authors (see Wolter et al. 2003) concluded that primarily theoretical considerations were the motivation behind possible state financing of continuing education using instruments such as education vouchers. There are three factors in particular which speak in favour of vouchers and against alternative forms of financing such as the direct financing of education providers or retrospective financial relief (e.g. via tax deductions):

1. **Greater incentive effect:** A greater incentive effect is to be expected from education vouchers than from other financing instruments. The fact that people can not only claim state-financed continuing education, but are aware that they would actually be forfeiting money due to them by not participating in continuing education, should have the greatest incentive effect for continuing education.
2. **Definition of target audience:** With vouchers, the target audience meriting support can be addressed directly and with minimal administrative effort. This should ensure that the unwanted 'deadweight loss effect' could be kept to a minimum and the efficient use of resources maximised.
3. **Competition effect:** Vouchers or similar demand-oriented instruments are expected to have two advantages over direct subsidisation of continuing education providers. Firstly, those pursuing courses hold the financial means in their own hands to motivate the providers to adapt their offerings to better suit the needs of education-seekers. Secondly, this should also encourage providers to structure their offerings as cost-effectively as possible as there would be an expectation that those seeking courses would want to use the means available to them to take as much high quality continuing education as possible. Demand-oriented financing instruments should thus reinforce the positive competition effect on the continuing education market, which would not occur with other forms of financing.

Although a range of advantages could theoretically be expected from public financing in the form of vouchers, there is little solid knowledge of how such instruments work in practice and how they would need to be designed in order to achieve the desired effects. The authors of the study on demand-oriented financing of continuing education concluded that neither Swiss (e.g. education cheque model in canton Geneva) nor international experiences (e.g. education cheque in the state of Nordrhein-Westfalen) were sufficient to ensure that a nationwide introduction of education vouchers would actually have the desired positive effects. It is also unclear how a future education voucher would have to be defined in order to be most effective and efficient.

Why conduct an experiment?

In order to discover whether and in what way education vouchers would alter education behaviour, it is not possible to simply introduce them. In such a case behavioural patterns without vouchers would not be known. In order to gauge the 'deadweight loss effect', it is therefore essential to be able to compare both scenarios. It is conceivable that behaviour patterns with a voucher model could be compared with the situation prior to the introduction of vouchers. However, such a comparison would only have limited significance as other factors, such as economic cycles, change over time in addition to the introduction of the vouchers.

The same limitations also apply to comparisons between cantons or countries in which voucher models already exist and those without possibilities for financing assistance. These cantons or countries also differ in terms of other factors which cannot always be recognised entirely and which would distort

a comparison of effects. The most important reason for examining the effects of continuing education vouchers by means of a field experiment is to observe simultaneously the behaviour of people who, apart from the education vouchers, otherwise live and work under the same conditions. Only in that way can the value added of an education voucher be determined reliably.

In addition to the fact that a good experiment always involves a control group for comparison purposes, there are further reasons in favour of conducting an experiment. If a voucher model were to be introduced, almost as a pilot scheme (whether on a regional basis or not), a set voucher model would have to be introduced. At that stage, however, it would not be possible to determine whether an alternative model structure would have led to better results. Particular considerations here could be the nominal value of the voucher and the influence of any accompanying measures such as an advisory service.

It is not yet known, either from theoretical considerations or from practical experience, how participation in continuing education alters dependent on the nominal value (price sensitivity of demand). It is also not known whether participation levels in continuing education would respond based on financial incentives alone, or whether information and advice is needed, or should even be a condition for such a participation effect. The experiment offers the possibility to establish what influence these parameters have on variations in continuing education behaviour – an advantage that would only be possible to a limited extent under a regular pilot scheme. The experiment designed to investigate the effect of education vouchers on continuing education activities was structured accordingly (see information on the experiment in box 1).

Experiment findings – participation in continuing education

Of the 2,437 vouchers issued for the experiment, 449 were redeemed. This corresponds to a redemption rate of 18.4% (detailed results can be found in Messer & Wolter 2009). The overall level of participation in continuing education in the experimental group was around 40%.

Around 22% of the people entitled to a voucher took part in continuing education, but did not redeem a voucher. This group was mostly explained by employer-financed continuing education. When the employer covered the cost of continuing education, it was not possible to also redeem a voucher. Non-redemption could also be due in part to the fact that the voucher was only sent out in January 2006 by which time some people had already paid for their continuing education in the second half of 2005. The redemption of vouchers by the experimental group therefore represents a lower limit. However, it must be added that if more people who had paid for their courses despite the voucher were to redeem it as part of a genuine voucher trial, the causal increase in demand for continuing education would not rise. Instead the deadweight loss effect would merely be greater.

As the participation rate in continuing education in the control group (incl. employer-financed courses) was at around 34%, participation in continuing education in the experimental group was statistically significantly higher by 15-20%.

As was to be expected on the basis of continuing education patterns without vouchers, the vouchers were redeemed to a far greater extent by people who already had a good level of education (see diagram 1).

Box 1: The Experiment

The experiment benefited from the fact that in 2006 the Swiss Labour Force Survey (SLFS) had to reduce the size of its sample. People who should have been surveyed for a further number of years had to be released from the sample on financial grounds.

For the purposes of the experiment 2,400 people were chosen at random from those released from the regular SLFS sample. The people who formed the experimental group received vouchers at the beginning of 2006. Those who remained in the regular SLFS sample did not receive vouchers and were thus formed the control group.

The experimental group continued to be questioned using the SLFS questionnaire in 2006 and 2007 as if they still formed part of the regular SLFS sample. The permission of all those in the experimental group was sought in order to link their responses with data from the voucher experiment.

Consequently, responses exist for people from both groups, the experimental and the control group, from the 2005 survey, a year before the experiment, as well as from surveys after the experiment in 2006 and 2007. At the same time, a 'continuing education' module was inserted into the 2006 SLFS survey, which allowed very detailed information on continuing education behaviour to be gathered on all those concerned (for the duration of the experiment).

The 2,400 people involved in the experiment were randomly allocated to sub-groups in order to investigate the effects of changes to the voucher model on participation in continuing education.

- Half of voucher recipients also received a telephone hotline number with their voucher via which they could obtain advice free of charge. A professional advisory agency provided the service and gave callers advice on what type of continuing education they could claim from which course providers.
- The nominal value of the voucher was staggered into three values. A third received a voucher with a nominal value of CHF 200, a further third received a voucher for CHF 750 and the remaining third a voucher for CHF 1,500. The voucher could be used to cover the full or partial cost of a fee-charged course, which had to take place between January and July 2006. The vouchers could be sent to the Federal Office for Professional Education and Technology (OPET) with a simple course confirmation upon which the course costs were paid.

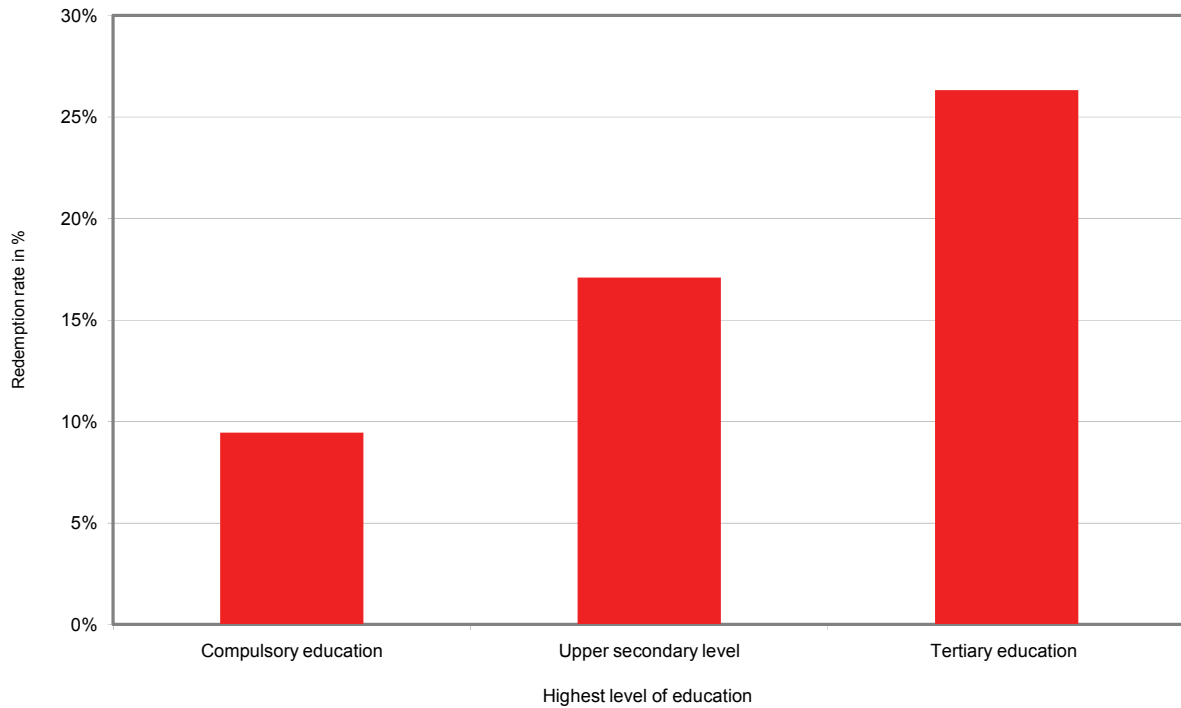
In contrast to usual patterns, it was noticeable that the vouchers succeeded in breaking the trend of age-related participation in continuing education. While participation in continuing education usually falls with age, no age effect was observed in the experimental group. The voucher led to a more even participation in terms of age.

A significantly higher level of participation in continuing education on the part of women was observed in both the experimental and control groups. The vouchers even had the effect of reinforcing this difference in favour of women.

A rural-urban pattern with regard to voucher redemption was not observed. Such a pattern could have been expected given that the proximity to continuing education institutions would tend to lead to increased demand for continuing education.

Lastly, people in gainful employment made use of the vouchers to a far greater extent than those not in employment. Vouchers therefore tend to have the effect of increasing the difference in participation between those in gainful employment and those not in employment.

Diagram 1: Vouchers redeemed by education level



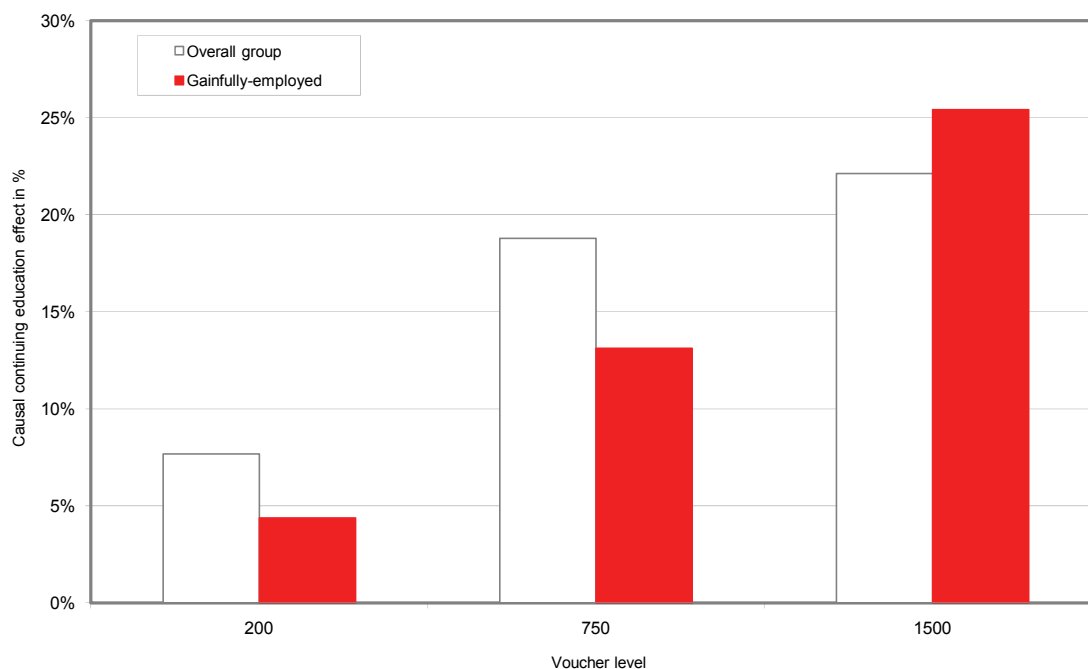
Price sensitivity

In terms of the nominal value of the vouchers, the findings were at times surprising. In general it is possible to say that the higher the nominal value, the higher the redemption rate. However, this finding is only partially valid. When taking the overall group of voucher recipients, the vouchers with a value of CHF 750 and CHF 1500 were redeemed significantly more frequently than those with a value of CHF 200.

However, if we look at the gainfully-employed and those not in employment in the experimental group, it is noticeable that among those not in employment, more of the vouchers with the middle value are redeemed. Among the gainfully employed however, there is practically a linear increase in the redemption rate depending on the nominal value (see diagram 2). The explanation probably lies in the fact that people in gainful employment already benefit to a large extent from employer-financed continuing education, and thus require a relatively high voucher value in order to further boost participation in continuing education.

It was not possible to examine other explanations for these varying patterns with the available data.

Diagram 2: Causal increase in participation in continuing education in percentage points (overall group and gainfully-employed) depending on value of voucher



Continuing education advice

The provision of advice on continuing education fulfils a number of functions; in this case the primary function was to achieve an increase in participation in continuing education³. It was examined whether the possibility of free advice would have a positive effect on the rate of voucher redemption. This was not the case. Vouchers accompanied by the offer of advice were not redeemed more than those where no advice was offered.

This finding is remarkable for two reasons. Firstly, it contradicts the views of many practitioners and some in research, who stress that transparency and advice are more decisive for participation in continuing education than financial support. Secondly, it should be highlighted that the advice offered for the purposes of this experiment were far better and more easily accessible than in most real cases and yet still had no effect.

Deadweight loss effect

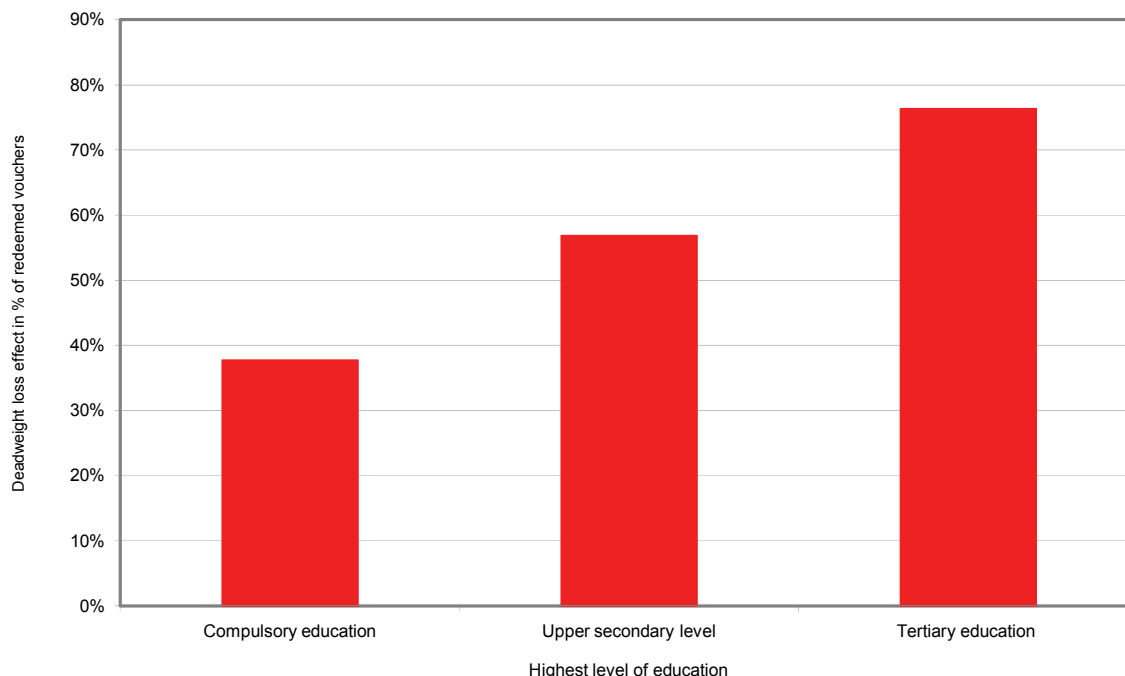
Vouchers with a nominal value of CHF 200 were redeemed far less (around 12% as opposed to 21% for other value vouchers). At the same time these vouchers also failed to have a significant causal effect, i.e. did not result in additional participation in continuing education. The funds used simply went into thin air.

This observation is particularly important because there are voucher models that operate with very low nominal values, and because it can repeatedly be seen that in the event of high demand for vouchers the value of those vouchers is often reduced as the budget diminishes. Given the present findings, the voucher models would prove to be ineffective in both cases as all of the resources fall victim to a total deadweight loss effect. There therefore needs to be a minimal nominal voucher value, probably in the region of around CHF 1000 rather than CHF 200, in order for a causal increase in participation in con-

³ Ideally advice should also improve the quality (or suitability) of continuing education sought. The question of quality should also have been addressed in the experiment. However, data protection rules prevented information from the advisory discussions from being used for research purposes.

tinuing education to be triggered. However, the deadweight loss effects could also be quantified according to other criteria.

Diagram 3: Deadweight loss effects by education level
(as a percentage of all vouchers redeemed)



As can clearly be seen in diagram 3, the deadweight loss effect rises massively with the level of education and reaches almost 90% in people with a university education. That means that while the better educated people redeemed the vouchers far more frequently than the less well educated, it was not possible to increase participation in continuing education to a greater extent than among less well educated people.

A further perspective takes into account continuing education behaviour prior to the experiment. It is generally known, and can be observed from SLFS data, that those who previously participated in continuing education measures are more likely to do so again at a later date. In that respect it is important to know whether vouchers will also be used by people who had not participated in continuing education in the years prior to the experiment (2004-2005). The results show this to be the case. The experiment therefore shows that vouchers are capable of motivating people to take part in continuing education even if their previous behaviour would seem to indicate that they belong to a group that is less inclined to do so. If this observation had not been made even more of the voucher redemption would have to have been categorised as deadweight loss effect.

Employer behaviour

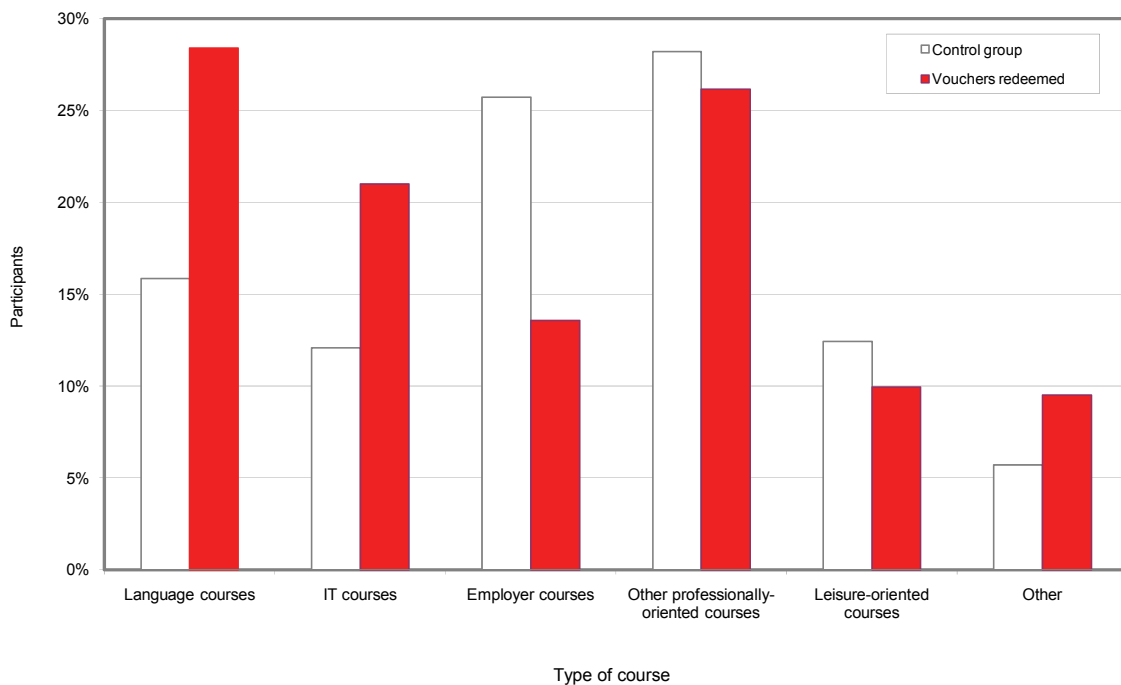
As mentioned earlier, employers in Switzerland are heavily involved in financing continuing education. Roughly 50% of employed course participants benefit from financial contributions from their employers towards the cost of continuing education courses. In the case of a longer term voucher model it could not be ruled out that the state offer of continuing education financing would influence company investment. From a negative point of view this could lead to a 'crowding out' of private investment. In the short term and especially in the case of a limited experiment – in terms of time and geographical area – such an effect is not to be expected. Such an effect can therefore not be observed during the experiment. In the experimental group, just as many people benefitted from employer-supported continuing education as in the control group. This result also confirms that, apart from the distribution of vouchers, there is almost no difference between the experimental and the control group.

Course content

In terms of course content the voucher recipients were given the greatest possible freedom. This was for two reasons: firstly, it is almost impossible to produce a definition of what constitutes an appropriate continuing education course that can be implemented and verified without a great deal of administrative effort. Secondly, and far more importantly, is the fact that the experiment is intended precisely to observe the behaviour of people in the experimental group in order to derive recommendations from their behaviour.

When observing the content of the courses attended (excl. employer-financed courses), it is noticeable that courses which were clearly leisure-oriented and less relevant for the labour market, were not attended more frequently by voucher recipients than by those who had to pay for such courses themselves (see Diagram 4).

Diagram 4: Course content (with and without vouchers)

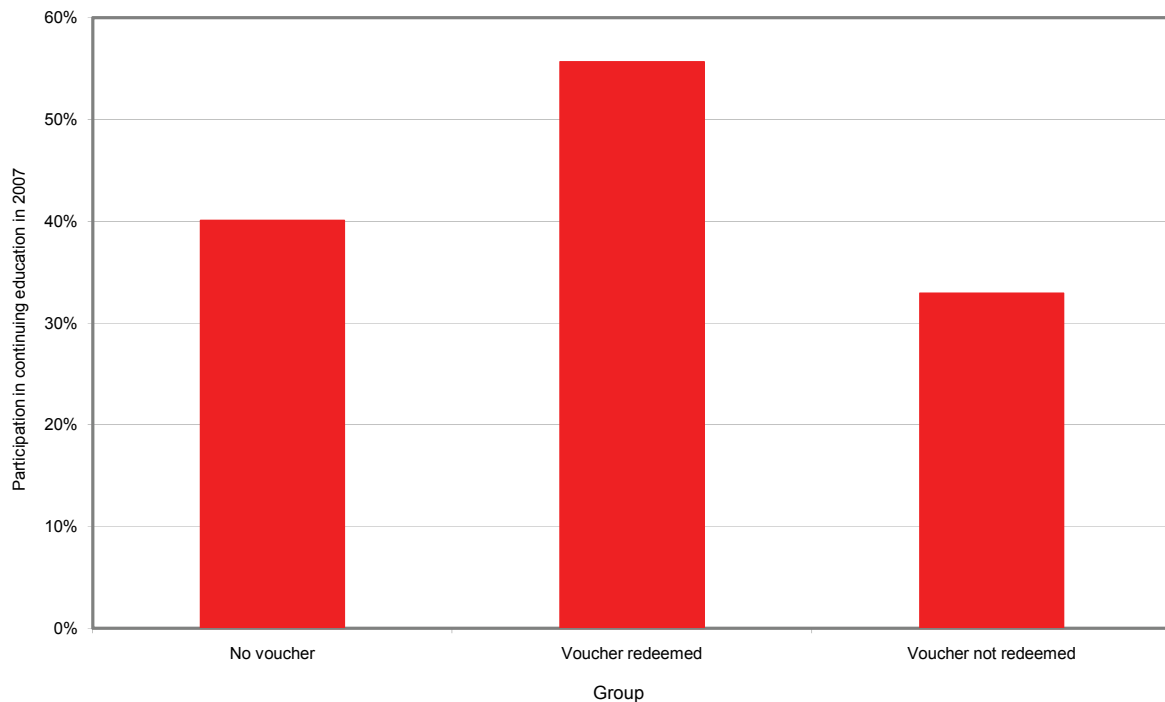


It was also noticeable that there was a clear tendency towards IT and language courses on the part of voucher recipients. As such, vouchers served to satisfy a demand, particularly in the first course category that could certainly be considered desirable. Furthermore, in terms of IT courses, it was possible to observe that the voucher succeeded in correcting the otherwise age-related demand in favour of older participants.

Effects of continuing education – sustainable continuing education activities

In reality, the distribution of continuing education vouchers would ideally only occur under two conditions. Firstly, the vouchers would have to lead to a causally higher level of participation in continuing education, particularly among those population groups who would otherwise be less inclined to participate. Secondly, the continuing education would have to generate a benefit which would flow back into society as compensation for its investment. While the former can be seen positively from the results of the experiment, i.e. a voucher model would, if properly structured, show the expected effects in terms of participation in continuing education, the latter is more difficult to answer, not least because the experiment only allowed the short term effects of continuing education to be measured i.e. only up to a year after continuing education had been undertaken. Furthermore, the relevant benefits could take many forms and are thus difficult to measure in full.

Diagram 5: Participation in continuing education 2007



One important aspect to monitor is participation in continuing education when vouchers are no longer issued. Do people who redeemed a voucher only pursue continuing education when a voucher is available, or does the continuing education encouraged by the voucher also have a lasting effect when vouchers are no longer available?

As diagram 5 shows, participation in continuing education on the part of those who redeemed the voucher was significantly higher than the participation rate of the control group, while those who did not claim the voucher in 2006, showed a significantly lower level of participation in 2007 than the control group. The higher participation rate of voucher claimants remains in place when we consider that people who took part in continuing education the previous year are already expected to exhibit a higher level of participation in continuing education.

This important result has to be interpreted from two angles. On the one hand, it shows that the continuing education activity initiated by the voucher does indeed have a lasting effect. On the other hand, it shows that the vouchers appeal to a very specific group among those otherwise not usually active in continuing education. People who are not negatively disposed to continuing education, but who need an extra incentive to take part in continuing education, can be motivated through vouchers.

However, this still leaves those who do not even react to financial incentives and who can be described as particularly 'education resistant'. This also means that vouchers are only suitable to draw a relatively small additional group of people to continuing education, but not to provide a significant boost to participation in continuing education.

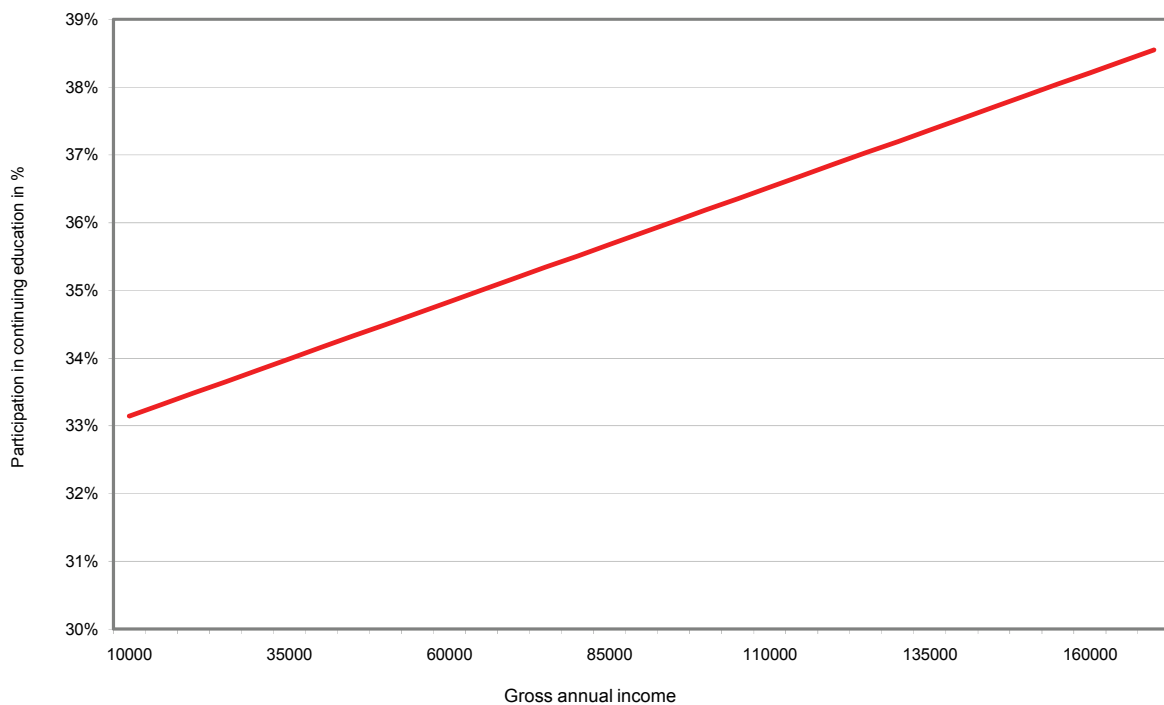
Participation in continuing education in 2007 also shows that the causal effect of vouchers in 2006 likely represents the maximum increase in the continuing education participation rate that could be achieved with education vouchers.

Labour market effects

As mentioned earlier, the period within which to measure the positive labour market effects of a one-off course is set to be relatively narrow. Despite this it should be taken into consideration that if positive effects only become apparent after a longer period of time and after multiple sessions of continuing education, the expected benefit then has to be contrasted with a far greater investment. An analysis of the labour market effects observed shows, however, that people who took part in continuing education thanks to the voucher in 2006, in almost all respects did not differ from other people in 2007. The voucher therefore did not result in higher pay, greater job security or any other observable positive effects.

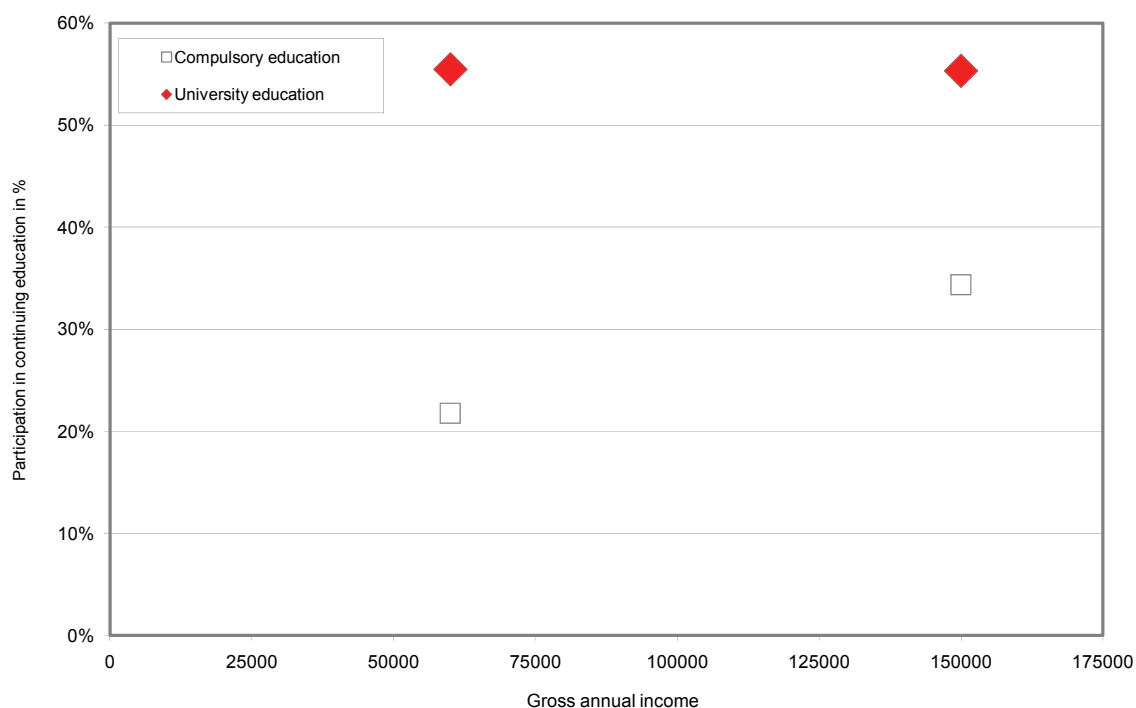
As other studies have already shown, there is a positive correlation between continuing education and pay levels; both in the control and experimental groups (see Diagram 6). However, this does not tell us anything about the impact of continuing education on pay levels.

Diagram 6: Earnings and participation in continuing education 2006



The correlation can be interpreted inversely such that people with higher incomes are more likely to participate in continuing education. This interpretation supports the analysis of wage growth after continuing education; it does not alter in the slightest either in the experimental group or the control group. In other words in the short term at least, no wage effect can be determined as a result of participation in continuing education. Such an effect would be necessary, however, if the state wanted to compensate its financial support for continuing education, at least in part, through higher tax revenues (as a result of higher earnings).

Diagram 7: Earnings, education level and participation in continuing education (women), 2006



Conclusions

The experiment with education vouchers for continuing education proved to be an extremely effective instrument for examining the feasibility of such a financing instrument. The conclusions that can be drawn from the experiment are on two levels. On the one hand, it should be noted that the voucher can be effective in successfully increasing participation in continuing education and among those groups that are otherwise removed from education. In addition, continuing education content was encouraged which would satisfy the aims of the policy. The price sensitivity of demand for vouchers shows that support is only effective when the nominal value of the vouchers does not fall below a certain amount. And lastly, it can be seen that the financial incentive – as far as the participation rate in continuing education is concerned – is far more decisive than the availability of advice.

On the other hand, it should be recognised that at least in the short term, no noteworthy positive labour market effects of participation in continuing education are to be observed, which would guarantee that investment would generate an adequate benefit for the state and thus also for society as a whole. It cannot be ruled out that there are medium to long term effects that could not be covered in this study, but which would justify public investment; such positive effects would first have to be substantiated, however.

Recommendations

1) Definition of target audience

The fact that far fewer people from groups less inclined to education undertake far less continuing education, and that these people often have to be supported by labour market measures in the event of unemployment or other social transfers, shows that there is a group of gainfully-employed for whom measures to render continuing education more appealing would be entirely justified. State support would therefore have to be available to a very limited group of people primarily defined by a low level of education.

Furthermore, the target audience would have to be restricted on the basis of income. As the study shows, for poorly-educated people, income is a factor that both hinders and encourages continuing education (see diagram 7). That means that even for people with a low level of basic education, a high income can significantly boost participation in continuing education. Consequently, the target audience would have to be limited to people with a lower level of basic education and a lower income. The efficiency of the public funds used could thus be assured.

2) Vouchers as a suitable instrument

The experiment clearly showed that financial incentives work. This field experiment confirms the previous theoretical considerations that demand-oriented financing instruments (and thus vouchers in particular) are likely to be the most effective means of encouraging participation in continuing education.

3) Staggered issuing of vouchers

Observations suggest that people who participate in continuing education thanks to the voucher, continue to be more inclined to participate in continuing education even without receiving a further voucher. It would therefore be more efficient to only issue vouchers every two to three years. If people were to be entitled to vouchers every year, the risk would increase that a new group would form that would participate in continuing education even without support and for whom this state support would again be lost in the form of deadweight loss effects.

4) Open approach

In view of the difficulty in defining what types of course should be deemed 'appropriate' and the associated administrative cost, a fairly open approach should be taken in determining what kind of continuing education should be eligible for support.

5) Periodic review

Even in the event of a definitive introduction of education vouchers, the effectiveness and efficiency of the programme should be scientifically reviewed on a periodic basis as shifts in behavioural patterns on the part of the various actors (participants, course providers, employers etc.) cannot be ruled out. This could mean that the measures, which were optimal at the time of their introduction, no longer achieve the intended aims.

Further reading

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