



TIER

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Top Institute for Evidence-Based Education Research



INTRODUCTION

Pursuant to a Dutch Ministry of Education, Culture and Science (OCW; see letter dated 26 January 2007, reference ASEA.DIR.2006.48559) request, the ‘Evidence-Based Education’ (*Evidence Based Onderwijs*) interuniversity research group conducted a study to gauge the value of a new scientific research institute for the development of evidence-based education in the Netherlands. This interuniversity initiative links up with the Ministry of OCW’s policy indicator of ‘Evidence-Based Policy’ and the strategy memorandum addressing the theme of education issued by the Netherlands Organisation for Scientific Research (NWO).

The aim of TIER is to develop knowledge about ‘evidence-based education’ to be used by the OCW in its policy preparation and assessment activities, by policy implementers, such as educational institutes, to allocate resources and aid in teaching-related decision-making, and by parents and pupils when choosing a school or programme of study.

‘Evidence-Based Education’ will be developed along various tracks within the research institute as currently conceived, by:

- performing an independent cost-effectiveness study,
- performing reviews and meta-analyses of the cost-effectiveness of interventions,
- assessing the quality and usability of existing studies,
- making the findings of the abovementioned research available and accessible, presenting these findings and taking responsibility for their dissemination,
- strengthening knowledge and stimulating a positive attitude towards ‘evidence-based education’ within the field of education.

This business plan specifically incorporates the development of a knowledge portal in which a direct link is laid between the knowledge needs of the Knowledge Directorate of the OCW, the interdepartmental Knowledge and Innovation Directorate of the Ministries of OCW and Economic Affairs (EZ) and the knowledge chambers of the Ministries of OCW, EZ, Social Affairs and Employment (SZW) and Health, Welfare and Sport (VWS).

Given the fact that the establishment of Social Top Institutes no longer has the support of the Ministry of OCW, it will be the regular NWO procedures for scientific research that will be used to guard the scientific quality of the projected interuniversity institute. To this end, the NWO will commission a so-called zero measurement and an interim review, to be conducted by a visitation committee of pre-eminent national and international scholars.

The present business plan contains a description of challenges, a problem analysis, a description of focus areas and tasks, the governance structure, a per university budget – including matched funds – and a summary of participating partners’ individual action plans. These action plans provide a summary of the research plans to be set out in consultations between those responsible for carrying out the research and, where relevant, the policy directorates and educational representatives. The Teacher Academy described in the plan will be organised in conjunction with the Maastricht University initiative, insofar as the social transfer of scientific research findings to the field are concerned.

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TABLE OF CONTENTS

INTRODUCTION.....	3
TABLE OF CONTENTS.....	5
1. CHALLENGES.....	6
2. PROBLEM ANALYSIS.....	8
3. THE INSTITUTE, TASKS AND ACTION PLAN.....	10
Focus area 1: Develop and evaluate effective educational interventions and innovations.....	10
Focus area 2: The societal context of education.....	14
Focus area 3: Synthesis and integration of scientific production and the development of a virtual library of ‘evidence-based’ educational interventions.....	17
Focus area 4: Teachers Academy: an academy for ‘evidence-based education’.....	20
4. THE ADDED VALUE OF TOP INSTITUTE FOR EVIDENCE-BASED EDUCATION.....	21
5. EMBEDDING THE INSTITUTE.....	22
6. THE ORGANISATION.....	25
7. MAPPING THE INSTITUTE’S GROWTH.....	30
8. FOLLOW-UP STEPS.....	31
9. APPENDIX: ACTION PLANS.....	32
UvA/CPB.....	34
MU (Maastricht University)	41
GU (Groningen University)	48
LITERATURE.....	51
APPENDICES.....	53

1. CHALLENGES

Adequate policy preparation is increasingly dependent on scientifically-founded knowledge whenever ambitious goals are at issue. At the same time, there is a growing emphasis on policy assessment. In other words, there is an ever greater need for information on the part of not only government, but educational bodies as well. Rather than resulting in adequate knowledge use, however, meeting this need has tended to lead to an overabundance of information. Selecting, assessing and making research accessible is therefore becoming more and more significant. The same applies when it comes to providing insight into and transferring research findings.

The Ministry of OCW plays an important role within this knowledge infrastructure. Its involvement concerns knowledge that has applications for policy preparation and that can shed light on the effects and efficacy of existing policy on the one hand and on the other, knowledge that can assist educational institutes in raising teaching quality standards.

Government, educational institutes and parents and pupils alike have an interest in high quality education. The educational establishment defines institutions and moulds the framework and infrastructure that support high quality teaching. The concept of the ‘educational establishment’ is used in this context to refer to the full range of institutions, rules and structures operating in education. Such institutions, rules and structures may concern either the educational establishment as a whole (the macro-perspective), teaching institutions (the meso-perspective) or the primary process of learning and instruction (the micro-perspective). The educational establishment contributes ideally to the quality of education, the functionality of education resources spending and the improved accessibility of education. For each of the three establishment goals named here – quality, functionality and accessibility – performance-enhancing knowledge is a key requirement.

In its 2006 report entitled ‘Towards more evidence-based education’ (*Naar meer evidence based onderwijs*), the Dutch Education Council posits that support for the evidence-based approach is on the rise both within and outside the field of education. It attributes this support to increasing interest in quality and functionality. As the Education Council quite rightly notes, ‘evidence-based education’ provides a means by which the Netherlands (and the EU) can achieve the Lisbon ambitions. The Ministry of OCW has likewise recognised this trend and, in its letter to the Dutch Lower House of Parliament to follow up on the Education Council’s abovementioned report, the minister thus states that “The debate is focusing in increasing measure on the need to create a strong interface between policy, research *and* practice. Nevertheless I must conclude that initiatives to achieve this are lagging amidst the continuing intensification of the debate, resulting in the need for additional impetuses” (Lower House, session year 2006-2007, 30800 VIII, no. 79).

The minister goes on to point out the need for evidence-based policy and the carry-over value of new scientific insights in teaching practice (‘evidence-based education’). Both ‘evidence-based policy’ and ‘evidence-based education’ are concerned with interventions. Education can be viewed as a collection of interventions – ranging from policy interventions to pedagogical-didactic interventions – aimed at inculcating knowledge and skills. Interventions are defined here in the very broadest sense of the word, and encompass all activities – from teacher efforts in the classroom to law-making – that influence the development of knowledge amongst participants in education. Generally speaking, two types of educational interventions can be distinguished:

- policy interventions such as changes to the system, policies on eliminating educational disadvantage, policies on resolving the teacher shortage, etc.,

- pedagogical-didactic interventions: pedagogics (Montessori, Dalton, etc.), teaching methods, teacher quality in terms of didactic skills and subject knowledge, IT use, etc.

An important question that comes up when dealing with both didactic and policy interventions is: What works? More specifically, which interventions have a demonstrable effect, which are cost effective and which are functional?

The mission of the Institute for Evidence-Based Education Research is to perform outstanding scientific research and to make research findings available to, and usable for, education practice and policy alike. TIER aims to be an element that binds research, practice and policy in the field of education.

Establishment of the Institute for Evidence-Based Education Research will allow the Netherlands to develop into one of the world's forerunners in educational quality and functionality enhancement. There has been a particularly keen focus on evidence-based education in English-speaking countries, a case in point being the United Kingdom's Curriculum, Evaluation and Management Centre at Durham University. The CEM Centre furnishes education performance indicators to both schools and the government. Evidence-based education comprises one of its areas of activity, which the Centre describes on its website as the "... idea that educational policy and practice should be guided by the best evidence about what works. This means that specific intervention strategies and policies should be rigorously evaluated before they are advocated or required. Where this is not possible they should be adopted experimentally, in such a way that their impact can be properly evaluated" (<http://www.cemcentre.org/RenderPage.asp?LinkID=30310000>).

The United States uses the 'What Works Clearinghouse' (WWC), established by the US Department of Education. The WWC "... collects, screens, and identifies studies of effectiveness of educational interventions (programs, products, practices, and policies). The WWC regularly updates the WWC Technical Standards and their application to take account of new considerations brought forth by experts and users. Such changes may result in re-appraisals of studies and/or interventions previously reviewed and rated" (<http://www.whatworks.ed.gov/>). The Dutch Institute for Evidence-Based Education Research will seek to foster relationships and collaboration with the CEM Centre and the WWC – in the case of the CEM Centre, by building on existing contacts.

The Top Institute for Evidence-Based Education Research seeks to gain recognition from the NWO, thus meeting its standard of embodying "... a partnership between research institutes and users (direct and indirect) of research findings, defined above all by outstanding scholarship and the explicit aim of furnishing findings that have practical applicability for society through close cooperation with parties that rely on high-quality knowledge, such as government and partners operating in the business services sector". We will therefore be submitting a request to the NWO for an initial zero measurement at the earliest possible moment, so that an interim review can take place at a later stage.

2. PROBLEM ANALYSIS

When it comes to developing a system of evidence-based education, the Netherlands is trailing behind the UK and the US. Specifically, education research in the Netherlands has four problems with which to contend:

1. Education economics research lacks sufficient mass. The creation of the SCHOLAR programme at the University of Amsterdam in the 1990s gave a significant impulse to the development of education economics in the Netherlands. Over the past ten years, SCHOLAR has grown to become an international leader among education economics institutes. Today, Dutch education economics and education theory demand a fresh impetus. A Top Institute for Evidence-Based Education Research would create a nexus of national and international alliances and competence synergies.
2. A problem facing pedagogical research in the Netherlands is that its practical application in education is in many cases difficult to demonstrate. Pedagogical research is often criticised for having too little relevance for education practice, and researchers working in the field have been more or less absent in policy discussions about the future of education. While it is true that the Netherlands is in the international vanguard of research into effective teaching concepts, this body of knowledge is not brought to bear on issues of cost. This may help to explain the substantial failure to transfer this knowledge to education practice. Knowledge about reliable assessment research is also lacking, and research findings often fall short in their relevance for schools and policy practice.
3. Studies of the cost-effectiveness of educational interventions are largely concentrated outside the Netherlands, and the results of such interventions do not necessarily apply in the Dutch context. Moreover, there is no single, clear system underlying this research, particularly when it comes to determining the costs and effects of interventions. This has meant that the quality and relevance of available research is oftentimes below par, while a framework for cross-comparison is entirely lacking. Prioritisation on the basis of cost-effectiveness ratios is consequently impossible. As such, the formulation of strict guidelines directing sound cost-effectiveness research in education could offer a targeted solution.
4. The Dutch version of the knowledge pyramid – a pyramid with the most solid evidence for what works in education (trials employing randomisation) at the top and describing progressively less solid evidence towards the bottom – usually stops at quasi-experimental research, which comprises comparison of the effects of natural implementation variants of national policy. True trials presuppose a willingness on the part of public authorities and administrations to temporarily reallocate considerable amounts of money to the organisation of pedagogical intervention assessment studies in schools that have agreed to participate as either experimental or control groups, respectively. The ethical principle that pupils are not to be disadvantaged by such trials, and certainly not when they are in the control group, implies that the control group, too, must be offered some additional advantage. Incidentally, the argument that the trial turns pupils into ‘guinea pigs’ is not a valid one. It is only true that we may perhaps be depriving many children of successful education. Moreover, schools themselves constantly experiment with pupils without any kind of supervision or reliable evaluative research.

Careful assessment of educational interventions generates evidence that can be used to determine the desirability of those interventions. Evidence-based education is the collective set of educational interventions that have a proven positive cost effectiveness. TIER’s aim is

to develop knowledge about evidence-based education that can subsequently be used by the OCW in its policy preparation and assessment activities, by policy implementers, such as educational institutes, to allocate resources and aid in teaching-related decision-making, and by parents and pupils when selecting a school or programme of study. 'Evidence-Based Education' will be developed along various tracks within the research institute as currently conceived, by:

- performing an independent cost-effectiveness study,
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- strengthening knowledge and stimulating a positive attitude towards evidence-based education within the field of education.

Effectiveness and cost effectiveness will form a central focus of the research institute, in which especial emphasis will be placed on intervention assessment. As such, the research will be designed so as to make rigorous assessment possible. An additional issue is the synthesis and integration of scientific research originating in different fields of study.

Evidence-based education emphasises the investment profile of education spending: education represents a positive investment with (potentially high) returns for both those involved and for society at large. Viewed from the investment perspective, society profits from the allocation of resources to interventions having favourable cost-benefit ratios. While this applies for each and every investment made in education, it is particularly true of investments made in young people from underprivileged backgrounds – or, in the words of the economists and educationalists Levin, Belfield, Muennig and Rouse (2006): “The investment criterion is a simple one: public investments are worth making if the benefits exceed the costs. Even if education is expensive, poor and inadequate education for substantial numbers of our young may have consequences that are even more costly. Such an analysis goes beyond the more basic question of social justice. If life chances depend heavily on education, it is important that inequalities in education associated with race, gender, immigrant status, language, and handicap be redressed as a basis for equalizing opportunities in a democratic society. But, even beyond the issue of injustice is the question of whether a poor quality education has consequences for the larger society. Social science research shows that poor education imposes social burdens via lower incomes and economic growth, lower tax revenues, and higher costs of such public services as health, criminal justice, and public assistance. In this respect, it is possible to view efforts to improve educational outcomes for at-risk populations as a public investment that may have benefits for the entire society in excess of investment costs.”

The absence of any systematic investigation into the cost effectiveness of educational interventions serves to block the inception and dissemination of targeted innovations. A narrower focus on the 'evidence-based education' theme can therefore help to heighten the relevance of such pedagogical research. The Top Institute for Evidence-Based Education Research aims to achieve precisely this; its goal is to tailor operations to support research, practice and policy in education.

3. THE INSTITUTE, TASKS AND ACTION PLAN

The Top Institute for Evidence-Based Education Research will comprise four areas of focus, namely:

- 1 development and evaluation of effective educational interventions and innovations,
- 2 the societal context of education,
- 3 the synthesis and integration of scientific production in the fields of research specified; to result in the development of a virtual ‘library’ of evidence-based educational interventions,
- 4 an evidence-based teaching academy where courses and study programmes are developed to provide evidence-based education training to teachers and students enrolled at teacher-training institutes.

Each of these focus areas will be subdivided into a number of distinct themes. The four focus areas cover the complete spectrum of lifelong learning, which includes preschool education, primary education, secondary and vocational education, higher education and continued training and instruction. The focus areas bear both on the educational establishment – specifically, on the level of legislation, regulation and policy and financial relations between government, educational institutions, education providers and education participants – as well as on the didactics and organisation of teaching within institutions.

Focus area 1: Development and evaluation of effective educational interventions and innovations

Summary

Focus area 1 centres on the educational knowledge infrastructure chain. Educational intervention forms the key link in this chain. Three types of educational interventions are distinguished: interventions occurring at the level of the educational establishment as a whole (the macro-perspective), at the level of teaching institutions (the meso-perspective) and at the level of the primary process of learning and instruction (the micro-perspective). Examples of micro-level educational interventions include an IT application used for teaching purposes or a didactic method. At the meso level, these might include measures to change class size and, at the macro level, interventions in policies for eliminating educational disadvantage.

Activities within this area of focus concern:

- developing and evaluating effective educational interventions at the levels of the educational establishment, the educational institution and the primary process of learning and instruction (macro, meso en micro),
- developing knowledge technology in education,
- increasing innovation and production capacity in education,
- implementing and disseminating evidence-based knowledge technologies,
- evaluating interventions and new technologies applied in education.

Within this focus area, educationalists and economists will work together on distinct projects. Educationalists will have primary responsibility for the methodological and content-related organisation of research into the effects of educational interventions once these have been developed. Economists will concentrate on performing economic assessments (cost-effectiveness analyses) of these interventions.

Gauging the effects of educational interventions is problematic

Knowledge about the effects of educational interventions is still limited in the Netherlands. It is difficult to say decisively whether a particular intervention works in practice. To be able to answer this question, we would like to know what would have happened had the intervention not been implemented (a counterfactual condition). Only then can causal links be proven. The theory of ‘counterfactuals’ refers to the notion that an event (effect) would not have occurred if, contrary to facts, a previous event (cause) had not occurred. However, this is in principle impossible, given that both conditions cannot be observed.

In order to nevertheless gain an impression of policy effects, researchers rely on control groups consisting of people who have not been affected by the intervention. In the context of Dutch education practice, it has proven difficult to find reliable control groups. Policy is oftentimes implemented at the national level, which means that all pupils are affected by the same policy instruments. Differences between schools, for example in class size, rarely arise by chance and are almost always the result of parent, pupil or teachers’ decisions. Teaching methods are generally implemented across the board. Consequently, any comparison between different groups of pupils will always beg the question of whether the groups really are equivalent, for example in terms of social-economic backgrounds or aptitudes. As such, inter-group variation in areas like pupil linguistic ability in small versus large groups could plausibly be the result of specific policy (e.g. class size reduction), but could also be tied to unobserved differences between the groups, such as higher motivation among pupils in smaller classes. The literature shows that taking no or insufficient account of selection effects can lead to erroneous conclusions about policy effects. Such errors may relate to not only the *extent* of the effects, but also, and even, to the *direction* of those effects (i.e., an effect that was considered to be an improvement in fact represented a deterioration, or vice versa).

Randomisation is generally considered to be the best method for forming equivalent groups and for preventing bias resulting from (self-)selection. In practice, however, there are additional equivalency problems to be dealt with, such as: 1) lack of compliance, 2) incomplete data and 3) ‘unblinding’ (participants know they belong to the intervention or control group, respectively). Each of these three problems occurs during policy intervention assessments and can impede the viability of a reliable assessment.

New opportunities for determining the effects of educational interventions

Over the past decade, international literature in the field has achieved significant advances in developing methods that can convincingly be applied to measure the effects of educational interventions on the macro, meso and micro levels. New forms of empirical research into the effectiveness of various forms of educational policy have proven highly valuable, particularly when it comes to conducting trials and making use of coincidentally arising circumstances that bear a strong resemblance to such trials. The effects of educational interventions are measured by comparing outcomes observed in an experimental group that has been subjected to a certain policy with those of a control group that has been chosen at random and has not been subjected to this policy. Such comparison furnishes significantly more reliable evidence of the effects of educational intervention than was the case in trials done in the past.

Overview of existing applications in the Netherlands

During the past few years, these methods have on several occasions also been applied by Dutch education economists and educationalists to aspects of educational interventions in the Netherlands. A brief description of several of these studies follows below.

Leuven, Lindahl, Oosterbeek and Webbink (2007) investigated whether additional funding for staff and computers would lead to higher performance in schools with disadvantaged pupils. In their study, they draw on circumstances created through a policy

whereby, over a period of several years, schools comprising more than 70% disadvantaged pupils received additional resources, while schools comprising less than 70% disadvantage pupils received no additional resources. Careful comparison of schools that fell just above and just below this 70% cut-off mark allowed the authors to determine that the additional expenditures did not yield improved pupil performance. The additional subsidy for computers even seems to have had a negative effect.

Leuven, Oosterbeek and Van der Klaauw (2005) conducted a genuine field experiment in which first-year economics students enrolled at the University of Amsterdam were offered the prospect of a financial reward if they succeeded in obtaining their first-year certificate (*propedeuse*) before the start of the following academic year. The results showed that the financial stimulus motivated good students (those who had high marks in mathematics during secondary education) to earn more credits during their first year of study, while poor students (those who had poor marks in mathematics during secondary education) actually earned fewer credits during their first year of study. Moreover, even though the stimulus was only offered during the first year of study, the results showed that the effect was magnified to a significant degree after three years. This small-scale field study supplies valuable insights into the effects of financial stimuli on study progress and into the importance placed on meeting degree programme deadlines. Insights like these can serve as useful tools towards designing a system of financial assistance for students.

Doolaard and Bosker (2006) researched the effects of four different ways in which schools deployed teaching staff in each of the various school years to achieve a basic structure for primary education, specifically, through small groups, average size groups, groups with an additional teacher's assistant and large groups. The pupils were followed over a number of years to trace their linguistic and mathematical development. The researchers established that while no effects were evident in year 2, effects were evident in year 3. Pupils in small and mid-size groups showed more positive development than pupils in the other groups, which effects continued up through the end of year 4. A supplementary cost-effectiveness analysis yielded the surprising insight that the mid-size group (with about 20 pupils) ultimately provided the most gainful balance between effects and costs, and therefore was the most cost effective.

Other relevant examples include that of Leuven, Lindahl, Oosterbeek and Webbink (2006), who studied the effects that lowering the school starting age had on early test scores, Oosterbeek and Webbink (2006), who investigated the impact of student achievement grants for study abroad on the brain drain, Roeleveld and Van Veen's study on repeaters and Luyten's on how the start of the school career affects children's development.

All of the examples cited here were purposely designed studies.¹ None of them, however, furnishes definitive proof of the success or failure of an intervention, meaning that not one of them offers any information that is in itself useful in the context of either policy or practice. They are pieces of a puzzle, and only thorough meta-analysis will yield insight into what works and what does not. Meta-analysis will therefore form an integral part of activities carried out by the Institute for Evidence-Based Education Research.

A wealth of untapped opportunities

What is described above is an illustration of what can be achieved in modern evaluative research in the Netherlands. Nevertheless, the actual number of studies performed remains limited. The reason has nothing to do with a lack of policy for which reliable assessments are needed, but rather with: 1) inadequate recognition (until now) of the benefits of evidence-

¹ Whereas referencing a limited number of studies by a select range of researchers would in many cases indicate author bias, these are in fact the only Dutch studies known to us at present.

based policy, 2) limited research capacity, 3) mediocre data infrastructure, and 4) the lack of such resources as will allow schools to implement experimental or control group interventions in a reliable manner. The section below clarifies how the Institute for Evidence-Based Education Research's focus area in the 'evaluation of educational interventions' will resolve these issues.

Evidence-based policy: trials fund

The importance of evidence-based policy has gained increasing recognition in recent years. The Ministry of OCW has taken relevant action in the organisation of a trials fund, which is included in the 2008 budget and which will be used to subsidise a number of trials using random control groups over the coming years. The trials are linked to an assessment programme to which the Netherlands Bureau for Economic Policy Analysis (CPB; Webbink, Teulings) and researchers at the University of Amsterdam (Oosterbeek, Leuven) will contribute. The programme's objectives and available expert knowledge make it an excellent fit for the research institute in terms of its approach to both the organisation of trials and analysis of findings.

Examples of feasible trials of potential interest:

- Trials abroad have shown that intensive coaching and mentoring are successful in reducing dropout rates. Use of financial stimuli for teams of teachers has also been shown to have positive effects. Replication of these trials in the Netherlands can furnish vital knowledge about how to tackle the dropout issue in the Netherlands.
- In the transition year of mixed-race secondary education schools, manipulation of pupil distribution across those transition-year classes can be used to create variation in the balance of black and white students. Were such an intervention to be implemented at a number of schools, the debate about the desirability or undesirability of separate 'black' and 'white' schools would be able to draw on hard facts about the consequences of such divisions on pupils' educational performance and other relevant outcomes.
- Many municipalities use a system whereby schools with too many applicants allot places on the basis of a lottery. A study to trace how pupils who were turned down in the lottery perform at their current schools in comparison with those who were accepted in the lottery could offer a better instrument for comparing the qualities of the schools concerned than do the rankings based on education inspectorate data published in the national newspapers. Similarities in data provided through each of these respective methods could then be regarded as confirming the validity of the education inspectorate's assessment approach, while major discrepancies would indicate significant room for improvement.
- On average, students enrolled in Dutch higher education take much longer to complete their study programme than the stipulated nominal length. Contributing factors include the fact that programmes require no more than 25-30 hours of study per week, such that many students also take a job. Students would be able to work more/faster if they were to take out loans rather than work. A simple experiment could be set up wherein a randomly selected group of first-year students receive information from the IB-Groep (*Informatie Beheer Groep* or 'Information Management Group'; body that administers the Dutch national system of student grants) that frames student loans in a more positive light than has been the case up until now. After a certain period of time, the lending behaviour and study progress among the group of students who received this information can be compared with that of students who did not receive this information.

- A study to measure the effectiveness of the New Learning concept (*Het Nieuwe Leren*). The New Learning concept aims to make learning more meaningful, authentic, social and independently driven by linking the learning process with pupils' sphere of experience. Teachers no longer instruct; rather, they provide coaching and guidance. Underlying this concept is the idea that pupils are better able to assimilate knowledge whose sense and function is clear to them. The New Learning concept has been implemented at various levels in education over the past few years. Key questions that this implementation calls forth are: What is the learning efficiency of the New Learning concept in practice, and what is its cost-effectiveness ratio? Another area for exploration is the effectiveness differential of the concept's implementation in different forms of secondary and higher education, as advocated in an address delivered by Werf (2005).
- Investigation of 'extended schools' (*brede scholen*), which are currently being founded in large numbers, primarily in the larger cities. Their driving concept of the integrality of youth care and education combined with the school's community function, has never yet been tested for its cost effectiveness. Moreover, trials testing various promising 'care structures' as applied within the extended school concept framework would offer additional insight into which approaches yield the best ratio of cost versus effectiveness.

Many more examples can be furnished to add to this list.

Focus Area 2: The societal context of education

Summary

Focus area 2 centres on the interchange between societal processes – including labour market developments – that influence education and the impact that education has on societal developments. Research topics included within this focus area will be:

- effective interventions for improving education labour market functioning, including effective recruitment and training of new teachers ('upgrading the teaching profession'),
- effective methods for cutting the dropout rate,
- effective interventions for improving education/labour market alignment,
- the effects of business-related training, with the aim of developing 'evidence-based training': a body of knowledge about the cost-effectiveness of business-related training,
- the societal impact of education (social cohesion, health, criminality, etc.),
- society's impact on education (social development, regulations, etc.)
- comparison of international 'evidence-based practices' and societal contexts of education.

The macro, or societal perspective, is central within this focus area. Economists and educationalists will work together to organise, develop and evaluate effective interventions, with the object of investigating social problems confronting education – problems related to the teachers' labour market, safety in schools, the societal impact of education – and of building a relevant body of knowledge and disseminating this knowledge among involved stakeholders.

Overview of existing applications in the Netherlands

Much has been written about alignment between education and the labour market. The determinants for early school leaving and the risk of youth unemployment have now also been well-charted. Thus we know that older Dutch women aged 50-64, ethnic minority women, Dutch youth aged 15-24, ethnic minority youth and the aged, particularly those belonging to ethnic minority groups, are at a higher risk of entering the labour market without minimum qualifications. We also know that the costs associated with dropouts are high both for the individual and for society (Groot and Maassen van den Brink 2002).

There is little empirical evidence about the effectiveness of dropping out, and the evidence that is available shows conflicting findings. Hartog (1983) found that, on average, dropouts had made the appropriate choice. Hartog, Pfann and Ridder (1989) found that dropouts behave differently than youths who do go on to earn their diplomas, and that the choices that youths make after the fact are consistent with comparative (monetary) rewards.

In their study, Groot and Maassen van den Brink (2002) calculate the return on a 50% reduction in the number of dropouts, as based on the EU goals set in Lisbon in 2000. The calculation of potential benefits distinguishes between the private and social effects of a reduction in the dropout rate.

The findings of the Groot and Maassen van den Brink (2002) study show that, for an individual pupil, the return on obtaining a diploma is between EUR 2,530 and EUR 8,032 higher than on leaving school early. The public return of cutting the dropout rate by half varies from just under EUR 55 million to EUR 166 million annually, with the most realistic variant being a return of EUR 123 million annually – which averages out at EUR 12,300 per dropout. The potential benefits therefore far outweigh the cost of one year of education, which is approximately EUR 6,000.

Insight into the effects of business-related training has grown over the past years, though research findings in this area do not all point in the same direction. Many studies conducted around the world have shown that the return on investing in business-related training is high. While this finding is confirmed in a few of the Dutch studies, others of them have measured only slight effects.

Applications of research into education's public and non-monetary returns are primarily interested in measuring the effects of a year of education, regardless of the content and/or level taught.

Groot and Maassen van den Brink (2003, 2007a, 2007b) and Groot, Maassen van den Brink and Van Praag (2007) investigated the question of what the revenue-maximising and prosperity effects of educational investments are in the areas of health, criminality, social security and citizenship. They found that education contributes to a reduction in unemployment, criminality and such unhealthy behaviours as smoking and excessive alcohol consumption. Many of the factors that make people unhappy occur with greater frequency among those who are less educated than among those who are more educated. Groot and Maassen van den Brink (2006) determined that those with little education are six times more prone to heart attacks and chronic illnesses like diabetes when compared with those with more education. Only alcohol use diverged from this trend, with the highly educated drinking more, on average, than the less educated, though excessive alcohol use is most prevalent among less educated youth. Finally, there is a higher incidence of violent crime among those with less education. Other forms of criminality are also more prevalent amongst people with less education. Only tax fraud is more common among those with more education. On the basis of these findings, Groot and Maassen van den Brink (2003) estimate that the total value of the prosperity affects of one year of education are between EUR 3,732 and EUR 4,812 per year, per adult. The total prosperity effects calculated for society as a whole are therefore between EUR 46.6 million and EUR 53.6 million a year. These are the non-monetary returns of

education as expressed in monetary terms, and represent around 10% of the total GNP of the Netherlands. The revenue-maximising effects of one year of education on healthcare, criminality and social security amount to approximately EUR 1.7 billion annually, thus representing a savings of almost 4% of the total costs in these three areas.

New opportunities

A shortage of teachers is being predicted for the coming years, and is being estimated by some to rise to 100,000 employees. We need effective strategies for preventing this looming threat. Options to consider include compensation and compensation differentiation, recruitment of lateral-entry teachers, promotions, careers in education itself, upgrading of the teaching profession and so on. These interventions can be assessed in terms of their effectiveness and cost effectiveness.

When considering alignment between education and the labour market, the most obvious place to start is the connection between formal daytime education and the first job that follows immediately after graduation. One of the problems we see here is that of early school leaving. A wide range of initiatives has been specifically designed to reduce the number of dropouts. Evaluation of the effectiveness and cost effectiveness of these measures will be among the Institute for Evidence-Based Education Research's activities.

Education/labour market alignment also relates to the sphere of life-long learning. Evaluation of the effectiveness and cost effectiveness of various features of life-long learning – business-related training programmes, adult education, etc. – will be addressed in the research institute. The ultimate objective is the development of evidence-based training, comprising – similar to evidence-based education – a body of training interventions based on insights gleaned from scientific research. Activities will also include writing review studies and conducting meta-analyses aimed at systematising knowledge about the effectiveness of business-related training and transferring that knowledge to the relevant users.

Investigation of the 'black box' recording of a year of education is absolutely vital. Research into the societal effects of different educational structures (non-monetary effects) and of specific educational interventions (as described in Focus Area 1), are equally essential. Additional research will have to focus on identifying and quantifying causal links. Much of the research carried out to date has focused on establishing coherence. Yet it is only on the basis of proven causal links between education and health, criminality and social cohesion that education policy and educational interventions will be able to introduce improvements in the areas mentioned. An important question to address is how the causal link progresses. Reyes-Garcia et al. (2007) argue that 'patience' and the willingness to delay immediate satisfaction of needs are two essential factors in this respect.

Focus Area 3: Synthesis and integration of scientific production and the development of a virtual library of 'evidence-based' educational interventions

Summary

Further priorities of the research institute – in addition to knowledge production – are to gather knowledge and make knowledge accessible. Much has in fact already been published, both nationally and internationally, on the effectiveness and cost effectiveness of educational interventions. What remains to be done, however, is to make the findings of this research available, to systematise it and to make it accessible for use in education practice. It is precisely these aims that are addressed in Focus Area 3.

The Dutch Education Council's report 'Towards more evidence-based education' argues in favour of a digital service point where research data about what works and what

does not work is made accessible in the form of, amongst other things, reviews (conceptualised by the Education Council as a website on ‘education quality’: www.onderwijskwaliteit.nl). In her response to the Education Council, the Minister of OCW wrote that she would investigate whether “... a new, integral facility, analogous to similar facilities in other countries, is more effective and more efficient”. The Minister went on to say that “... a facility of this type not only serves as a ‘portal’ for new scientific insights, but can also fulfil the role of stimulus and support in the application of those insights” (Lower House, session year 2006-2007, 30800 VIII, no. 79). The Focus Area concerned with ‘a library of evidence-based educational interventions, synthesis and integration of scientific production’ seeks to achieve precisely this.

The Cochrane Library fulfils this function in the healthcare field, acting as a repository for research into the effectiveness of healthcare interventions. The Cochrane Library collects research findings about, amongst other things, the effectiveness and cost effectiveness of interventions and about the quality of intervention-effectiveness research itself. The Cochrane Library also publishes reviews on the effectiveness of interventions in various areas. These reviews serve in turn as the basis for setting up protocols and guidelines for evidence-based medicine. The most important goal of the Cochrane Collaboration is to facilitate scientifically founded decision-making about healthcare interventions. Individual Cochrane centres support the processes of compilation, updating, dissemination and use of the Collaboration’s and other bodies’ systematic reviews.

The Campbell Collaboration (C2), an institution with ties to the Cochrane Collaboration, was established for the social sciences several years ago. Its mission is “... to prepare, maintain and disseminate systematic reviews of studies of social interventions, and to make their findings accessible to decision makers and the general public. We acquire and promote access to information about trials of social interventions. C2 builds summaries and electronic libraries of reviews, as well as reports of trials for policy makers, practitioners, researchers and the public”. The Campbell Collaboration engages in policy advice in the areas of social science, behavioural science and education (<http://www.campbellcollaboration.org/>).

Organising reviews and meta-analyses is especially important as no one research finding can ever really provide definitive proof. Moreover, research in the field of education oftentimes generates conflicting findings: whereas one study finds a measurable effect, the other finds none or an opposite effect. Sometimes these contradictions reflect reality, while at others they can be explained by differences in the random sample set-up, in the measurement instruments or analysis techniques used and so on.

As is true of any technique used in research, there are a number of criticisms made against meta-analysis. Two of these are: 1) meta-analysis ignores qualitative information since it averages out effects across studies and 2) research is best evaluated by a specialist who takes a reflective approach to weighing and evaluating research findings. This second point of criticism can be dealt with by means of written review studies. When considering the first point, we would do well to consider that even the most impeccable studies are often subsequently disproved. Ioannidis (2005) shows, for example, that articles cited with great frequency (i.e., more than 1000 times between 1990 and 2003) are often refuted or displaced by later studies in which stronger or broader effects are measured. One of Ioannidis’s (2005) most remarkable findings is that 83% of studies that rely on survey data are eventually refuted by other studies. Among studies based on controlled experiments – a randomised controlled trial (RCT) – however, ‘only’ 32% were later refuted. What Ioannidis’s (2005) research makes clear is that survey research is more prone to disproval than are the qualitatively superior controlled trials. The quality of survey research is lower because it is almost always impossible to keep every single possible disruptive factor constant, unlike in controlled trials.

An additional finding was that research outcomes based on small sample groups were oftentimes impossible to replicate.

One lesson to be learned from Ioannidis's research is that more attention needs to be paid to meta-analysis and review – in other words, to research in which the available findings are subjected to systematic analysis. Policy decisions tend to be based on the findings of studies considered by fellow practitioners to be 'qualitatively the best'. As Ioannidis makes clear, however, qualitatively superior research is also frequently subject to disapproval, certainly where survey research is concerned. Whenever there is doubt as to which findings are accurate – those of the original study or the conflicting conclusions of the replicate study – a meta-analysis of all of the available data offers a viable solution, particularly in cases where features of the research plan (such as the type of plan, population, results measurements used, etc.) were explicitly included in the research model as possible predictors of variations in the research findings.

Pedagogics is characterised by a broad-ranging interest in meta-analysis and review studies. Nevertheless, meta-analysis and review studies that specifically address the cost effectiveness of educational interventions are relatively scarce. The Institute for Evidence-Based Education Research will contribute in two ways:

- 1 It will organise educational intervention cost-effectiveness meta-analyses and review studies.
- 2 It will gather and make available both the meta-analyses and review studies referred to in (1) and existing meta-analyses and review studies.

Activities in this Focus Area will target:

- the development of the evidence-based education methodology,
- the drafting of systematic written reviews, overviews and meta-analyses of the cost effectiveness of educational interventions,
- the dissemination of information about effectiveness and cost effectiveness of educational interventions to schools, parents and the government.

The result of these activities will be a Cochrane-model library for educational interventions, in which all effectiveness research – both national and international – will be collected, systematised and assessed in terms of quality. It will then become possible to formulate practical guidelines for effective and cost-effective interventions. Various activities will be designed to stimulate interest in knowledge about effective and cost-effective educational interventions among involved stakeholders, including schools (teachers at various levels, school administrators), parents and the government. Different types of media outlets will be developed and implemented for this purpose, including a website (www.onderwijkwaliteit.nl) symposia, newsletters, newspaper articles and so on.

The overall educational infrastructure as it currently exists in the Netherlands places no special focus – as the research institute expressly will do – on the innovation process or on evidence-based practice. The same can be said of the integral approach to the societal context in which education operates. The combination and concentration of top-level research in this area represents one of the research institute's key added-value components.

Collaboration with international partners will be instrumental in developing the proposed library of evidence-based education. The UK and US institutes discussed above – the CEM Centre and the WWC – will be amongst those to be approached.

Overview of existing applications in the Netherlands

A limited number of meta-analyses have been performed in the field of education economics in recent years. Among them are Groot and Maassen van den Brink's (2000) meta-analysis of overeducation, which found that whereas the return on one year of mandatory schooling is high, the return on one year of overeducation, while still positive, is significantly lower. They also determined that research findings are sensitive to the way in which overeducation is defined and that economic trends and demographic factors have an impact on the proportion of the population that is overeducated and on the return on one year of overeducation.

Furnee, Groot and Maassen van den Brink (2007b) present a meta-analysis of the effect that education has on health. Their study leads them to conclude that "The results of the meta-analysis show that the QALY weight of a year of education is approximately 0.036. Some tentative calculations suggest that the cost-benefit ratio of investments in education on health is highly positive. For public policy this implies that a more integrated approach to education and health policies should be taken".

In their meta-analysis of the effect that education has on social capital (trust in others and participation in social organisations), Huang, Maassen van den Brink and Groot (2007) conclude that "... one standard deviation of years of schooling accounts for 12-17 percent of the standard deviation in social trust and social participation. These results lend support to the argument that education plays a crucial role in the generation of social capital. Further analysis confirms the existence of a relative effect of education on social participation, and of a reciprocal mechanism between the dimensions of social capital. The analysis also suggests that the erosion of social capital during the past decades has coincided with a decrease of the marginal return to education. Finally, we find differences in the return to education between US and other nations, and variations for different education attainments".

The overview published by Scheerens and Bosker (1997) presents the results of a series of meta-analyses carried out by Bosker and Witziers. They are able to show that the empirical basis for claims of effectiveness is in some cases reasonable (for example in respect of conducting frequent evaluations of pupils' learning progress and of an achievement-oriented school culture), but in other cases absent (for example in respect of pedagogical leadership). Though the size of these effects tends to be quite modest (0.20), the authors argue that the societal implications are considerable: improved educational structure would affect the cohort of all 200,000 pupils in a given age group annually. One of the shortcomings of these meta-analyses is their failure to offer any insight into the cost effectiveness of the interventions.

New opportunities

Emphasis must now be shifted towards the meta-analysis of educational interventions, and the meta-analysis focusing on the cost effectiveness of educational interventions in particular. In addition, we should open the 'black box' of data on one year of education and take a closer look at causal relationships and the effects of different levels and types of education.

Focus Area 4: Teachers Academy: an 'evidence-based education' academy

If evidence-based education is to gain general currency, teachers will have to know what it is and how to use it. This includes familiarity with research and research methods. Teachers must be able to gauge the value of research findings, have a degree of insight into research processes and be able to assess the methodological quality of research and the research set-up. The 'evidence-based education academy' focus area envisions developing and offering courses (including continuing education courses) for teachers in primary, secondary and higher education. Teacher training programmes will be assisted in developing curricula that

pay specific attention to research organisation and execution and to working with evidence-based education. The research institute will seek links with existing initiatives (including the Dutch Teacher College) throughout the Netherlands. As a partner in the evidence-based education research network, Maastricht University will contribute towards the development of a Teacher Academy, to which end the university will draft a separate business plan. The role of the research network will for the time being be confined to that of social mediator, transferring research findings to education practice within context of the Teacher Academy.

4. THE ADDED VALUE OF A TOP INSTITUTE FOR EVIDENCE-BASED EDUCATION

The ‘School Agenda 2010’ long-range exploratory education study jointly organised by the Advisory Council for Science and Technology Policy (AWT) and the Research and Development Council Sector Conciliation Committee (*Commissie van Overleg Sectorraden onderzoek en ontwikkeling*, COS), has ascertained a steadily increasing gap between Dutch education research and the real-world problems and questions confronting educational practitioners. The Institute for Evidence-Based Education Research aims to close this gap. TIER will bring together outstanding researchers – scholars with an outstanding record of research experience – in the fields of pedagogical research and education economics, who will collaborate on major research projects of manifest practical and social relevance and on transferring research insights to the relevant stakeholders. In so doing, the research institute will build a bridge between research, practice and policy in the field of education.

The educational knowledge infrastructure should be envisioned as a chain forged from the following links: research – curriculum development – innovation – implementation – guidance – evaluation – curriculum adjustment. All these different links are currently organised separately from one another, thereby hampering the effectiveness of both research and innovation in education. Comprehensive overviews of effective educational interventions (describing which innovations do/do not work) are also lacking. The Institute for Evidence-Based Education Research will link research, innovative interventions, implementation and evaluation of interventions together as part of a coherent process.

Evidence-based educational interventions represent the specific added value of the research institute. Evidence-based interventions contribute to improving the overall quality and level of education. High quality teaching is a crucial link that will help to boost the Netherlands’ competitive position in the international knowledge economy.

Education is a key factor in the knowledge economy, whether considered from the perspective of the individual or from that of society as a whole. Empirical research has found that countries with a more highly educated population are more productive. Increasing the average level of education by one year results in an estimated 8% increase in production, while an additional year of education means an average 5-10% increase in an individual’s earnings over the course of his or her entire professional career. Alongside the monetary gains are benefits relating to health, safety and the environment. Research shows that educational returns differ from country to country, depending on the quality and efficiency of educational systems (for an overview, see Groot and Maassen van den Brink 2007). Clearly, enhancing educational efficiency can help to effect higher economic growth and prosperity. Raising the general level and quality of Dutch education can likewise lead to increased prosperity. It is precisely for these reasons that the government has placed such a keen focus on a strong education system, expressed in the government’s pivotal role in educational funding and implementation.

5. EMBEDDING THE INSTITUTE

Capacity development is key

Currently there is only a very limited amount of research capacity available among educationalists and education economists specialised in either the area of educational interventions and education policy assessment or that of the performance of systematic reviews and meta-analyses of effective and cost-effective educational interventions. One reason is that thorough research assessments are highly labour intensive. Aside from the field experiments listed above, a range of studies with a quasi-experimental set-up are also already waiting – and queuing – in the wings. The sooner these studies are carried out, the sooner the resulting findings can be used to implement policy improvements and to modify or terminate less successful policies. Examples of such studies include investigations of the effects of expansion, inter-institutional competition and the creation of asylum seekers' centres.

Appointing a number postdoctoral researchers and PhD students to work within the consortium of knowledge institutes will create the critical mass needed to give this key theme a powerful impulse. There is no question that the costs entailed will be more than made up for by the savings that can be gained from a more cost-effective education policy.

The need for greater data infrastructure capacity

Assessment research depends on reliable data. Development of evidence-based education requires that data be collected in an effective and efficient manner, which will also serve to minimise the burden on educational institutions. As such, the research institute will have to develop a policy and strategy for data collection. This policy must be based on the long-term demand for assessment research data and on the capacity of schools and educational institutions for supplying this demand.

A high quality data infrastructure is a key requirement both for the primary task of data collection and in respect of the data itself (in the form of research findings to be used in systematic reviews and meta-analyses and a databank or library containing overviews of evidence-based educational interventions)

The current approach to collecting education data from various locations has shown that access is not always easy, and at times, impossible. Measurement errors and non-participation can obscure the results of even the most carefully designed trial. A successfully operating research institute therefore requires an infrastructure in which relevant and high quality research data can readily be accessed. The education number (*onderwijsnummer*, a personal registration number allotted to pupils when they first enrol in school) is intended to lay the foundation for this data infrastructure. This personal number will make it possible to continue to trace pupils over the long term, thus providing a picture of their experiences in and after education. Data collected within the framework of the new educational cohorts organised under the auspices of the NWO and the Programme for Educational Research (PROO) can be used for this purpose. This new cohort – named COOL 5-18 – brings the existing Dutch cohort studies in primary and secondary education (specifically: PRIMA, PRIMA-VO and VOCL) together. COOL 5-18 will integrate thrice-yearly measurements in primary and secondary education with education number data. Assessment will make the maximum possible use of data collected in COOL 5-18. Statistics Netherlands (CBS) will be responsible for integrating COOL 5-18 data into the Social Statistical Record (*Sociaal Statistisch Bestand*, SSB), to which a diverse range of other databases will be linked. It must still be determined whether the proposed Institute for Evidence-Based Education Research will gain licence-holder authorisation granting access to the anonymised SSB data, similar to, for example, the Netherlands Institute for Social Research (SCP).

Research institute partners

The Institute for Evidence-Based Education Research will start out with three partners: the University of Amsterdam ('SCHOLAR' group led by Prof. H. Maassen van den Brink and Prof. H. Oosterbeek), Maastricht University (group led by Prof. W. Groot) and the University of Groningen (group led by Prof. R. Bosker and Prof. G. van der Werf). Close collaborative relationships (including in respect of staff) will be initiated with the Ministry of OCW, the NWO (specifically its MaGW, or Social Sciences, Division and the PROO) and the CPB. The CBS, with responsibility for the SSB, and centres of expertise that develop promising educational interventions (such as the Centre for Dutch Language Expertise – *Expertisecentrum Nederlandse Taal* – at Radboud University Nijmegen and the Centre of Child Expertise – *Expertisecentrum voor het Jonge Kind* – still in development) will be engaged in designing prospective research programmes. The research institute will function as a research network, and will seek to collaborate with leading, relevant research groups.

University of Amsterdam (UvA)

In a recent NWO initiative, a specially selected panel of leading international scholars performed an assessment of the SCHOLAR programme. As the panel states in its assessment report, "The committee has been very impressed by the performance of the SCHOLAR group. The output in terms of publications and activities is outstanding and the public returns are multiple. Firstly, good scholars and excellent graduate students have been attracted and trained, who now have promising academic career prospects. Secondly, excellent topics have been addressed. Thirdly very important policy relevant issues have been researched. (...). SCHOLAR has become well known both in Europe and in the United States of America and is seen as a strong group by international standards. It can be said that the project has a very good outcome considering the investments and therefore be good value for money. As mentioned before, the public returns of the project are high, considering the training of good scholars and the high output of policy relevant research with high academic standards".

It is in this tradition of excellent scholarship – a tradition shaped over the past ten years by a number of individuals involved in the research institute – that the Institute for Evidence-Based Education Research will likewise carry out its work. The Scientific Director of the interuniversity institute is Prof. Henriëtte Maassen van den Brink; Prof. Hessel Oosterbeek and Dr Dinand Webbink are the research leaders for the UVA and the CPB.

Maastricht University (MU)

A new research group, led by Prof. W. Groot and Prof. H. Maassen van den Brink, will be created within Maastricht University. In his capacity as MU research leader, Prof. W. Groot will take responsibility for the development of evidence-based education. This new research group will maintain ties with the Brain and Cognition group (Prof. J. Jolles, MU) and the Research Centre for Education and the Labour Market (ROA) and Social Innovation research groups (Prof. Lex Borghans, MU, and Prof. T. Dohmen, MU).

The new research group will be organised in the Department of Economics of the Faculty of Economics and Business Administration (FEBA) at MU. Alongside its evidence-based education research activities, the group will also engage with the MU Teacher Academy.

University of Groningen (UG)

The University of Groningen's Institute for Educational Research (GION) has pursued fundamental and applied research since 1972. Activities in its Research and Evaluation of Educational Effectiveness (Prof. Roel Bosker) programme, which received a positive assessment in the most recent research review, concentrate on adding to our knowledge of

what works in education and why, with a specific emphasis on productivity: do pupils perform better within alternate educational structures? GION has contributed on many occasions to policy programme assessments (including policies on eliminating educational disadvantage, class size and quality, basic curriculum) and is currently conducting assessments of the modernised foundation stage of secondary education and of the second phase of secondary education. These assessments are designed to allow cross-comparison of the effectiveness of policy implementation variations.

GION is one of several institutes charged with carrying out the COOL 5-18 cohort study, with a specific focus on the CITO-test and tracing pupils' progress once they enter secondary education.

Netherlands Bureau for Economic Policy Analysis (CPB)

Some ten years ago the CPB launched an initiative to research knowledge production and the influence that knowledge has on economic growth and prosperity. This research is currently being conducted within its Growth, Structure and Knowledge Economics sector (Dr D. Webbink). Within this sector, the Education and Research programme looks at human capital creation and its public returns, while its Productivity and Innovation programme explores how human capital effects productivity. Both programmes issue overviews of the current state of research and conduct policy assessments (based on natural trials). Its recent publication 'Promising Knowledge Policy' (*Kansrijk Kennisbeleid*) provides an overview of policy interventions in education whose potential for raising prosperity is backed by solid empirical research data (trials or quasi-trials). This study also served as a basis for analysing the individual education policy proposals framed by various political parties for the 2006 Dutch elections.

International cooperation

Institutes comparable in focus to TIER already operate in English-speaking countries. These include the CEM Centre in the UK and the WWC in the US, with which alliances will be sought. There has also been intensive contact with Columbia University (Prof. H. Levin) in the US, where similar research is being conducted on the cost effectiveness of education and educational assessment. The research institute is also in touch with Johns Hopkins University in Baltimore (Dr R. Slavin) concerning the use of Randomised Controlled Controls for the evaluation of educational interventions. Other relevant contacts abroad include the Centre for Economics of Education (Prof. Stephen Machin, London), the Education Research Section (Prof. Cecilia Rouse, Princeton University) and the European Expert Network of Economics of Education (<http://www.eenee.de>).

Embedding in the Ministry of OCW and 'the field'

The success of TIER depends on its close working relationship with and embedding in the Ministry of OCW. This is the only way to guarantee that its research both conforms to standards of scientific quality and also makes valuable and relevant societal contributions. Interaction with the Ministry of OCW ensures that research reflects policymaker needs. Embedding in the field of education is likewise essential, for the very same reasons. How such embedding is to be achieved is described in what follows below.

6. THE ORGANISATION

At its inception, the Institute for Evidence-Based Education Research will have three partners:

- University of Amsterdam (SCHOLAR group, Prof. H. Maassen van den Brink (Scientific Director) and Prof. H. Oosterbeek)
- Maastricht University (Prof. W. Groot and Prof. H. Maassen van den Brink)
- University of Groningen (GION, Prof. R. Bosker and Prof. G. van der Werf)

Collaborative alliances will also be created with:

- Ministry of OCW (Knowledge directorate)
- NWO (MaGW and PROO)
- CPB (Dr Dinand Webbink and Prof. C. Teulings)

In addition, the CBS, with responsibility for the Social Statistical Record, and expertise centres engaged in designing promising educational interventions (such as the Centre for Dutch Language Expertise at Radboud University Nijmegen and the Centre of Child Expertise (Prof. W. Meijnen)), will be asked to participate in developing the institute's research programme. Cooperation will also be sought with outstanding research groups in relevant areas (the criterion being that the research group has been awarded an assessment score of at least 4 on a scale of 1-5) and with NICES.

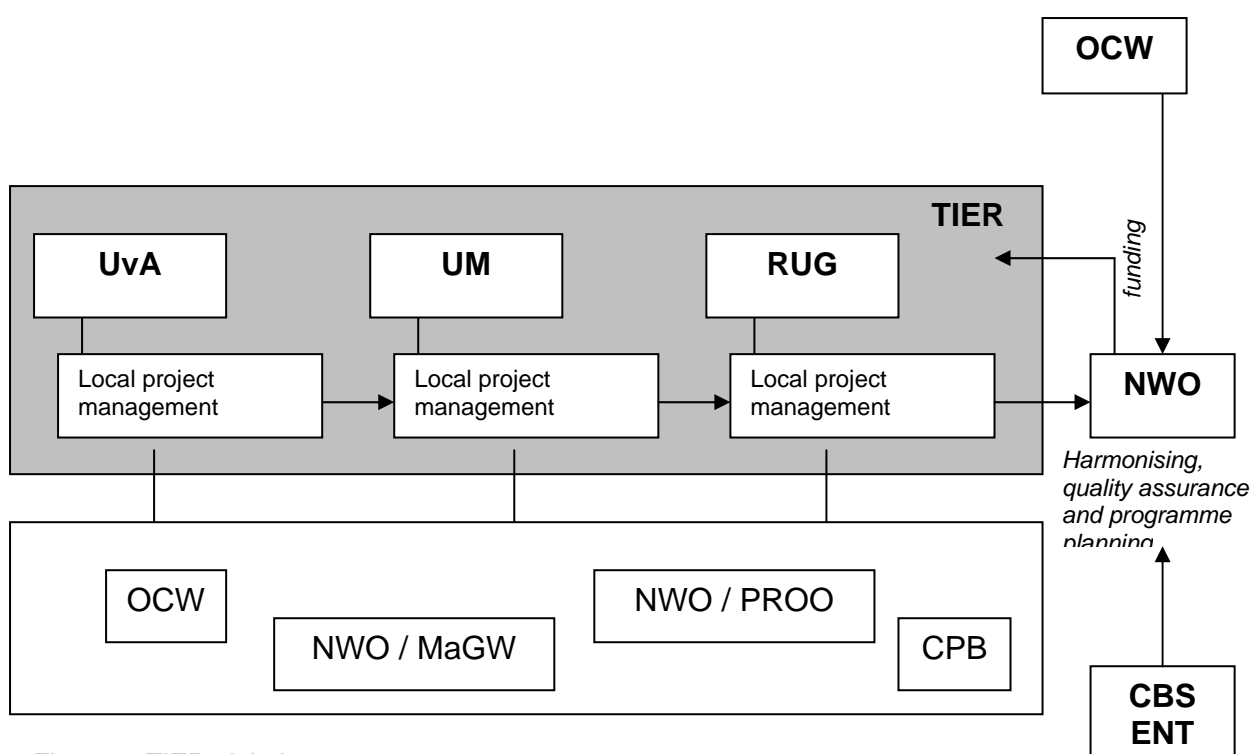


Figure 1: TIER global structure

TIER's full organisational structure is to be further specified in consultation with the three partners and the NWO.

Organisational structure

The institute's organisational structure is designed along the lines of a foundation (*stichting*), with daily management by a scientific director and general management by a board of directors. It should be noted, however, that TIER has no legal status. Institute staff will remain in the employ of one of the knowledge (or other) institutes.

The organisational structure conforms to recommendations issued by the NWO. Programme managers will report to the Board of Directors. A Scientific Advisory Council and a Users Council are to be instituted at the research level. Research themes will be developed by the professor/programme leaders in consultation with the professor/director.

Daily management

The scientific coordinator (the professor/director or Scientific Director) will be charged with daily TIER management. The Scientific Director will be responsible for, amongst other things, drafting the annual budget and financial and scientific accountability. The professor/director and the programme leaders will serve as representatives on behalf of the institute, will safeguard the scientific and social character of its activities and will have final responsibility for all scientific activities and the social valorisation of its research findings.

The Board Of Directors

TIER's Board Of Directors will be composed of representatives from those parties whose participation involves a fundamental financial responsibility and an input in the institute's activities. The Board, led by an independent chair, will act as the general managing body. The professor/director and programme leader will be called upon to provide periodic reports to the board.

The Board is envisioned as consisting of representatives of the NWO, the three partner universities and the CPB. The board will be led by an independent chair. Board membership will be for a period of five years, and each member may be reappointed once only. The Board will meet on average three times each year. Its general duties will be to supervise daily management (the scientific coordinator and the programme leaders), to tender solicited and unsolicited advice to Council of Directors and to initiate links between TIER and the target groups they represent.

The Recommendation Committee

Recommendation Committee members will act as ambassadors on TIER's behalf. The committee will meet once a year.

Programme leaders

One programme leader will be appointed for each of the four focus areas. The programme leader is charged with directing their research group's activities. The professor/director and programme leaders will work as active links between universities, departments, the NWO, educational institutions and other public partners. Their duties fall into four main categories:

1. portfolio management for studies underway at universities,
2. initiate, monitor and implement TIER's mission,

3. conduct independent research and supervise research staff in the relevant focus area,
4. contribute to the dissemination of knowledge.

The name

The name chosen for the institute is the 'Top Institute for Evidence-Based Education Research' (TIER). Both this name and the logo reflect the 'interconnection' between the participating universities, between education policy and scientific research, between education practice and research and between individual researchers and research groups. The name 'TIER' meets the following criteria:

- it sounds catchy,
- it is equally easy to pronounce English,
- it is recognisable.

Communication plan

A communications agency will be contracted to design a communication plan optimising the timing of and message conveyed at TIER's launch. Specific attention will be paid to:

- Target group communication
- Internal communication
- Use of communication tools such as the Internet, etc.

The following press release will be issued to announce the launch of the interuniversity network:



Press release

Wednesday, 7 May 2008

New interuniversity Top Institute for 'Evidence-Based Education' Research

The University of Amsterdam, Maastricht University and the University of Groningen have joined forces to launch the *Top Institute for Evidence-Based Education Research* (TIER). This interuniversity institute aims to use scientific research in 'evidence-based education' to contribute to raising education quality standards in the Netherlands. TIER's core activities will include the development of effective and cost-effective educational interventions and integrating scientific research and insights. The new research institute will hold an official inauguration conference in The Hague on Wednesday, 14 May.

Dutch Minister of Education, Culture and Science (OCW) Ronald Plasterk will attend the inauguration conference and deliver a brief speech. Lectures will be given by Prof. Eric Hanushek (Stanford University) and Prof. Stephen Machin (University College London, London School of Economics and the Centre for the Economics of Education), both of whom are leading scholars in the field of evidence-based education.

Evidence-based research is rooted in the idea that educational policy and practice should be based on the best evidence about what works (proven effect). Supplying such evidence means that individual educational interventions and education strategies must be subjected to scientific assessment before they can be recommended and/or implemented on a large scale.

TIER has been set up with the express mission of conducting outstanding research in the field of evidence-based education and of promoting access to research findings to benefit education practice and policy. The institute aims to develop knowledge with practical applications for the Ministry of OCW (for policy preparation and assessment), education practice (in the allocation of resources and pedagogical decision-making) and parents and pupils (when selecting a school or programme of study).

The institute has four areas of focus:

- development and assessment of effective educational interventions,
- exploration of the societal context of education, with a central emphasis on societal facets of education and on the relationship between education and the labour market,
- creation of a portal connecting the academic research world and the policy world of the Ministry of OCW,
- development – in consultation with field professionals – of a Teacher Academy to facilitate the transfer of research findings to teachers in primary, secondary and higher education.

These four focus areas cover the entire spectrum of life-long learning, from preschool education through primary, secondary, vocational and higher education to continuing education and professional training.

The institute will work in close cooperation with the Netherlands Bureau for Economic Policy Analysis (Growth, Structure and Knowledge Economics sector), various ministries, the Netherlands Organisation for Scientific Research (NWO) and relevant national and international research groups.

TIER links up with the Ministry of OCW's policy indicator of 'Evidence-Based Policy' and the NWO's strategy memorandum addressing the theme of education.

Programme of the inauguration conference
15:45 Doors open

- 16:00 Welcoming speech by Dr R.H.A. Plasterk, Minister of OCW
16:15 Prof. E.A. Hanushek: *The Value of Evidence for Education Policy*
17:00 Debate
17:15 Prof. S. Machin: *Evidence Based Education Policy –
The Case of Economics of Education Research in the UK*
18:00 Debate and close
18.15 Reception

Time and location

The conference will take place on Wednesday, 14 May, starting at 16:00 in the Green Room (*Groene Zaal*) of Sociëteit De Witte, Plein 24, The Hague.

Note for editors:

For more information, contact Prof. Henriëtte Maassen van den Brink (UvA), telephone: +31(0)20-525 4311, e-mail: h.maassenvandenbrink@uva.nl. Members of the press who would like to attend the inauguration conference on Wednesday, 14 May are requested to sign up in advance by sending an e-mail to: s.m.postma@uva.nl.

7. MAPPING THE INSTITUTE'S GROWTH

The Top Institute for Evidence-Based Education Research will be established for an initial period of five years and an assessment will be carried out within this period. Each year, the scientific coordinator, working in cooperation with the programme leaders, will issue an annual report accounting for the institute's financial and scientific position and activities. The financial departments of participating partners will each be required to furnish an auditor-approved financial statement to this end.

The NWO will commission a panel of leading international scientists to conduct a zero measurement at the launch of the institute's activities. An NWO interim review will follow after a period of three years, thus allowing operations decisions to be taken by participating parties in the intervening period. Three years will be sufficient time to be able to measure at least some of the impact that TIER's activities have made. At this time, the NWO MaGW will evaluate the institute in terms of:

- Impact: how has the institute influenced education policy and education practice?
- Quality: do the institute's findings meet the scientific and public quality standards that apply to a high calibre public institute?
- Relevance: does the institute fulfil a specific scientific and societal need?

TIER must be able to furnish tangible results in each of these areas. The interim review will be carried out in conformance with NWO guidelines. Responsibility for internal quality control will be shared by the programme leaders, scientific professor/director and Board of Directors. The level of quality the organisation is able to achieve will be entirely dependent on having the right people in the right place, which in turn demands having a transparent staff policy in place, with agreements about assessments and performance and evaluation interviews. The creation of an inspiring and results-oriented work culture will be another important criterion for quality.

8. FOLLOW-UP STEPS

The organisation of TIER as a high calibre research institute requires that the following actions be undertaken:

- Obtain the Ministry of OCW's subsidy ruling in accordance with regulations.
- Obtain participating parties' action plans and letters of intent. Agreements will be made to establish participating parties' administrative and financial roles. Further agreements with the participating universities will specify their contributions to the research themes and curriculum. These agreements will be set down in a 'letter of intent' as well as in the action plans of the participating universities. Provisions have been made for the institute to start operations informally as of 1 January 2008, and formally as of 1 May 2008.
- Establish the TIER Board of Directors and invite members to sit on the Recommendation Committee.
- Design a communication plan and take a decision on the institute's name.
- Develop the TIER website.
- Organise a zero measurement in accordance with NWO guidelines.
- Mid-2008: Board of Directors to finalise the research programme and the programme for knowledge dissemination.
- First quarter 2008 (14 May): ceremonial launch of the institute.

9. APPENDIX: ACTION PLANS

The research plans as represented here are based on the agreements made by the UvA/MU/GU programme leaders and the scientific coordinator during the formation meeting of 25 March 2008, and are or are still to be coordinated with the relevant research groups operating within various universities, the ROA, NSI, PROO, BOPO, NICES, policy directorates the Ministries of OCW and SZW and the relevant ministries themselves.

The research projects have been formulated within three different action plans as developed by the three participating universities. These action plans will be available as of 1 May 2008. The action plans provide brief specifications of the research questions and methods, which will be further elaborated by the relevant programme leader in consultation with researchers engaged in the project and, if desired, with other relevant parties in the fields of policy and education. Certain projects focusing on education and the labour market will be elaborated in coordination with NICES; these projects will be carried out within the Education and Labour Market research programme as designed by professors Groot and Maassen van den Brink. This research programme will be presented to civic parties in May 2008.

TEACHER ACADEMY

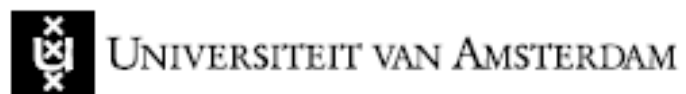
Since this component relates solely to the societal transfer of research results to policy and education in given areas of practice, as carried out within the UvA/MU/GU research network, it requires a separate business plan that links up with the MU Teacher Academy.

FES/ EXPERIMENTATION FUNDS

Working together with educational practitioners, and in accordance with applicable rules, the UvA/MU/GU research network will submit research proposals to compete for funding from the prospective project known as OnderwijsBewijs ('Education Evidence').

INTERNATIONAL COOPERATION

The abovementioned research projects will be compared with research findings from other countries, insofar as possible and relevant for the research topic. International cooperation pertains in particular to the groups named in the original business plan. Communication has started with Columbia University to stimulate intensified cooperation in joint studies and activities.



UvA research proposals

The research proposals described here are grouped according to the activities in which future TIER researchers are involved. The TIER-UvA projects will be carried out under the direction of Prof. Hessel Oosterbeek, Dr Dinand Webbink (CPB) and Prof. Henriëtte Maassen van den Brink, who have been appointed by the Faculty of Economics and Business at the University of Amsterdam.

Each of these projects is several years in scope and is scheduled to start in 2008. In each case the research topics cover multiple areas within the field of education (preschool, early school, primary, secondary, professional and higher education).

Each of the projects addresses 3-5 topics. Work is to be carried out by PhD students (in the case of four-year projects) or post-doc researchers (in the case of two-year projects). The projects are intended to result in knowledge products that can be applied towards policy and/or education practice and towards articles for scholarly journals. The PhD student-led research projects are additionally required to result in a doctoral thesis. Project development will be carried out jointly with the engaged researchers and, insofar as possible, with relevant policy directorates.

Projects in Focus Area 1: Development and evaluation of effective educational interventions and innovations

Project 1: Effect of ethnic minority classes

It is a commonly-held view that school segregation into different ethnic groups has negative effects on the academic performance of pupils at predominantly ethnic minority schools (*zwarte scholen*). Empirical research seems to confirm this view: the greater a school student body's proportion of ethnic minority pupils, the poorer the performance of Dutch and ethnic minority pupils alike. This 'evidence' has been used to support policy aimed at avoiding segregation in schools.

The observation that pupil performance, regardless of ethnicity, declines as the proportion of 'black' ethnic minority students rises does not really provide any evidence of causal effect at all. It is highly likely that pupils who attend ethnic minority schools differ from the average pupil in ways that are both easy and impossible to observe. The effect of ethnic minority schools that is measured in such cases is in fact that of a pre-existing difference between pupils who attend these schools and other pupils.

This project uses a new approach to distinguishing the peer effect of ethnicity from the selection effect in individual schools. Secondary school transition-year pupils will be assigned at random to classes with differing proportions of ethnic minority pupils. For example: at a given school, 50% of the new pupils belong to an ethnic minority. Instead of distributing this group out evenly over all classes, transition classes will consist of 30%, 50% and 70% ethnic minority pupils, respectively. Lots will be drawn to assign pupils to specific classes. At the end of the first school year we will investigate the effect that the percentage of ethnic minority pupils has on overall pupil performance in each respective class.

This project will require participation by around ten secondary schools with mixed-race student bodies, and could be launched in the next school year. Research findings will become available one year later. Should the number of schools interested in participating be too few this year, the project can be delayed by one year. Should there be insufficient cooperation, it may be necessary to consider forcing schools to participate.

Project 2: Effect of market forces I: school selection

Economists have been particularly strong advocates for bringing market forces to bear on education. They argue that forcing schools to compete with one another to attract pupils has a positive effect on school performance, as expressed in, among other things, higher achievement amongst their pupils.

The mechanism currently driving the market is the assumption that pupils (or their parents) will choose the school that is best for them. We will investigate whether this mechanism does indeed work by means of a study using the school lottery system. Various Dutch municipalities use a system of awarding school places by lottery when the number of applications exceeds school capacity. This means that a certain proportion of pupils will not be able to attend the school of their first choice. If their first choice does in fact represent the very best choice (economists' assumption), then being eliminated by a lottery should have a negative effect on the academic performance of this latter group of pupils. This effect can be measured by comparing the performance of pupils who were eliminated by lottery to those who were accepted in the same lottery.

This project has been designed such that it can also address qualitative variation between schools. In their current form, school rankings and Education Inspectorate assessments make it difficult to impossible to isolate the condition of school quality from pupil quality at that school. Such assessments say more about the sum total of all factors than they do about the school itself. By assigning comparable pupils at random through a lottery, these conditions are no longer linked. The pupils eliminated by lottery are in effect no different from those who are accepted; if their performance is significantly better or worse in their second-choice school than that of students accepted to the first-choice school in the same lottery, then this difference in performance can be ascribed to a difference between the schools (i.e. and not to any difference between the pupils).

This study will also provide insight into the rationale used by parents when selecting a school. Do they really choose the school that is best for their child? The research findings can also be used to validate school assessments issued by the Education Inspectorate. Should school rankings made on the basis of Education Inspectorate assessments deviate substantially from those generated by this study, it would indicate that the methods used by the Inspectorate take insufficient account of qualitative differences among pupil populations.

Project discussions have already taken place with the Social Development Department (*Dienst Maatschappelijke Ontwikkeling*, DMO) of the municipality of Amsterdam, which has confirmed that the necessary data does exist and could be made available for the purpose of this study. It is expected that research can begin later this year.

Project 3: Effect of market forces II: competition

Market forces assume that competition has a proportionate impact on school performance and therefore on pupil achievement. The more providers there are in a given service area (municipality), the higher the competition and, so the theory holds, the higher school performance is in general.

The idea that market forces/competition lead to better performance is based on an analogy with businesses operating in the private sector. Yet there are a number of very real differences between private sector business and publicly-funded schools. For example, in the private sector, inefficient businesses go bankrupt, such that only efficient businesses survive. This also gives businesses an additional stimulus to operate efficiently. Schools are different: it is very rare that a school is closed down for apparently failing to meet performance standards. In addition, there is no clear cut knowledge about what stimulates schools, school administrations or teachers to perform well. Private enterprises are motivated by profit,

employees by the promise of a share in what their performance achieves. Such mechanisms play no part in the school context.

The question, therefore, is whether more competition in education does actually contribute to higher performance among schools and pupils. This question will be addressed in this project, using data generated by the drastic reduction in primary schools during the 1990s. Changes to school closure norms resulted in the closure of around one-quarter of Dutch primary schools, with the average school size expanding correspondingly. The actual extent of this change differs from one municipality and school to another. Some municipalities experienced a far greater reduction in the number of schools than others, with a commensurate decrease in competition. The competition model posits that wherever competition has decreased most we will see the greatest overall decrease, or least overall increase, in school performance.

This study will rely on PRIMA data and administrative data about the school closure norms, the number of schools in each municipality and school size. This dataset contains information from years in which disparate school closure norms were in force, making it eminently suited for this project.

Project 4: Raising tuition fees

The possibility of raising tuition fees in higher education is very frequent topic of discussion. Countless convincing arguments (including economically-driven arguments) are presented in favour of higher student contributions. Higher tuition fees would heighten students' awareness of the social costs of higher education, thereby leading to more efficient choices on their part. Another common argument is that raising tuition fees would distribute the financial burden more fairly, given that low tuition fees can be seen as an implicit subsidy given by the average tax payer to the more educated segment of the population.

An argument often applied against raising tuition fees is that enrolment in higher education might decline as a result, and that this decline is likely to be concentrated in certain social segments. This argument deserves very serious consideration, particularly in view of the stated objective of raising the level of education among professionals, and of current policy aimed at integration of minority groups. Ultimately, however, it is of course an empirical issue: would a change in tuition fees really lead to a substantial change in higher education enrolment, and would certain segments of the population be more likely to be effected by such a change than others?

We therefore propose investigating the price elasticity of the demand for higher education by means of a trial in which groups of school-leaving examination candidates in senior general secondary education (havo) and university preparatory education (vwo) are offered a reduction in tuition fees. Different reductions would be offered, for example 10%, 25% and 50%. In each case the reduction would be offered for the entire duration of study. Given that the primary focus of this research would be on the behavioural responses of potential minority-group students, it is critical that such groups be adequately represented among the research participants. The trial will furnish immediate information about the effect that lowering tuition fees has on enrolment. By continuing to track each student over the course of their subsequent studies it will also be possible to determine whether lower tuition fees have an impact on student withdrawal rates and the duration of study. For, if a lower/higher tuition fee leads to a less/more motivated choice, then it is reasonable to conclude that lower/higher tuition fees will go hand in hand with higher/lower withdrawal rates and a shorter/longer total duration of studies (in this last case, because an additional year would cost less/more).

In order to conduct this trial we need the approval and cooperation of the Ministry of OCW and the IB-Groep. Given that student registration begins early in the year, the project cannot be launched until next year at the earliest (which would mean sending offers out in December 2008).

This project would require funding from the trials fund, for which a proposal will be developed.

Project 5: Effect of student lending on student progress

Many students have a part-time job in addition to their studies in order to pay for all or a portion of their costs of living. A commonly-held view/opinion is that having a job is detrimental to students' progress and that it would be preferable for students to take out higher loans and work less.

We propose to use the so-called Student Monitor (*Studentenmonitor*) – an annual representative random sample survey among students – combined with administrative data to determine whether taking out a student loan has a positive effect on student progress.

Various reports have found a difference in lending behaviour among students within the official term of a study programme and after that term is over (which is logical), but do not indicate links with progress made in any one year. The direction of the causal link between student lending and student progress is not immediately clear, because the additional financial freedom can be used variously to reduce time spent working in employment or to raise consumption. It is quite possible that such choices differ from one socio-economic group to another – which is to say that students from an advantaged social background may use loans to finance higher consumption, while students from less advantaged backgrounds use loans to facilitate their studies. This question is particularly interesting when considered in light of the recent increase in student lending.

Regression of loan amounts in a given year on student progress shows the correlation between lending and progress, but not the causation. Lending is determined in part by factors that in fact also have an effect on the speed of student progress, such as parents' level of education and students' own capacity. This problem can largely be left out of consideration, as the Student Monitor incorporates both background information about parents as well as final examination marks. The final examination marks can be taken as a measure of student capacity, to which the conditional of parent income could be added as an exogenous factor influencing student progress. Parent income can then be used as an instrument for lending. If we assume that income can also have a direct negative effect on student progress, then the effect found must be interpreted as the upper limit. Parent education level can also be used as an instrument. If we dismiss a direct positive effect of parent education on student progress (conditional on examination marks), then this effect can be interpreted as the lower limit.

This approach offers a plausible way of determining the effect of student lending on student progress. This effect may represent a relevant policy contribution in light of the shift towards a more loan-centred system of financial assistance for students. The effect that student loans have on higher education application rates and accessibility remains a question for debate.

Project 6: Early school leaving: the effect of government covenants with 14 regions

The Ministry of OCW has concluded covenants with 14 regions in order to reduce the number of early school leavers during the 2006-2007 school year by ten percent. A total of EUR 15 million has been made available for this one-time initiative. The covenants comprise performance agreements whereby each region receives EUR 2000 for each reduction in their

school leaving figure by one. Recently the decision was taken to extend this policy to all remaining regions.

This project evaluates the effects that this government policy has had on early school leaving rates in the selected regions in comparison with such rates in other, comparable regions not selected for the policy. The Ministry of OCW (Central Funding of Institutions Agency, CFI) holds records for all secondary school pupils in the Netherlands, as collected on the basis of education numbers over the 2005-2006 school year (the year before this policy was implemented) and 2006-2007 (the first covenant year). These records thus provide a pre-measurement and a post-measurement of the policy, thereby making it possible to compare developments in covenant regions and non-covenant regions. Moreover, the criteria used for selecting the covenant regions can be used to identify regions that were not selected. These regions can then be compared with regions that only just made it into the group selected for the new policy. This project will require cooperation from the Ministry of OCW in the form of access to the aforementioned records.

Project 7: ‘High-potential neighbourhoods’ and education

In 2007, Minister Vogelaar of Housing, Communities and Integration (WWI) submitted an action plan for neighbourhood improvement (*Krachtwijken: Van Aandachtswijk naar Krachtwijk*) to the Dutch Lower House. This ‘High-potential Neighbourhoods’ action plan was developed for 40 neighbourhoods in 18 Dutch municipalities where an accumulation of factors have caused the quality of the living environment to fall behind that of other neighbourhoods in the same city. The plan’s central aim is to transform these 40 problem neighbourhoods into neighbourhoods where people have opportunities and can enjoy a pleasant living environment. Local neighbourhood action plans are developed for each of the 40 selected neighbourhoods. Funding for the project is estimated at EUR 250 million per year for the next ten years, amounting to a total of EUR 2.5 billion. The High-Potential Neighbourhoods action plan addresses a number of specific areas: housing, employment, education, safety and integration. The project we are here proposing aims to measure the effect that this policy has on the domain of ‘education’.

The neighbourhood policy’s specific structure, with 40 neighbourhoods selected on the basis of a socio-economic index, represents a unique opportunity for ascertaining the policy’s actual effects. The 40 neighbourhoods selected were those that scored highest on the socio-economic index. These neighbourhoods will receive additional resources over the next ten years. Neighbourhoods that have a socio-economic index below that of the 40 selected neighbourhoods will not receive any additional resources, meaning that the policy selection criteria applied a cut-off mark at neighbourhood 40. Those neighbourhoods whose socio-economic index fell just below this cut-off mark therefore receive no additional resources. The cut-off mark, referred to in the review literature as a ‘regression-discontinuity’, therefore provides a means of ascertaining the policy’s effects. Its effects on a given outcome can be determined by making a comparison between outcomes in neighbourhoods on either side of the cut-off mark, while keeping an eye to their differences on the socio-economic index. The project will start by analysing findings related to pre-school and early school education and to the reduction in early school leaving. According to the 2008 proposed Dutch national budget, additional resources will be allocated to pre-school and early school education over the coming years, with High-Potential Neighbourhoods in the four major cities designated as first to benefit.

Project 8: Training funds

A fund is currently being set up to support and promote teacher training. It would be possible to determine the effects that training has on the teachers' labour market and on pupil performance by setting up the fund to incorporate random variation in teacher training levels. The best opportunities are likely to lie in the early phase of the fund's creation. Presumably the fund will not yet be able to offer resources to all interested teachers, in which case the resources could be awarded by means of a lottery system, thereby ensuring that all applicants have a fair shot at financial assistance.

It is absolutely vital that the training fund be structured in such a way that its effects can be measured, which will require coordination between departments and researchers.

Project 9: Early selection and mobility

A characteristic feature of Dutch education is its system of early pupil selection. The introduction of preparatory secondary vocational education (vmbo) gave rise to something of a binary system, consisting of a vocational track and a general education track. This project will examine the consequences of the early selection process on educational performance and labour market outcomes.



MU research proposals

The research proposals described here are grouped according to the activities in which future TIER researchers are involved. The TIER-MU projects will be carried out under the direction of Prof. Wim Groot and Prof. Henriëtte Maassen van den Brink, who have been appointed by the Faculty of Economics and Business Administration at Maastricht University.

Each of these projects is several years in scope and is scheduled to start in 2008. In each case the research topics cover multiple areas within the field of education (preschool, early school, primary, secondary, professional and higher education).

Each of the projects addresses 3-5 topics. Work is to be carried out by PhD students (in the case of four-year projects) or post-doc researchers (in the case of two-year projects). The projects are intended to result in knowledge products that can be applied towards policy and/or education practice and towards articles for scholarly journals. The PhD student-led research projects are additionally required to result in a doctoral thesis.

Projects in Focus Area 1: Development and evaluation of effective educational interventions and innovations

Project 1: Pupil performance and teacher quality

The quality of teachers is regarded as one important – if not the most important – determinant of educational performance. Yet at the same time, concerns are being voiced about diminishing teacher quality. More and more, teachers in secondary education are under-qualified or even unqualified to teach. The calibre of graduates of teacher-training colleges for primary education (pabo) has also been an issue of much concern.

This project will seek to provide insight into the contribution that teacher and instructor quality has on pupils' academic performance in primary and secondary education. We will look at the influence that teachers have on children's cognitive and social-emotional development. Teacher quality will be measured according to characteristics such as level of education and experience (including also the adequacy of teaching qualifications).

Data to be used in this project comes from the PRIMA and VOCL cohort studies and covers both primary and secondary education. Both datasets contain detailed information about pupils' academic performance and educational careers, as well as details of instructor and teacher qualifications. Possible use of additional data from the NWO/PROO's new COOL cohort study is also being considered.

Projects in Focus Area 2: The societal context of education

Project 2: The non-monetary returns of education

This project builds upon current PhD research being carried out by Jian Huang under the supervision of Prof. Wim Groot and Prof. Henriëtte Maassen van den Brink within TIER-UvA. The project will examine the causal effect of education on social capital (trust in others and participation in social organisations), with the primary purpose of determining whether the causal effect of education on social capital can be definitively established. Groot and Maassen van den Brink (2007) already examined whether individuals' education as measured in years has an effect on their subjective view of their state of health.

The key issue to be addressed in this study is whether education has a causal effect on health; central research questions are:

- Do the level and type of education have a causal effect on healthy versus unhealthy behaviour (smoking, obesity, alcohol use), health perceptions and the prevalence and incidence of illnesses and health conditions (whether chronic or not)?
- What is the quantitative scope of this causal effect and what returns does education offer in terms of health?

Relevant data sources for this project are: the Periodic Lifestyle Study (*Periodiek Leefstijlonderzoek*, POLS) for 1983-2004, the Social and Economic Panel for 1988-2003 and the Social Statistical Record for 1999-2004.

Project 3: Preparedness to pay for high quality education

Safeguarding quality is one of the key social concerns of education policy. There is much discussion about the quality of education (see for example Groot and Maassen van den Brink 2007b). A positive relationship between price and quality is a given in most markets: better quality = higher price. In education, however, fees and funding do not vary in relation to the quality of service. All other things being equal, good and poor schools receive the same amount of funding. Parents have few options when paying for higher quality education, since the level of the parent contribution is unrelated to the quality of the school. A comparable situation exists in higher education. For Bachelor's and Master's programmes, for more and less expensive programmes and for high and lesser quality programmes, students invariably pay the same amount.

The central question to be addressed in this project is: are parents and students prepared to pay for higher quality education; and more specifically:

- Are parents prepared to pay a higher parent contribution for, for example, smaller classes, better teachers, additional educational materials, homework assistance at school and better facilities at school (computers, buildings, etc.)?
- Are students prepared to pay higher tuition fees for, for example, Master's programmes (*vis-à-vis* Bachelor's programmes), programmes offering better job prospects, programmes ranked among the best in Europe, programmes to which only a limited number of students are admitted, etc.)?
- What importance do parents and students attach to various aspects of educational quality (are parents more concerned about class size, for example, than about computers at school)?

Preparedness to pay will be investigated by means of a discrete choice experiment, whereby parents of school-aged children and students in higher education will be asked to participate in a survey. The discrete choice experiment will consist of a conjoint analysis – a method in which respondents are asked to imagine a number of situations that incorporate specific features of both the educational funding system and educational returns. Respondents are asked to choose between different situations, thereby providing insight into their preferences. Forcing respondents to make choices furthermore ensures that they do not rate everything as important. Respondents' preferences can be used to infer preparedness to pay and to define the relative importance of different aspects of quality ('attributes').

Given this project's broad scope, two PdD research assistants will be required: one to research preparedness to pay among parents of school-aged children and another to research preparedness to pay among students in higher education. An external agency will be contracted to collect survey data.

Project 4: Cost effectiveness of business-related training

Interest in business-related training has grown significantly over the last few decades. Businesses view training as a tool for enhancing the productive capacity and ‘employability’ of their staff. Potential benefits for staff include higher income, promotions within the company, enhanced job prospects outside the company and enhanced job satisfaction.

There have been no systematic review studies in this area to date, while extant data from empirical studies has failed to present any unified picture. In the case of the latter, disparities in the data can be attributed to differences in the groups receiving the training (younger/older and less/well educated staff, etc.) and differences in the type of training at issue (formal/informal, short/long courses, type of courses, etc.).

This project will draft several review studies on the effects of business-related training. As indicated by the summary given above, training can have an impact across a broad spectrum of areas, ranging from productivity to job satisfaction. These effects will be subjected to a systematic review. The resulting findings will be aligned with data about the costs of business-related training, thereby providing insight into the cost effectiveness of such training.

Project 5: What makes the teaching profession attractive?

A teacher shortage is threatening to hit secondary education over the next several years. The shortage will affect subjects like economics, chemistry and French in particular. The key to circumventing this threat is to motivate young people to enter the teaching profession. As such, it is crucial that we know what leads students in secondary education to opt for teacher training, what determines whether they will actually go on to teach after having completed this training and what makes university graduates elect to pursue follow-up training in order to enter the teaching profession.

Myriad interventions have been developed with an eye to making careers in teaching more attractive (see for example the Ministry of OCW’s ‘Action Plan for Teachers’ (*Actieplan leraren*)). Examples include raising teacher salaries (a general pay raise and an additional increase in the starting salary), creating opportunities for recognising teacher excellence, providing resources for refresher courses and additional training, reducing workload and offering a wider range of career options (for example to earn qualifications at a higher level, to pursue PhD study and to progress to management positions).

The question is which of these interventions would be most effective in making the teaching profession more attractive. This project aims to investigate this issue by means of several discreet choice experiments held among various groups of potential teachers (pupils in university preparatory education who can opt to enrol in a teacher training programme, students in teacher training programmes and university students who could opt to pursue a follow-up teacher training track).

Projects in Focus Area 3: Synthesis and integration of scientific production

Projects framed within this focus area deal with issues relating both to the education establishment or system and to didactic or pedagogical interventions. The establishment-related issues are intended to contribute to building evidence-based policy for education; the didactic interventions are aimed at evidence-based education didactics.

Review studies and meta-analyses will describe and analyse evidence for the effectiveness of interventions from both Dutch and international studies, thus yielding additional insights by means of international comparisons.

In the course of this year, the NWO/PROO will issue a call for papers to contribute to a review study focusing on issues related to the existing establishment (see Groot 2007). The review study is intended to answer the following questions:

- What is known about the effectiveness of educational systems in terms of satisfying public interests? Specific concerns to be addressed are:
 - How the educational establishment's investment in public interests contributes towards the utilisation of talent and the reduction of social inequalities.
 - Which elements in the educational establishment are the most effective in fulfilling public interests; also at issue is the alignment between different features of the educational establishment.
- What is known about the importance assigned to public interests in education policy? Specific concerns to be addressed are:
 - To what extent policy decisions affecting educational establishment structure are based on scientific knowledge and insights.
 - To what extent scientific research into the effectiveness of educational systems furnishes knowledge that is useful and relevant for assigning a relative importance to public interest issues in policy on education.

Given the potential overlap with the NWO/PROO review study, we have designed the TIER review studies to target the evaluation of more specific policy interventions, such as the organisation of educational institutions and financing education.

Project 6: Effectiveness of educational structures

Educational structures can be cast in a variety of moulds. Distinguishing features include ownership (public/private), scope (broad/narrow) and size (large/small). This project aims to provide insight in to the cost effectiveness of structural features of education.

This project will determine the effectiveness of a number of relevant features of educational structures by means of review studies and meta-analyses. Potential topics to be considered are:

- The effectiveness of the way in which preschool education is organised.
- The effectiveness of 'extended schools' (*brede scholen*; schools combining a range of educational/community functions under one roof) in primary education.
- The effectiveness of extended schools in secondary education.
- The effectiveness of large schools.
- The effectiveness of private education.

Findings resulting from these effectiveness studies will be coupled with data about the costs of specific structural features, thus yielding insights into the cost effectiveness of different organisational forms.

Organisational forms of education have immense societal relevance. Private education is now gaining ground, which raises the question of whether it delivers the same value for money as publicly-funded education. Extended schools have been a growing trend in primary education, which in turn raises the question of whether these schools perform better than 'ordinary' schools. Finally, the issue of scale in education has also generated debate, and is likewise a highly relevant topic from a scientific point of view.

Theoretical models offer a tool for generating meaningful insights into various features of educational structures – scale among them. Little empirical research has been done on the effectiveness of different structures in the Netherlands; in other countries, however,

there has been far more research in this area, yielding data that is also relevant in the Dutch context. As such, a project to examine these findings can provide meaningful insights.

Project 7: Effectiveness of funding regulations in education

Educational funding – like educational structures – is a highly relevant social issue. How education is paid for determines in part how education is organised. Important factors to consider are: the ratio of public versus private funding (including tuition fees and parent contributions), the relationship between funding and quality, and funding types (pupil-based, performance-based, lump sums or a combination of these). The recent McKinsey report posits that injecting more money into education does not always result in better education (McKinsey 2007). However, it may be that the *way* in which educational institutions are funded does play a role.

The behavioural effects of different funding types are in theory reasonably well understood. These effects will be among those included in the review study. Empirical data concerning the effects of funding systems are likewise available, though research in this area is relatively scarce in the Netherlands. However, empirical research conducted abroad can also generate meaningful insights for this country.

This project will assess the effectiveness of different funding systems on the basis of review studies and meta-analyses. Potential topics to be considered are:

- The effectiveness of lump sum funding.
- The effectiveness of vouchers and pupil achievement-based funding.
- The effectiveness of financial incentives to promote quality.
- The effectiveness of private donations in education.

Project 8: Effectiveness of teaching methods

The effectiveness of didactic methods is an area of never-ending discussion. A recent example is the discussion surrounding Realistic Mathematics Education in primary education.

Educational science research has examined the effectiveness of teaching methods, but falls short in two respects:

- Studies sometimes differ in their definitions and descriptions of teaching returns, thus making it difficult to compare respective returns.
- There tends to be an exclusive focus on teaching effects, ignoring the value of cost-benefit and cost-effectiveness studies.

If we take findings from studies on how different didactic methods effect learning and pair them with information about the costs of these methods, we can make comparisons for cost effectiveness. One resulting advantage would be that studies could then be compared with one another, allowing us to answer the question: which method yields the greatest learning return for the amount of money invested?

There is a wealth of research data – from studies done both in the Netherlands and abroad – about the learning returns of different didactic methods. This project will create systematic descriptions of these studies and use them as input for meta-analyses, with the ultimate goal of achieving a consensus about the learning returns of each of these didactic methods. Meta-analysis findings will be combined with information about these methods, thereby yielding insight into their cost effectiveness.

Successful education practice depends on knowledge about the cost effectiveness of didactic methods. This project combines cost effectiveness studies for different teaching

methods in both primary and secondary education, meaning that the overall findings will be relevant for both levels of education.

The project will assess various didactic methods on the basis of review studies and meta-analyses. Potential topics to be considered are:

- The effectiveness of the New Learning concept in secondary education.
- The effectiveness of Direct Instruction.
- The effectiveness of Realistic Mathematics Education in primary education.

Project 9: Effectiveness of policy measures for preventing and reducing disadvantage

One of the key objectives of current education policy is the reduction of learning disadvantages. A broad range of policy interventions are being used to target this issue, varying from provision of preschool and early school education to provision of additional funding for population segments at high risk for learning disadvantages. Several studies have been published over the past years in which the effectiveness of these interventions is investigated. Relatively little is known about their cost effectiveness, however. This project therefore links data about the effectiveness of interventions for preventing and reducing disadvantages with data about the costs of these interventions, thus providing insight into the cost effectiveness of the interventions.

The project will consist of a series of review studies and meta-analyses designed to assess the cost effectiveness of interventions for preventing and reducing disadvantage.

Potential topics to be considered are:

- The effectiveness of preschool and early school education interventions for preventing language deficiencies.
- The effectiveness intervention schemes such as pupil-based funding (*'rugzakjes'*) and reintegration of special needs pupils (*'samen weer naar school'*) towards reducing learning disadvantages.
- The effectiveness of measures to reduce disadvantage through additional funding for disadvantaged pupils (*gewichtenregeling*).
- The effectiveness of extended schools in preventing and reducing learning disadvantages.

Management and Support

Responsibility for all the abovementioned projects and general management of the institute will rest with a team of two professors: Prof. W. Groot and Prof. H. Maassen van den Brink (both 0.50 fte). TIER activities will also require a number of additional support staff, including management support in the form of a management assistant (1.00 fte) and support for IT applications (0.2 fte). The IT assistant's primary task will be to develop and maintain a website set up to transfer knowledge and information to educational and policy practice.



RUG research proposals

The research proposals described here are grouped according to the activities in which future TIER researchers are involved. The TIER-RUG projects will be carried out under the direction of Prof. Roel Bosker and Prof. Greetje v.d. Werf (GION).

Each of these projects is several years in scope and is scheduled to start in 2008. In each case the research topics cover multiple areas within the field of education (preschool, early school, primary, secondary, professional and higher education).

Each of the projects addresses 3-5 topics. Work is to be carried out by PhD students (in the case of four-year projects) or post-doc researchers (in the case of one and two-year projects). The projects are intended to result in knowledge products that can be applied towards policy and/or education practice and towards articles for scholarly journals. The PhD student-led research projects are additionally required to result in a doctoral thesis.

Projects in Focus Area 1: Development and evaluation of effective educational interventions

Project 1: Effects of standards and target levels in the foundation stage of primary education

According to the Education Council's (1999) recommendations for learning standards, the formulation of standards in the core areas of language and mathematics is needed in order to achieve transparency about desired proficiency levels for all parties involved in education, thereby facilitating pupils' smooth progression through the educational system. This project will investigate whether learning standards, and the transparency they are presumed to create about desired proficiency levels, do in fact lead to improved pupil performance in general, and to improved performance among weaker pupils in particular. The project is tailored towards the areas of language/reading and arithmetic as taught in the foundation stage of primary education (classes 3 through 5). Two PhD students will be involved in the project: one for language/reading and another for arithmetic. Research in both these areas will take the form of a longitudinal trial carried out in around 50 primary schools. In half these schools (the trial group) the PhD students will work in consultation with the relevant teachers to set learning standards for classes 3, 4 and 5, respectively; in the remaining schools, no such standards will be applied. A pre-measurement of pupil performance in each class will be taken prior to the start of the trial. Pupil performance will subsequently be tracked during the trial, with measurements being taken midway into the trial and at the end of the school year. The pupils in classes 3 and 4 will continue to be monitored in classes 4 and 5, and class 5, respectively. Pupil performance will be measured on the basis of tests administered as part of the CITO pupil monitoring system.

Project 2: Effects of a 'learning to learn' programme and learning standards in the advanced stage of primary education

In the discussion concerning the 'old' versus the 'new' learning (i.e. the New Learning concept) frequent reference is made to so-called new learning outcomes (collectively described by such concepts as 'learning to learn', 'metacognitive skills' and 'self-regulation'). While primary school teachers feel it is important for pupils in the advanced stage of primary education to strive towards such learning outcomes, there is no clear perspective on which knowledge and skills are actually at issue, on how these can be made measurable and on what level of proficiency can reasonably be required of pupils. Researchers in this project will design a new programme that frames a progressive learning track from class 6 to class 7 to class 8 and incorporates 'learning to learn' skills relevant for pupils' transition from primary

to secondary education. The programme will establish proficiency levels for the end of classes 6, 7 and 8. The programme's effectiveness will subsequently be investigated by means of a trial carried out in around 50 primary schools, whereby it will be implemented by teachers in one half of the schools, and not implemented in the other half. First and final measurements will be conducted in each respective class in both groups of schools. Pupils in classes 6 and 7 will continue to be monitored over the next two years or one year, respectively. Test development will comprise part of the project.

Project 3: Standards and target levels and differentiation in the foundation stage of primary education

The structure of this project is similar in part to that of project 1 on page 48. In this project, however, target levels for language/reading and mathematics in the foundation stage and for 'learning to learn' in the advanced stage will also be differentiated on two levels, such that teachers can adjust the target level according to the estimated capacity of their pupils. The trial will be carried out at around 75 schools, which will be divided into three groups: one group that implements the standards without level differentiation, one group that implements the standards with level differentiation and one control group. Interviews, questionnaires and supplemental observations will be used to determine which techniques teachers in each of these groups of schools use to deal with capacity differences among pupils. The effects of the standards and target levels and the manner of differentiation will be assessed using the same method as in project 1.

Project 4: Standards and teacher-directed versus pupil-directed 'learning to learn' in the advanced stage of primary education

A topic that frequently comes up in discussions about the 'old' versus the 'new' learning is that of how much autonomy pupils should be given in structuring their own learning process and instruction in it. Never more so than when the 'new learning' outcomes are at issue – as in the case of 'learning to learn' – do we encounter the expectation that pupil-directed learning is more effective than teacher-directed learning. Yet neither of these extremes has much relevance for education practice; more relevant are gradations of pupil versus teacher control. This project will investigate whether the programme and related standards developed for project 2 are more effective in a context of pupil-directed learning or teacher-directed learning. The study is designed more or less along the same lines as that described in project 2. A trial will be carried out in around 50 primary schools, with half in the trial group and half in the control group. The 25 schools in the trial group will implement the specially-designed programme and related standards; the 25 schools in the control group will implement neither. In addition, observations will be carried out at all 25 schools, whereby the approach taken to teaching at each school will be evaluated according to a continuum from pupil to teacher-directed learning. The effects will be assessed using the same method as in project 2.

Projects in Focus Area 3: Synthesis and integration of scientific production

Project 5: Meta-analysis and synthesis of learning standards research

Evidence for the importance of learning standards is implicit in the extent of achievement-orientation (or culturally-determined value placed on results) and high expectations exhibited by teachers (whether individually or in a team context) in respect of pupil proficiency objectives. Wizers and Bosker conducted a meta-analysis of research findings on the

importance of these factors over the period from 1987 to 1997. This project proposes to update and expand their meta-analysis with research into ‘standard setting’ on the one hand and into ‘teacher expectation’ and ‘teacher expectation bias’ as informed by educational psychology on the other.

Management and Support

All projects named above will be led by a team of two professors: Prof. R.J. Bosker and Prof. M.P.C. van der Werf (both 0.25 fte). Five members of the senior university lecturing (SUL) staff will be charged with daily supervision of the PhD students (comprising 0.20 fte for each student). TIER activities will also require a number of additional staff, including support for the organisation of data collection and data management (1.00 fte) and for IT applications (0.2 fte). The IT assistant’s primary task will be to develop and maintain a website set up to transfer knowledge and information to educational and policy practice.

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APPENDICES

Ministry of Education,
Culture and Science

Prof. H. Maassen van den Brink
Reguliersgracht 108
1017 LW Amsterdam

The Hague
26 January 2007

Our reference
ASEA.DIR.2006.48559

Subject
Institute for Education Research

Dear Ms Maassen van den Brink,

Previously we discussed your proposal to set up a 'Social Top Institute for Education'. Additional follow-up meetings have been held at the official level. Pursuant to these discussions, I would like to propose the following.

Your initiative for organising an Institute for Education Research is one that I wholeheartedly support. Examination of the current knowledge infrastructure for education policy and practice shows there is an unfulfilled need for a body that collects knowledge, evaluates that knowledge in terms of quality and policy relevance and promotes its accessibility. Ideally, this body would work in close coordination with the sphere of scientific research and independently of the Ministry of OCW. Whether an institute of this kind should have the appellation 'Social Top Institute for Education' from the very outset is a question I am unable to answer. I have therefore submitted this matter to the Netherlands Organisation for Scientific Research (NWO) for consideration.

In the description you have thus far provided of the proposed institute, you define the following tasks:

- evaluation of research findings in terms of value and merit for policy (analysis of coherence and/or inconsistencies);
- writing reviews;
- promotion of evidence-based research for education;
- assessment of costs and benefits (you spoke in this context of a more cost-efficient and effective education sector).

You envision such an institute as having the following objectives:

- development of knowledge technology in education;
- innovation and increased production capacity in education;
- implementation and dissemination of evidence-based knowledge technologies;
- evaluation of interventions and of new technologies in education.

Broadly speaking I am positive about the still somewhat vague summary of ambitions and tasks. However, I would also like to comment on a number of points.

The OCW regards it as a matter of key importance that the scope of the institute not be limited to economic interests only. Social-scientific facets of education (as relating to, for example, education theory, pedagogy and developmental psychology) must also be considered, as must the structuring of education in general.

It was in light of the above that I pointed out during our conversation some in my view particularly noteworthy developments in the area of brain and cognition research – specifically those related to ‘learning’. These developments – which have been shaped in large measure by an interdisciplinary approach – are currently lacking sufficient synergy and organisation in any form. My department has agreed to provide support (including financial) for recent initiatives in this area. I would therefore request that you consult with the relevant researchers and together coordinate the education research institute’s programme of tasks with work in the brain and cognition sciences.

In addition, I stress the need for not only more evidence-based policy, but also more evidence-based practice. I would here refer you to, amongst other things, the Education Council’s recent recommendation in this matter and my own response thereto. In this response, I indicated that evidence-based building blocks for policy and practice continue both to be insufficiently available and to find too little application. An education research institute should work to fill critical gaps in precisely these areas – not least for the benefit my own department.

As concerns the task you describe as “writing reviews”, I would note that we feel this task should be broader in scope: in addition to the proposed reviews, there is also a need for synthesis and integration of scientific production. It is precisely in view of the aim to make research data more accessible and useful that such data must be evaluated and arranged into coherent relationships. The institute should invest additional resources to achieve this.

Finally, our department regards it as absolutely vital that institute operations directly benefit education research, education practice and education policy. As such, the institute could serve as an element that binds these three domains – which are at present insufficiently linked – more closely together. In this sense alone the institute would already be able to offer significant stimuli for improving both education policy and the quality of education in the Netherlands.

I am assuming that your plans have been developed in consultation with the NWO and all other relevant parties in education and education policy related research, including the CPB, SCP, CHEP and Education Council, as well as with the relevant education and research practitioners. At issue are not only the goals of achieving further consensus between involved parties and investigating the options for joint collaboration, but also the explicit formulation of the added value that such an institute has to offer.

As mentioned above, I have delegated responsibility for the designation of ‘social top institutes’ (STI) to the NWO. Currently I am still in the process of consultations with the NWO to define the suitable content framework in which STIs should operate, as well as to define procedures for the establishment and designation of STIs. I expect that matters will be

crystallised further in the course of this year. A prospective 'STI Education' will in any case be evaluated against this content framework and the procedural requirements.

I hope that you will consider the remarks and accents described above as you further accentuate and define your proposal. I am very interested in the final shape that your plans will take.

I intend to add this letter and – if possible – your response to the agenda for the next meeting of the OCW Knowledge Directorate on 27 February.

The Minister of Education, Culture and Science,

<signature>

Maria J.A. van der Hoeven

 Session year 2006-2007

30 800 VIII Determination of the budget for the Ministry of Education, Culture and Science (VIII) for the year 2007
No. 79 LETTER FROM THE MINISTER OF EDUCATION, CULTURE AND SCIENCE

To the Chairman of the Lower House of the States General

The Hague, 4 December 2006

On 19 January 2006, the Education Council issued its recommendation ‘Towards more evidence-based education’ (*Naar meer evidence based onderwijs*).² The council’s recommendation was issued pursuant to my request to determine to what extent a stronger evidence-based approach can contribute to the quality of Dutch education.

The Education Council provided a detailed and thorough report addressing my questions, drawing on extensive analysis of findings from other domains and other countries.

In the section below I will address a number of the council’s remarks in respect of intrinsic aspects of the evidence-based method. At the same time I will also indicate how I intend to implement the council’s recommendations.

Evidence-based education practice and evidence-based education policy

In investigating applications for evidence-based methods, the council focused in the main on education *practice* and less on education *policy*. This is in no way to prejudice the close link between them and the need for evidence-based approaches to weigh more heavily in policy development. The debate is focusing in increasing measure on the need to create a strong interface between policy, research *and* practice. Nevertheless I must conclude that initiatives to achieve this are lagging amidst the continuing intensification of the debate, resulting in the need for additional impulses.

In the action plan ‘OCW is Changing!’ (*OCW Verandert!*), I emphasised the importance of a more evidence-based policy development process.³ The Ministry of OCW has already instituted a so-called *Knowledge Directorate* – as part of the broader aim of organising the knowledge function of government – with the purpose of strengthening ties between policy and science and increasing coherence between the activities carried out by advisory councils, planning agencies and research institutions. At issue is not only the formulation of evidence-based policy, but also the carry-over of scientific insights into education practice.

Responsibilities

The council states that the production of educational and pedagogic-didactic knowledge, as well as the application thereof, are key responsibilities of not only the government, but also of the educational institutions and sectors themselves. The chain of actors involved in this process is a long one and includes the ministry, researchers, curriculum designers, supporting institutions, publishers, school leaders and teachers. Each of these actors has a specific role in the development of evidence-based educational methods. Translating scientific insights into practice is only a part of the process; the reverse – *practice-based evidence*, comprising scientific reflection on and research into daily classroom practices – is also becoming increasingly important.

The council has proposed that my role in respect of continuing developments in this area be to ensure their place on the agenda, to stimulate and – where necessary – to facilitate. In my

² Proceedings of the Lower House of the States General 2005-2006, 30 300 VIII, no. 177 (19 January 2006).

³ Proceedings of the Lower House of the States General 2005-2006, 29 362, no. 68 (23 November 2005).

capacity as the person responsible for education quality and innovation, I will endeavour to integrate the council's recommendations to the greatest possible degree in the education sphere and in the activities of the institutions involved. These institutions have been informed of the council's recommendations by means of an advance letter of intent (*Hoofdlijnenbrief 2007-2008*) for education-supporting activities informing.⁴ The Dutch contribution to the OECD 'Schooling for Tomorrow' programme presents a good model for responsibility-sharing between the department and educational organisations. Innovation programmes in primary and secondary education provided the primary impetus for selection of the project's 'sharing knowledge for innovation' theme. The project aims to answer two questions: how can we improve interaction between research and practice, and how can we improve inter-school knowledge exchange. Results of the project will be published in an OECD report at the end of 2007, thus ensuring that other countries can also benefit; the report's primary interest, however, is for education in the Netherlands. Working within my portfolio as minister of research policy, I will take measures to promote additional scientific investigation into educational methods (existing or new), to ensure that research development and execution occurs in close collaboration with education practice, and to improve the accessibility of research findings. To this end, and where appropriate, I will also take personal responsibility for the launch of new research projects.

The evidence-based approach

In its recommendation, the council emphasises the importance of the evidence-based approach in education. It further distinguishes between hard and soft evidence. I agree with the council's statement that we should aim for "the most concrete evidence possible", while also keeping an eye to the fact that different phases will require their own distinct approach – including pilots, monitoring and evaluation.

Given current practice, it will be necessary to use existing scientific knowledge to advance new educational methods and approaches. The effectiveness – or at least plausibility – of an approach must be clarified in advance. Moreover, the introduction of new methods must proceed with maximum transparency, monitoring and evaluation of effects. Such evaluation should focus not only on the intended effects of educational methods and approaches, but also on any side effects, whether desirable or undesirable.

Specific recommendations

What the council's analysis makes clear in any event is that there is a continuing lack of evidence about the effect of certain themes in education and that, where such evidence is available, actual implementation in education practice has been lacking. First and foremost, whereas the expansion of evidence-based methods is not generally perceived as being an urgent need, the council states that this perception should be held by everyone involved in the knowledge management chain. This perception has already gained currency in the healthcare sector and, more recently, in youth welfare. The healthcare sector can provide valuable leads for the domain of education, though it is important to keep in mind that major differences also exist.

Rift between education research and practice

Education continues to contend with a rift between research, policy and practice. This observation is not new and has been pointed out on previous occasion by not only the Education Council and the Advisory Council of Science and Technology Policy, but also by the OECD. I refer in this context to my response of 25 November 2003 to the Education Council's 'Knowledge about Education' (*Kennis van het Onderwijs*) recommendation, in which I underlined the importance of positive interaction between education research and policy. This same rift also continues to throw up obstacles to evidence-based approaches in other countries and sectors (such as youth welfare). Education policy has already cleared the way for parties capable of bridging this rift, such as knowledge communities, knowledge agents and lecturers, who are charged with expanding the dissemination and exchange of

⁴ Proceedings of the Lower House of the States General 2005-2006, 30 300 VIII, no. 217 (13 April 2006).

knowledge, boosting collaboration and coordination between education practice and research and ensuring that educational methods old and new rest on a solid scientific basis. Improved coordination between education research and practice is, as indicated above, the theme of the Dutch contribution to the OECD Schooling for Tomorrow programme. Various professional sectors in education and my own department have joined hands to work on this contribution. As advocated by the council, this project aims to achieve a *vice versa* action, whereby scientific research is not only translated into practice-based applications, but also informed by education practice itself. Incidentally, measures to bridge this rift form an explicit task within the development of new innovation strategies.

Digital service point

The council points out that a central digital service point – analogous to similar facilities in the US and UK – is necessary for bridging education research and practice. This service point would be charged with collecting relevant research material and managing the accessibility thereof for education. I support the council's view that knowledge about the effectiveness or ineffectiveness of educational methods must be accessible. Incidentally, the 'service points' envisioned by the council already exist for knowledge transfer.⁵ While improved mutual coordination between existing facilities could in itself supply the necessary added value, I will nevertheless investigate to what extent a new, integral facility, analogous to similar facilities abroad, would be more effective and efficient. Indeed, I can foresee such a facility not only functioning as an intermediary for new scientific insights, but also serving to stimulate and support the application thereof.

Accountability

Whereas educational institutions can be offered direct stimuli to make greater use of educational methods with a proven effect, the council posits that indirect opportunities also exist and that these deserve additional focus. As such, the council advocates heightening supervision over both the transparency of the objectives that educational institutions set themselves and over the extent to which these objectives are actually achieved. Impelled in part by this advice, the Education Inspectorate's most recent Education Report stated its intention to additionally begin monitoring the effects of innovation processes in education. The Inspectorate will therefore, and insofar as necessary, deviate from the established supervisory framework in order to offer room for experimentation and to gain perspective on the positive and negative effects of specific changes.⁶

Training and continuing education for teachers

The council advocates the inclusion of an explicit research focus in teacher training and continuing education programmes. This could be achieved through a system in which all teachers-in-training complete a basic orientation, with subsequent options for specialisation in evidence-based education thereafter. One option would be to appoint a lecturer in 'proven educational effect, recordability and quality control' at all teacher-training colleges for primary education (*pabo*). I will ensure that teacher competency requirements in respect of scientific research and its applications are met in an optimal manner.

A specific type of evidence-based approach will be implemented in the Depth Pilot for training schools and academic schools. Academic schools relate classroom training to school development, educational innovation and school-centred research. In these schools, education practice, teacher training in the workplace and scientific research serve to reinforce one another. At the same time, teachers develop investigative capacities that strengthen their teaching practice. By working in close cooperation with the teacher training programmes, professors, lecturers and other scholars, we will be able to design a training school in which learning, training, career reflection, development-oriented research, knowledge distribution and innovation go hand in hand. In addition, consultations are

⁵ Examples are the transfer point 'Back to School Together' (*Weer Samen naar School*, WSNS) and Policy on Eliminating Educational Disadvantage (*Onderwijs Achterstanden Beleid*, OAB), the Dutch Information Centre for Learning Resources (*Nederlands Informatiecentrum voor leermiddelen*, NICTL), the Freudenthal Institute, Sardes and the Centre for Dutch Language Expertise (*Expertisecentrum Nederlands*).

⁶ Proceedings of the Lower House of the States General 2005-2006, 30 300 VIII, no. 221 (25 April 2006).

currently underway with the Dutch Association for Teacher Educators (VELON) and the Professional Register For Teacher Educators (*Stichting Registratie Lerarenopleiders*) to discuss the development of a competency profile for training officers.

Research and development

The council argues that it is the role of science to contribute more ‘recordable knowledge’ in the form of information about how educational methods work and about how they generate given effects and side effects. Working within the NWO/PROO framework, amongst others, I will promote the expansion of scientific research initiatives that both reflect the needs and wishes of educational practitioners and fulfil the need for recordable knowledge as advocated by the council. Where appropriate, I will also take personal responsibility for the launch of such new research projects.

Conclusion

As stated at the beginning of this letter, the Education Council advisory request is part of a larger – and international – initiative aimed at significantly increasing both awareness about and applications of evidence-based education *practice* and evidence-based education *policy*. Responsibility for this task should be shared – as the council rightly points out – between the Minister of Education, Culture and Science and other partners in the knowledge chain connecting education research and education practice. I will urge the relevant partners in this chain to contribute all they can to translating the council’s recommendations into practice, in which the design of a digital service point can play a pivotal role.

The foregoing indicates which of the council’s recommendations I would like to see accented. In launching the new programme with the relevant chain partners, these accents will serve to guide the development and implementation of additional evidence-based applications. The Education Council’s recommendation also contains further useful suggestions that will provide valuable input for the development of an evidence-based programme.

The Minister of Education, Culture and Science,
M.J.A. van der Hoeven

Session year 2006-2007

**30 800 VIII Determination of the budget for the
Ministry of Education, Culture and
Science (VIII) for the year 2007**

No. 124 LETTER FROM THE MINISTER OF EDUCATION, CULTURE AND SCIENCE

To the Chairman of the Lower House of the States General

The Hague, 1 May 2007

On 4 December 2006, my predecessor sent you a policy response to the Education Council's recommendation 'Towards more evidence-based education' (Proceedings of the Lower House of the States General 2006-2007, 30 800 VIII, no. 79). The Lower House permanent committee on education followed up this policy response with a number of questions, to which I am able to respond as follows.

At present I am considering the complex question of how best to enhance my department's knowledge function by, amongst other things, strengthening the relationship between education research, policy and practice and by further integrating their control mechanisms. This task has been impelled in part by the current drive to make both education policy and education practice more evidence-based. The Education Council's recommendations have been of great benefit in this regard, as has my department's participation in various EU and OECD projects and in ongoing third-party initiatives for the development of a new research institute for education.

In view of these developments, I hereby submit a request for postponement in answering these questions. Once the abovementioned projects have been provisionally finalised – which should be shortly after the summer – I expect to be in a better position to supply targeted answers.

The Minister of Education, Culture and Science,
R.H.A. Plasterk