



**Social Sciences
Netherlands Initiative for Educational Research**

Call for proposals

Human Capital: 21st century skills

Part of the Top Sector Creative Industry & Social Infrastructure Agenda

2015

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1 Introduction

1.1 Background

In this Call for Proposals in the field of Human Capital, the research questions are based on two challenges for tomorrow's society: the ambition of the innovative creative sector, and strengthening human capital for Dutch society.

The Dutch government's Top Sectors policy focuses expressly on the importance of Human Capital for the innovation and competitiveness of the Dutch business sector. All nine top teams of the Top Sectors have prepared a Human Capital Agenda (HCA) and the Top Sectors have jointly issued the Science and Technology Master Plan (MB&T), which calls for both a quantitative and a qualitative boost to education and the workforce.

The ambition of the Creative Industry Top Sector is to make the Netherlands the most creative economy in Europe by 2020. To accomplish this ambition it is necessary to further develop the knowledge base for the creative industries. NWO considers it its task to strengthen the knowledge base for the Creative Industry Top Sector in cooperation with other parties and to encourage (knowledge utilisation of) research for the benefit of this sector. The Human Capital Agenda of the Creative Industry states that to this end it is necessary to have sufficient and high-quality human capital, smarter, more efficient organisation forms and a good connection between innovation and people so that the foundation of important Dutch economic Top Sectors can be strengthened across the board.

This Call for Proposals focuses on the question of how education can best respond to the changing demands of society and the labour market, as argued in the 'Investing in skills and competencies' study by the Netherlands Bureau for Economic Policy Analysis (CPB) and the University of Amsterdam (UvA), in the WRR report 'Towards a learning economy' and the recommendation of the Education Council, 'Towards a contemporary curriculum'.

This programme for Human Capital elaborates on this public debate, which centres on the concept of '21st century skills'. The importance of these skills appears to be increasing. On the one hand we see that the importance of these skills no longer applies just to highly educated people but across the breadth of the workforce. On the other hand, a shift in focus is taking place in these skills, namely in the direction of increased relevance of digital literacy and creativity.

Applications in this Call may build on existing initiatives submitted within the Creative Industries programme 'Knowledge Innovation Mapping', or KIEM. Applications for these seed grants of at least € 18,000 can still be submitted until 1 November 2014; for more information go to the [NWO](#) website.

About the financiers

NWO Social Sciences (MaGW)

NWO Social Sciences (MaGW) initiates, promotes and funds high-quality research in the social and behavioural sciences. Social and behavioural science research contributes to providing answers to a variety of societal issues.

The Social Infrastructure Agenda (SIA) combines consistent quality research aimed at strengthening and innovating the socio-cultural foundations of the Dutch economy. If the Netherlands is to successfully respond to the economic, technological and social challenges which the Top Sectors focus on, then a number

of incentives will also be required in the areas of employment, education, welfare, safety and sustainability. The aim is to strengthen the foundations of the Dutch knowledge economy with scientific knowledge for public and private organisations. The SIA has six roadmaps, one of which is Human Capital. This spearhead is aimed at ensuring sufficient and high-quality human capital.

National Task Force on Educational Research

The National Task Force on Educational Research (Dutch acronym: NRO) coordinates and funds educational research programmes and aims to bridge the gap between academic research and educational practice. The NRO contributes to innovation and improvement in education.

Practical research within the NRO is conducted in and in collaboration with practice and delivers knowledge and specific products that can be used directly in educational practice and that contribute to school development, professional development and to enhancing the knowledge base on education.

1.2 Available budget

The available budget for this Call is a maximum of €2 million. This budget is divided into €1 million on behalf of NWO MaGW and €1 million on behalf of NRO. Within the research projects scientists work closely together with non-university partners. These partners should contribute no less than 25% of the budget; at least half of this contribution should be paid *in cash* and the remainder *in kind*.

1.3 Validity of the Call for Proposals

This Call for Proposals is valid until the closing date 17 March 2015.

2 Aim

The main objectives of this programme are to deepen scientific knowledge through further theory and concept development of 21st century skills and to co-create knowledge for practical applications in collaboration with non-academic partners.

The concept of 21st century skills was introduced by the OECD in its publication on '21st century skills'. The skills the OECD distinguishes are *digital literacy, creativity, critical thinking, problem-solving ability, teamwork* and *communication*. There is a widely shared sense that these higher-order skills are essential for successful participation in the labour market. At present, however, there is no synthesized and structured knowledge about how and why these skills play a role.

In its report '*Towards an OECD Skills Strategy*' (2011, pp. 29), the OECD concludes: "Numerous efforts have been made to identify 'key competences' and 'employability skills' over the past decades. However, apart from the universally acknowledged importance of basic literacy and numeracy skills, there is little hard evidence of what other skills are required for workers to obtain better labour outcomes and cope with a more fluid labour market".

At this time we still lack the knowledge base required to conduct a structured debate on the question of how and to what extent 21st century skills should be incorporated in the curriculum. In its report '*Towards a learning economy*', the WRR therefore argues that objectification of the debate on educational content is needed. This research programme attempts to enrich this debate with theoretical and conceptual innovation as well as to develop empirically grounded practical applications.

Seen from the practical side of education, this renewed focus on higher-order skills is a challenge and gives rise to fundamental research questions. For example, when should the curriculum focus on these skills, and are educational institutions the best place to learn these skills?

Learning these skills, in particular, takes place not only in a formal school setting but also outside normal school periods and during one's entire career. This research programme is therefore open to research proposals that focus on pre-school and early childhood education, through primary and secondary education, vocational education and higher education to lifelong learning (for general development or preparation for or as part of professional practice). These demands on the education system are relatively new and raise fundamental research questions.

Fundamental research questions we can ask in this connection are:

- How can 21st century skills be learned, and what barriers and facilitators (cognitive, psychological and social) can be identified in this respect?
- How and at what point in personal development can these skills best be learned, taking into account the various developmental stages and the other components of the teaching curriculum?
- What mechanisms explain the acquisition of 21st century skills and what does that mean in terms of designing successful learning environments?
- What is the extent of the individual and social benefits of teaching 21st century skills and is this changing? Are these skills in line with the dynamic created by the changing labour market? Do the different sectors of the labour market require differentiation of skills?
- How does the acquisition of one type of skill influence the development of another type and to what extent does this involve sequential processing?

- How does the workforce learn 21st century skills? To what extent can refresher courses and 'on-the-job training' help to maintain and improve these skills?
- To what extent can learning 21st century skills enhance people's performance at work and in teams? What role can organisational factors play in learning these skills?
- How can new teaching methods and software, such as *serious gaming*, be used to increase the motivation for learning and the level of 21st century skills? What is the best way to introduce these new forms of learning (more interactive, playful) and how can they help in monitoring the progress of individual students?

Related knowledge questions regarding applications in teaching practice:

- What do teachers need in order to integrate the learning of 21st century skills into their teaching curriculum?
- Can 'good practices' for learning 21st century skills be formulated based on the research?
- What are the consequences of the outcome of these research questions for the practice of education?
- How can commercial parties play a role in developing products and services for teaching 21st century skills, both in education and in business practice?

In this Call for Proposals, one of the important characteristics of practical research is the close collaboration between researchers and practitioners throughout the entire process, from formulating the research question to implementation and further dissemination of research results. This means there is always a two-way flow of knowledge and results. For the practitioners, the research can also serve as a learning laboratory in terms of how problems can be identified systematically and how a research question can be developed and answered. Another important characteristic of practical research is that the scientific criteria for research quality must emphatically be fulfilled *and* that the results can be applied in practice.

3 Guidelines for Applicants

3.1 Who can apply

The Human Capital programme, which is both interdisciplinary and transdisciplinary in nature, focuses on collaboration between academic parties, businesses, governments, civil society organisations such as educational institutions, and other knowledge institutions. To fulfil this criterion, all partners involved in a research proposal must form a consortium.

Each project proposal has one main applicant. A grant application can be submitted on behalf of a consortium by a Professor or an Associate Professor at a Dutch university, or an institution affiliated with NWO or KNAW. The principal applicant's tenure must be for at least the duration of the application process and the duration of the funding period. Other academic staff can be included as co-applicants. The non-university partners, such as businesses and the public sector, must be included in the application as co-applicants. A consortium must consist of at least two research institutions.

Professors appointed to universities of applied science may also be co-applicants. This means that the research can be partly conducted at the professor's institution, provided the main applicant ensures supervision of those conducting the research.

During the period for which funding is requested the main applicant and co-applicants must remain involved in the research covered by the application. The employer must give the applicants the opportunity to ensure adequate supervision of the research during the term of the application procedure and the research.

3.2 What can be applied for

The grant requested from NWO is a minimum of €400,000 and a maximum of €600,000. This is sufficient to award approximately four projects. A grant may be applied for to cover both the staff and material costs to be incurred for the research. The research proposal should involve the appointment of at least two researchers (PhD candidates or postdoc researchers). The duration of the programme, and the maximum duration of the research, is five years. An important aspect of this programme is knowledge co-creation by researchers in cooperation with external partners and users. An external partner cannot apply for any of the budget allocated by NWO.

Co-financing

The private and/or public partners (including companies, governments, public organisations) in the consortium must make a specific contribution to the research. This contribution represents at least 25% of the budget requested from NWO, the so-called co-financing. A minimum of 12.5% of the budget requested from NWO must be cash co-financing. This cash co-financing will be added to the budget requested from NWO and must be included in the budget. NWO is the main financier and co-financing must not exceed the budget requested from NWO. The contribution in the form of co-financing should be confirmed in a letter by the private and/or public partners who are acting as co-financier to be enclosed with the full application (Letter of Commitment; see also Chapter 3.4). The cash contribution will be collected from the partners after grant award by NWO, and will be paid out simultaneously with the NWO grant in instalments. No cash contribution is expected from schools, but in-kind contribution is encouraged.

Staff costs

Grants can be requested for the salary costs of the academic staff to be appointed for the research. The duration of these appointments may never exceed the duration of the grant awarded for the research.

The grant is awarded subject to the Scientific Research Funding Agreement 2008 concluded between NWO and VSNU on 2 October 2008. The aforementioned agreement came into effect on 1 July 2008, runs until 30 June 2009 and will be tacitly renewed by periods of one year, unless NWO or the VSNU give written notice of termination at least six months prior to the expiry date of the agreement.

Academic staff

The term academic staff is understood to include research staff: PhD candidates and postdoc researchers. The research activities of these staff members will generate academic output. The following criteria apply for each category:

PhD candidate

- A PhD candidate may only be appointed from the first year;
- The tenure is for a maximum of 4 years with an FTE of 1.0.

Postdoc researcher

- A postdoc researcher must have obtained their PhD at the time of the appointment, or the date of the PhD defence should already be set and take place within 6 months of appointment;
- The tenure for a postdoc researcher is between 2 and 4 years;
- A part-time tenure (at least 0.4 FTE) is possible, provided this is requested on submission of the application.

Replacement grant

Professors, Associate Professors, Assistant Professors and employees of higher education may be exempted from part of their teaching duties by means of a replacement grant so that they can focus on research for the Human Capital programme for a specific period of time. A replacement grant for conducting research will only be granted if the applicant can demonstrate that a PhD candidate or postdoc grant cannot fulfil the intended purpose. The salary costs of the replacement can be covered by the replacement grant (at the salary level of a postdoc). A replacement grant can be requested for up to four years with a maximum appointment of 0.5 FTE a year.

It is possible and may have added value to perform part of the research at one of the partners in the consortium. Where appropriate, this should be substantiated in the research proposal.

Material costs

A grant can also be requested, with the application, to cover material costs such as:

- Procuring special equipment and consumables needed for the research, with the exception of computers;
- Conducting interviews and surveys;
- Procuring databases;
- Travel and accommodation costs;
- Organising national and international workshops and meetings.

Not all expenses are covered:

- The costs of using computers at university computer centres and fees for using laboratories do not qualify for a grant;
- Accommodation, overhead and depreciation costs do not qualify for a grant;

- The costs of equipment, consumables, or administrative or technical assistance that are part of the standard facilities package of a university or research institute do not qualify for a grant either.

In addition, the following costs are not covered:

- Costs incurred to obtain an auditor's report;
- Costs incurred for arranging and/or acquiring and performing contract research, including any other indirect costs attributable thereto;
- Reservations for future costs or the formation of reserves.

Material costs should be accounted for both financially and substantively. Material costs may not exceed 20% of the total budget costs. When awarding a grant NWO reserves the right, for budgetary considerations, not to assign the full amount for requested material costs.

Bench fee

PhD candidates and postdoc researchers will be assigned a personal bench fee. This is a fixed amount for the researcher (e.g. for attending conferences, publication of the dissertation, etc.). The amount of the bench fee is set at a maximum of €5,000 and depends on the type of researcher and their tenure.

3.3 When can applications be submitted

The application procedure consists of two steps: the submission of an Expression of Intent and the submission of the full proposal. **Please Note!** A full proposal can only be submitted after an Expression of Intent has been submitted.

The closing date for the submission of Expressions of Intent is **13 January 2015**, 14:00 hours (CET).

The closing date for the submission of full proposal is **17 March 2015**, 14:00 hours (CET).

The application form for the Expression of Intent can be downloaded from the website. The application form for the full proposal will become available on the same website shortly after the deadline for Expressions of Intent.

3.4 Preparing an application

Your grant application has two parts: a fact sheet and the application form (including at least one 'Letter of Commitment').

- You complete the fact sheet directly in NWO's electronic application system Iris.
- The application form is on the grant page for this programme on the NWO website. As soon as you have completed it you can add this form to the Iris fact sheet as a PDF file.

Expression of Intent

The fact sheet functions as an Expression of Intent. The Expression of Intent should be submitted in English and via Iris. In this phase, therefore, you need not yet submit a fully detailed research proposal. The fact sheet includes the name and contact information of the main applicant, the envisaged title and an intended summary. The summary of the proposed research does not exceed 400 words and contains at least: the name of the envisaged external partner(s), a concise description of the proposals and the applicable social sciences discipline code. The

submission of the fact sheet counts as an Expression of Intent and is mandatory to submit a full proposal.

Application form

Applications must be in English and will only be accepted if the application form has been used. For further instructions please consult the application form, which can be downloaded from the NWO website.

Letter of Commitment

The partner's financial contributions must be confirmed in a Letter of Commitment to be attached to the full application as an appendix titled 'Letter of Commitment'. This Letter of Commitment must explicitly specify the committed financial contribution. This letter consists of an explicit statement of the agreed financial and/or capitalised staff and/or material contribution, an explanation of how the co-financing will be used and an explanation of how the results of the research will contribute to developing practice. The amounts specified in this letter must correspond with the project budget in the research proposal and the specified activities in the description or planning of the research. The amounts stated in the letter should match the budget amounts specified in the application; the letter must also state that the financial contribution will be made to NWO. If the application is successful NWO will, after receipt of the start forms, pay the full grant amount to the project manager's institution in instalments. The Letter of Commitment must be attached to the application and is part of the assessment. Further agreements must be recorded in a consortium agreement (see Section 3.5 and the appendix).

3.5 Specific conditions

NWO Framework for Public-Private Partnership (see appendix)

At the start of the project the consortium partners must conclude an agreement on the rights (e.g. copyrights, intellectual property, etc.) on products, technologies, etc., developed in the project.

NWO uses a PPP Framework for public-private and public-public partnerships, which describes the minimum requirements a consortium agreement must meet. This involves recording agreements on consortium governance, finances, publications, intellectual property, liability and disputes. The NWO terms of reference regarding intellectual property (IP) and knowledge transfer are set out in this PPP Framework. When a researcher submits a proposal, the consortium partners must confirm that they have taken note of the PPP Framework, the NWO terms of reference regarding IP and the knowledge transfer rules contained therein. Before a granted project begins the project partners must conclude a consortium agreement in accordance with the PPP Framework.

The MaGW Division Committee reserves the right to have an application shortened or changed for substantive scientific, policy or budgetary reasons as a condition for granting the application. If an application is granted MaGW usually appoints the principal applicant as the project manager. The latter will receive the MaGW instructions for project managers and the general grant conditions of NWO.

The payment of staff and material costs will be according to the instalments specified in the award letter. The last instalment will be paid after approval of the final report and the financial statements.

MaGW monitors progress and evaluates the results of the funded research based on the planning and proposed research results specified in the application. If the actual results deviate significantly from the proposed results, MaGW reserves the right to apply sanctions as specified on awarding funding.

3.6 Submitting an application

An application can only be submitted to NWO via the electronic application system Iris. Applications not submitted via Iris will not be admitted to the selection procedure. A main applicant is obliged to submit their application via their own Iris account.

If the main applicant does not have an Iris account yet then one should be created no later than one day prior to submission. Any possible registration problems can then be solved on time. If the main applicant already has an Iris account then they do not need to create a new account to submit a new application.

For questions of a technical nature, please contact the Iris helpdesk.

4 Assessment Procedure

4.1 Procedure

The first step in the assessment procedure is to determine the admissibility of the application. This is done using the conditions stated in Chapter 4.2 of this Call for Proposals. The NWO Code of Conduct on Conflicts of Interest applies to all persons and NWO staff involved in the assessment and/or decision-making process.

The different steps in the assessment process are described below. Applicants can track the progress of the assessment procedure through their Iris account. No rights can be derived from this.

The proposals are provided with commentary in a peer review procedure by two academic members of an independent international assessment committee based on the assessment criteria published in this Call for Proposals. In addition, two social members of the assessment committee will evaluate and comment on the grant application based on the knowledge utilisation criterion. Applicants will then have a period of ten working days in which to respond to these comments in writing. The applicant's response should not exceed 1,500 words and should not be a major modification of the original grant application; it should merely explain the points commented on.

Subsequently, the assessment committee advises the MaGW Division Committee and the Overarching Programme Council for Educational Research (*Overkoepelende Programmaraad voor het Onderwijsonderzoek*, OPRO) as regards the quality and the prioritisation of research proposals submitted to them. They will decide whether to reject or award the grant on the basis of this recommendation, where necessary with the help of policy considerations and based on the available resources.

NWO gives all full proposals a qualification. The applicant is informed of this qualification when the decision about whether or not to award funding is announced. For further information about the qualifications see: <http://www.nwo.nl/kwalificaties>.

Time line

November 2014	Call for Proposals
13 January 2015	Deadline for submitting Expressions of Intent
17 March 2015	Deadline for submitting full proposals
March 2015	Secretariat confirms processing of the application and notifies applicants
April 2015	Assessment committee reviews
May 2015	Rebuttal of applicants
June 2015	Assessment committee meeting and preparing judgments
July 2015	Decision by Board of Social Sciences and Overarching Programme Council of the Netherlands Initiative for Educational Research

4.2 Criteria

Criteria for taking the application into consideration

The secretariat verifies whether the application meets the following submission criteria:

- the Expression of Intent has been submitted on time through Iris;
- the proposal has been submitted on time through Iris;
- the application is in English;
- the compulsory application form has been used;
- all questions have been answered;
- the maximum number of words has not been exceeded;
- the requested research staffing falls within the criteria.

Assessment criteria

The international assessment committee assesses an application against the criteria listed below on the basis of the information provided in the application. The criteria are weighted equally. A number of relevant points are listed for each criterion.

I. Academic quality

A. *Academic relevance*

Does the proposed research make an original contribution to theory, methods, design or knowledge? Is the proposed research innovative? Is there cooperation between complementary research institutions? Is there interdisciplinary cooperation within and between sub-projects in the research? Are there good cross-connections between the sub-projects? Does the research build on existing research in terms of substance?

B. *Research questions and objectives*

Are the issues and research questions clearly defined, sufficiently demarcated and properly detailed? Originality of the issue: does the proposed research contribute to new theories or research methods, or will original empirical results be obtained?

C. *Academic approach and methods*

Is the proposal theoretically well-substantiated? Are the proposed methods and techniques and the proposed framework suitable for studying the issue and answering the research questions?

D. *Planning and feasibility*

Is the work plan logically structured, well phased, cohesive and realistic? Are the listed sources accessible and suitable to answer the research questions? Is the research clearly demarcated and is the timetable feasible and realistic?

E. *Past performance of the applicants*

What is the academic quality of the applicants in terms of publications, other performance and results of previous funding rounds?

F. *Financing and organisation*

Is the proposed research feasible and achievable? Is the requested budget in proportion to the central research question? Is the budget used appropriately? How is the management of the research project organised?

II. Knowledge utilisation

A. *Relevant to the objective of the Human Capital programme*

To what extent is the proposal relevant to the description of the research programme?

B. *Composition of the consortium*

What is the quality and the added value of the consortium partners for the proposal? Is the consortium robust, balanced and cohesive? What

experience do the knowledge partners have with practice-oriented research? Does the consortium have a robust organisation? Is coherence adequately safeguarded?

C. *Knowledge co-creation with practice*

Are end users effectively involved in the design, implementation and steering of the research? Is the intended purpose of knowledge utilisation sufficiently clear?

D. *Effectiveness and feasibility of the approach*

What steps will be taken to make the knowledge useful for consortium partners and third parties? Will activities be undertaken to reach the target group? Is the proposed approach effective? Will the potential of the consortium be put to optimal use? What revenues will the specific activities generate? Is the activity or product suitable and useful for the intended purpose and the target audience?

E. *Involvement of consortium partners*

How does co-financing fit in the budget? How does the allocation of the budget relate to the end products and/or results to be delivered?

Prioritisation

Applications that are eligible for funding on account of their qualification will be prioritised if not all proposals can be accepted within the available budget. Prioritisation is subject to the aforementioned assessment criteria.

5 Contact and Other Information

5.1 Contact

5.1.1 Specific questions

For specific questions about Human Capital – 21st Century Skills and this Call for Proposals please contact:

Edwin Hubers
E: e.hubers@nwo.nl
T: 070 349 4313

5.1.2 Technical questions about the electronic application system Iris

For technical questions about the use of Iris please contact the Iris helpdesk. Please read the Iris manual before consulting the helpdesk.

The Iris helpdesk is available from Monday through Friday from 11.00 – 17.00 hours at +31 900 696 4747. Unfortunately not all foreign phone companies allow you to phone a 0900 number in the Netherlands. You can also send your question by e-mail to iris@nwo.nl.

6 Appendices

6.1 NWO-Framework for Public-Private Partnership (.pdf)

6.2 Regulations Governing Contributions in Kind (.pdf)

Published by:
Netherlands Organisation
for Scientific Research

Visiting address:
Laan van Nieuw Oost-Indië 300
2593 CE The Hague
The Netherlands

January 2015

