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**Synergies  
between research  
and education**

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# INTRODUCTION

The purpose of this paper is to provide concrete recommendations on how funding agencies, institutional leadership and administrative support services can facilitate synergies between research and education. The paper is based on a Forsterk project funded by the Research Council of Norway, and with support from the Norwegian Directorate for Higher Education and Skills.

The project has collected information through two workshops, one with key administrative resource personnel in European university alliances in which Norwegian universities participate, and the other with research and study administrative resource personnel in a wide range of Norwegian higher education institutions. The latter workshop was conducted in Brussels in conjunction with a seminar on links between research and education. During the seminar, key actors from the funding agencies in Norway and the EU, university networks, alliances and academic communities contributed. All Norwegian participants at the seminar have been sent a draft of this paper, with the opportunity to comment on and supplement its content.

The statements and recommendations presented here are based on the input received. The paper is limited to the work in the project that addresses the links between education and research. No account has been made of how efforts to strengthen these links will affect other priorities and any recommendations should be followed up as part of an overall assessment.



# APPROACHES TO SYNERGIES BETWEEN RESEARCH AND EDUCATION

Synergies and links between research and education are frequently mentioned in both national and European policy documents, but the operationalisation of these types of links is often unclear. The Norwegian Act relating to universities and university colleges states that universities and university colleges shall "offer higher education based on the foremost in research, academic and artistic development work and experiential knowledge", and that they shall "carry out research and scholarly and artistic development work".<sup>1</sup> Higher education is always research based in the sense that the content and working methods of the study programmes reflect research in the respective fields. How this happens in practice varies according to the distinctive nature of research communities and educational programmes.

In a Norwegian context, a report (Norwegian only) from Universities Norway from 2010 is still a relevant reference point. The report aims to pragmatically answer what the objects clause of the Act may mean in disciplines, professional subjects and fine arts, respectively. The report has been prepared in collaboration between Universities Norway's research committee and education committee, and differentiates between four forms of research-based teaching:

- Teacher-centred teaching in which the content is research based
- Teacher-centred teaching that highlights the research process and scientific mindset
- Teaching in which the student actively participates in a discussion of research-based content
- Teaching in which the student participates in "investigative" learning processes

In its own follow-up report (Norwegian only) from 2015, Universities Norway addresses the importance of the interaction between research, higher education and innovation, not least in light of the climate crisis and global challenges.

The White Paper on Quality Culture in Higher Education from 2017 points out that what distinguishes higher education from other types of education is that it takes place in academic environments in which the educators are also researchers<sup>2</sup>. By extension, links between research and education involve offering teaching provided by researchers and based on their own research. Research-based education also means "that teaching and learning activities are based on research into what makes for good learning, and that academic staff use their research skills to develop and research study programmes, teaching and student learning".<sup>3</sup> It also includes research training at the PhD level. In the wake of the quality report, the term "education-based research" has been used to emphasise the need for an educational approach to quality issues that are essential in strengthening both research and education.<sup>4</sup>

The Norwegian Government's long-term plan for research and higher education states that "Education policy is important for strengthening innovation and development in all sectors. Research-based education is an important cornerstone, both for filling positions in the public and private sectors with the right expertise, and for strengthening research and innovation so that the knowledge is put to use. An important link between studies and research is the PhD programme, which will help meet the need for research skills for both research communities and the labour market. If more newly qualified researchers are employed outside academia, this may contribute to greater use of research in Norwegian companies and public enterprises."<sup>5</sup>

Also included in the picture are synergies between instruments for education and research, and their management. The design of policy instruments can facilitate links between educational and research activities, within individual funding instruments or in interaction.<sup>6</sup>





# POLITICAL BACKGROUND

Links between research and education have long been a political focus in Norway and to an increasing extent in the EU.

The Norwegian Ministry of Education and Research has long promoted such linkages, for example, by funding the establishment of instruments that promote links between research and education, including UTFORSK, INTPART and the Centres of Excellence in Education. In Norway's input to the new framework programmes for education, research and innovation in the EU, emphasis was placed on the need for synergies.<sup>7</sup> This is also reflected in the Government's strategies for Norwegian participation in Horizon Europe and the European Research Area,<sup>8</sup> and in Erasmus+ and the European Education Area.<sup>9</sup> There is an untapped potential for synergies between the two programmes.<sup>10</sup>

The goal of synergies between research and education is more prominent in the current programme period (2021–2027) compared to the previous programme period (2014–2020). This is particularly central to some of the calls for the EU's European Universities initiative.<sup>11</sup> Politically, the goal has also received increased attention. The White Papers on the European Research and Innovation Area,<sup>12</sup> the European Education Area,<sup>13</sup> and the European Research Area Policy Agenda for 2022–2024, Action 13<sup>14</sup> also emphasise the importance of the interaction between research and education.

In order to highlight possible links in policy instruments, increase their impact and encourage complementarity, the European Commission has also published notes that specifically focus on synergies between the Marie Skłodowska-Curie Actions (MSCA) and Erasmus+ and MSCA and the European Institute of Innovation and Technology.<sup>15</sup> The note on synergies between the MSCA and Erasmus+ emphasises the common features of the two programmes, and highlights the synergies between different Erasmus+ instruments and the MSCA, including through examples.





# WHY ARE SYNERGIES IMPORTANT?

A good interaction between research and education helps to strengthen the quality of both research and education, and the interaction between these activities is mutually reinforcing.<sup>16</sup>

For development work in the study programmes, the same quality criteria apply as in research: breadth, depth, originality, creativity, methodological clarity and nuanced understanding.

It is therefore not surprising that the assessment criteria for the allocation of funding for research and education increasingly overlap, both nationally and internationally. The expectations of relevance, project design, impact and dissemination, management and collaboration are similar to each other.

The White Paper on Quality Culture in Higher Education reminds us that "learning is an active process that takes place in interaction and co-production between students and educators and between the students themselves, and not by students passively receiving information."<sup>17</sup> Through references to, for example, learning theorist John Dewey, the report expresses a view of knowledge that is often referred to as relational or constructivist, with emphasis on:

- collective social systems and institutions as carriers of knowledge.
- knowledge as part of action and problem management
- change and development of knowledge



Students are taught to see, think, read, write and work in certain ways by the researchers in their academic environments. Teaching is both one of the most important public arenas for the dissemination of research and is also an arena in which students can be active participants in the development of new knowledge. Learning and knowledge are developed together, in relationships and in interaction between people.

Research-based education shall ensure the education of "candidates who can read and use research, ask critical questions and use scientific methods to solve tasks during the study period and in working life. Students who come into contact with research communities at an early stage learn to understand how research-based knowledge is produced."<sup>18</sup> The students' learning outcomes are strengthened and links between research and education equip them with relevant knowledge, competence and skills, such as critical reflection, curiosity, problem solving and independence. Through student-active research, students learn research methods, such as collecting and analysing data. Practical experience of research prepares students for working life, within or outside academia, by developing their skills.

PhD education is an education that gives the candidate competence in research through both a training component and through conducting their own independent research. Here, the benefits of the link between research and education are obvious: Being integrated into a research environment and being supervised by one or more researchers is an essential part of PhD education.

However, links between education and research are important at all levels of education, both for the sake of the students' learning outcomes and for the future recruitment of researchers.

It is also important that teaching methods are based on research: learning and assessment methods based on knowledge and research on what provides good learning contribute to increased quality of study programmes, and a better learning outcome for the students in line with what they want to achieve.

Research-based teaching in the sense of teaching provided by researchers based on their own research is a key part of academic interaction at research-intensive universities and university colleges. This is important for research because it provides an arena for dissemination and discussion in which students can contribute to developing research with new ideas, perspectives, critical questions and in defining new research agendas. Students can also make important contributions to parts of the research work, for example, data collection, analysis and similar involvement in relevant ways. Student involvement can take place through participation in subject lunches, hackathons, subject-critical days, etc. Furthermore, students' participation in research projects and an active research environment can inspire them to pursue a career in research, thereby contributing to the recruitment of skilled candidates to the research field. An analysis carried out by the Norwegian Agency for Quality Assurance in Education, NOKUT, shows that the Centres of Excellence (CoE and SFI) see students as resources in research, through writing assignments or contributing to research projects<sup>19</sup>.

# RECOMMENDATIONS

Based on the project's context, approaches and data collection, the sections below summarize recommendations to facilitate stronger synergies between education and research. The recommendations are aimed at the institutional level, national and EU authorities, as well as policy instruments. They are divided into the following categories:

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**Strategic anchoring**

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**Cultural change**

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**Structural changes**

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**Communication  
and mobilisation**

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**Instruments that  
promote synergies**



# Strategic anchoring

In order to succeed in strengthening synergies between research and education, anchoring at management level is essential, in Europe, as well as nationally and institutionally. These days, structures are largely siloed, without a holistic perspective that sees education and research in context. A lot of pioneering work is taking place in academic environments, but a more systematic structural approach requires a holistic perspective at the political level and in policy instruments, as well as support from both senior and line management at the institutions. Strategic anchoring at different levels can help connect in a number of ways:

## NATIONAL AND EUROPEAN LEVEL:

- Synergies between research and education must be prioritised at both national and European levels. It is therefore vital to have robust and close interaction with regard to policy development and the administration of various schemes at a European level and between the Ministry of Education and Research and the funding agencies.
- Policy Governing bodies must organise their cooperation in new ways, and this must be endorsed by the management of national and European funding agencies responsible for research and education.

## INSTITUTIONAL LEVEL:

- The senior management of higher education institutions can facilitate robust institutional support and recognition of the importance of linking research and education. It can prioritise synergies and help raise awareness and visibility of how to connect education and research.
- Institutional leadership can help break down silos internally at the institutions. This can take place through joint meetings and processes in relevant committees at all levels, as well as the increased use of project and matrix organisation across academic or administrative lines.
- The institutional leadership can set clear expectations and highlight added value for both researchers and students by adopting a more systematic and comprehensive approach to research and education. Expectations, requirements and initiatives from institutional leadership will contribute to a more comprehensive support system that highlights the academic environments' opportunities for better linkages.
- In the development of institutional policy, management can ensure involvement and perspectives from both a research and educational perspective, in terms of both academic and administrative lines.



# Cultural change and recognition

Strategic anchoring of the goal to strengthen links between research and education at leadership level in Europe, nationally and, not least, at the institutions can contribute to a cultural change. In many evaluation contexts, research is often regarded as more prestigious than education. Thus, educational activities are often considered secondary, and for many researchers, academic focus on and participation in research-driven activity are given highest priority.

A culture of viewing research in an isolated sense and at its most prestigious is reflected in and reinforced by the structures in funding opportunities; external funding for educational projects often entails relatively few funds in relation to the workload associated with application and project implementation. The lack of funding opportunities for projects that transcend the distinction between research and education also contributes to maintaining a culture of viewing the activities as separate, and in which research activities benefit the most. Thus one of the clearest conclusions to emerge in our work is about the need for cultural change. In order to strengthen holistic thinking about research and education and the links between them, activities must be put on a similar footing to a greater extent. However, cultural change takes time, although the following measures could contribute to such a long-term change:

## OVERALL:

- The links between research and education can be recognised through, for example, good practice awards, either at an institutional level or at the level of national/international awards. This can contribute to visibility, awareness and increased recognition.
- On all levels, efforts must be made to understand complementarity rather than competition between education and research, and seek to identify work methods that contribute to this.
- Efforts to raise the status of education and to promote synergies between research and education, including through policy instruments, must be seen in context.

## NATIONAL AND EUROPEAN LEVEL:

- Funding agencies at national and European levels can contribute to raising the status of educational development work. Funding in the field of education is negligible compared to the requirements for application, effort and expectations of impact. More favourable schemes that are proportionate to research funding would help raise the status of external funding for education.
- The European process CoARA, the Coalition for Advancing Research Assessment, can contribute to the increased recognition of education by concretising and rewarding educational competence as part of the career path.

## INSTITUTIONAL LEVEL:

- Educational activities, including quality work, can be rewarded and valued more highly at the institutions. CoARA can help to specify how this can be achieved, and the institutions can take part in this development and actively participate in the design of new merit schemes for education. It should also be taken into account that some academic positions currently do not permit teaching activity, and consideration should be given to how this should be handled in order to ensure career opportunities for people in these types of positions.
- Institutions and academic communities should have a more research-based approach to education, through skills enhancement and new ways of working based on a culture of sharing, curiosity and team thinking.
- Rather than promoting specific externally funded instruments, to a greater extent, institutional facilitation can be organised around a portfolio approach with a focus on career building and the development of individual researchers and academic environments.





# Structural changes to facilitate interaction

In addition to leadership support and measures to promote cultural change in a holistic approach to research and education, structural and organisational factors can be adapted or changed in order to remove barriers. While the main actors in this landscape are those who conduct research and teach at the institutions, the other structures are largely separate. At the institutions, this applies both to academic structures such as education committees and research committees, but also to study-administrative and research-administrative divisions. Nationally, there tend to be separate funding agencies, and in the EU, education funds are mainly managed by DG EAC, while research funds are mainly managed by DG RTD.

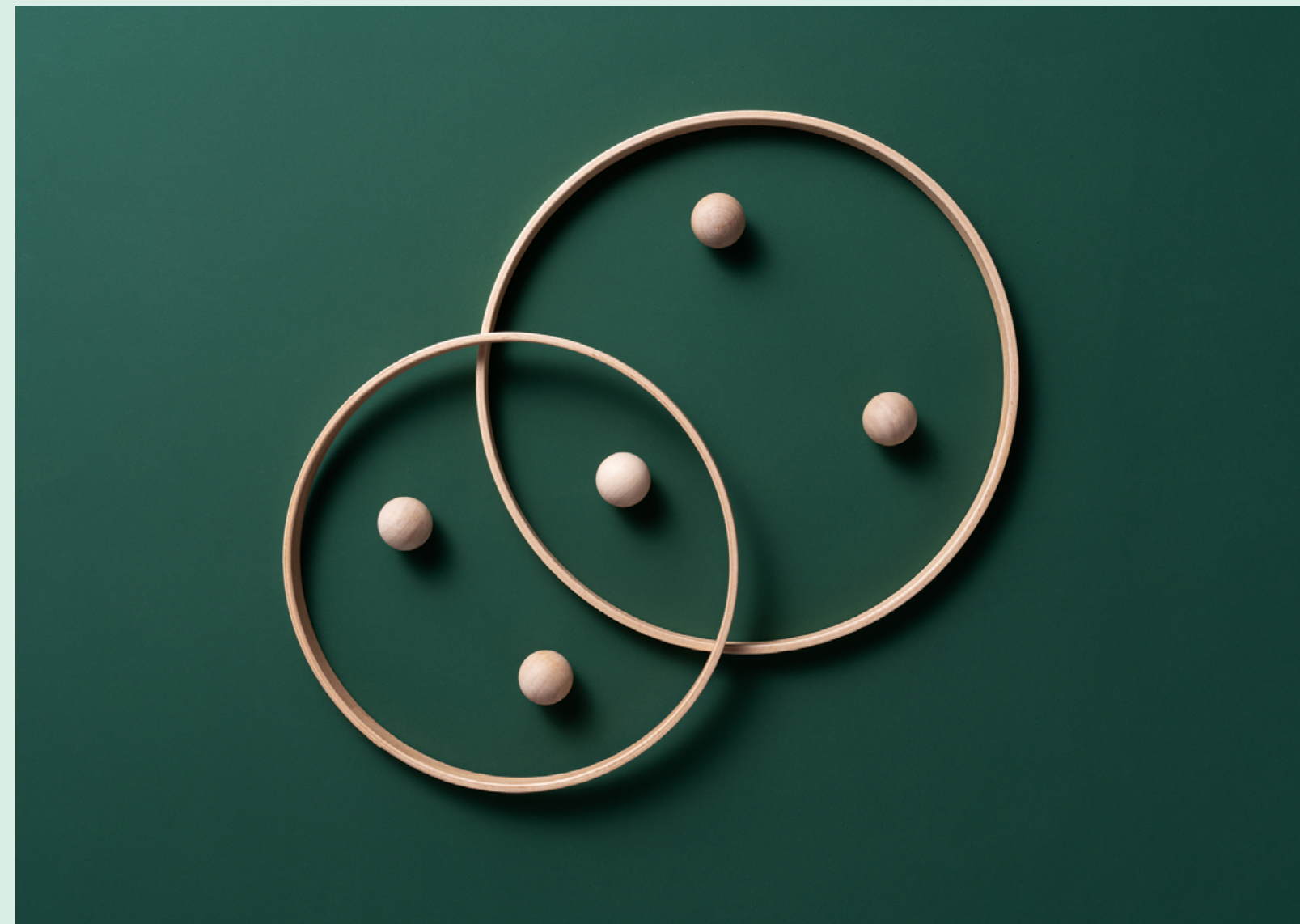
Interaction between these structures can help facilitate a more holistic approach to education and research and better support for individual researchers and academic groups. The following measures can help with this:

## OVERALL POLICY FRAMEWORK:

- Procedures and structures for cooperation and dialogue should be established to promote mutual understanding, knowledge exchange and coherence in the approach to research and education. Introducing this as an expectation at the institutional level, in the policy instruments nationally and in the EU at the political level could be considered. Through closer cooperation and dialogue, funding agencies in the EU and Norway can facilitate and highlight opportunities for complementary activities for projects.
- Frameworks can be developed for research and teaching activities based on a more holistic approach. On a national and European level, there should be good coherence between strategies for research and higher education, and good dialogue between the units that establish framework conditions and are responsible for funding.
- Consideration should be given as to whether the overall framework of the funding system adequately facilitates synergies between research and education, and unintended obstacles and influence on the status of various forms of activities should be avoided.
- In the governance dialogue with the institutions, a more holistic approach to research and education may be considered, particularly in connection with externally funded instruments. National ambitions and targets that can be operationalised should be established. At the same time, higher education institutions must have considerable flexibility to identify optimal ways of realising the connection between education and research.
- Obstacles in the current financing and quality systems should be removed. Researchers call for more flexibility with regard to designing educational programmes closely linked to research activities.

## ORGANISATIONAL STRUCTURES AT THE INSTITUTIONAL LEVEL:

- Research and education administration should work more closely to support academic communities with reliable information about opportunities. This requires a culture of sharing and involvement across established line structures. Structures, procedures and frameworks for cooperation should be established in order to obviate the dependence on individuals.
- The support system should have more overall knowledge across the fields of research and education, and priority should be established for meeting places.
- Institutional support structures should be coordinated and developed collaboratively.
- To establish more collaboration, there can be more work in teams and projects across different units. In particular, cooperation should be established at the advisory level. Co-location of the support network may also be considered.
- The support system should acquire knowledge about the breadth of policy through participation in training, events and the like, and contribute knowledge and expertise across research and education.
- What constitutes appropriate organisation can be assessed, and new organisational models in the administration can be tested, for example, target group-oriented organisation, rather than thematic organisation. Alternatively, it is possible to have dedicated resources with responsibility for synergies, possibly in shared positions.
- The support system can jointly engage in dialogue with academic environments and management.





# Communication and mobilisation

The importance of synergies between research and education, and of research-based education, is emphasised, as described in European, national and institutional strategies. At the same time, this emphasis is to a varying extent defined, filled with specific content and exemplified. There is a demand for better information flow and access to information, as well as more competence building, visibility and sharing of good practice. This applies to administration and management, but also to researchers/educators and students. Communication and information can be strengthened in the following ways:

- The authorities, funding agencies and institutional management must define and give content to the ambitions for synergies. This will help to highlight the added value and contribute to a change of practice where appropriate. Institutions and funding agencies should contribute to competence development in this field and to increased overall knowledge of goals and working methods in both the education and research fields. Efforts should be made to promote a common understanding that synergies are important and useful for learning, development and collaboration.
- There is a need for aggregated information at the EU level, in national policy instruments and at the institutions about instruments for quality development in research and education, including examples.





# Instruments that promote synergies

Today, policy instruments are largely divided, at both a European and a national level. Research and innovation funding is primarily organised by Horizon Europe at a European level, and in the case of Norway, in the Norwegian Research Council's portfolio at a national level. Similarly, education funds are organised in the portfolio of Erasmus+ and the Norwegian Directorate for Higher Education and Skills, respectively. Research activity is normally not permitted in educational projects, nor is educational activity relevant to most external funding for research. This may be perceived as an artificial distinction for researchers in the higher education sector with responsibilities and roles in both types of activities. The following changes in policy instruments can help stimulate links between research and education:

## INSTITUTIONAL LEVEL:

- Closer cooperation between research and education administration will contribute to providing reliable information about opportunities for academic environments. Targeted information about opportunities to apply for funding and how education and research can be viewed in context in one or more calls must be made readily available to the academic environments.

## NATIONAL AND EUROPEAN LEVEL:

- Funding agencies nationally and in Europe must provide structured and targeted information about opportunities in both education and research, and how these can be seen in context. Consideration should be given to whether structures should be brought together rather than organisationally divided.
- At a European level, DG EAC and DG RTD can cooperate more closely to facilitate calls that require both educational and research activity.
- Schemes should be developed, at a European, national and institutional level to enable funding to be sought to expand research projects with educational activities or vice versa, and to exploit opportunities for interaction between Erasmus+ and Horizon Europe, as well as national instruments.

- The European Commission and national funding agencies can develop guidelines for projects on complementary opportunities, similar to the European Commission's work on Erasmus+ and MCSA. Earmarked calls may also be considered.
- The funding instruments must be designed in such a way that allows for the incorporation of both educational and research components into the same project. There can be a more general approach to thematic challenges and an acknowledgment of the importance of both research and education in solving societal challenges, such as sustainable transition.
- The involvement of students should be requested in research projects. Examples may be offering research practice, involving students in data collection and analysis, and in planning and implementing projects. Similarly, increased scope for research in educational projects should be considered.

- There should be more calls that explicitly require links between educational and research activities, and the adaptation of the evaluation criteria so that this is specified and valued.
- There is not necessarily a need for many new calls, but adjustments can be made and potential synergies identified between existing instruments through better coordination.
- Seed funding is proposed for pilot projects that have synergies between research and education as their objectives.



# ENDNOTES

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- 1 UHL Section 1-3
  - 2 White Paper no. 16 (2016–2017) , p. 45.
  - 3 White Paper no. 16 (2016–2017) , p. 45.
  - 4 See, for example, Astrid Birgitte Eggen in Khrono 15 February 2017.
  - 5 White Paper no. 5 (2022–2023) Long-term plan for research and higher education 2023–2032, p. 66.
  - 6 See, for example, the discussion of the need to align funding opportunities in the EU to realise opportunities for synergies in the European University Association's policy input from March 2020: Building synergies between education, research and innovation by aligning the EU funding programmes.
  - 7 <https://www.regjeringen.no/contentassets/bd1c6c06c5c043b0a7cf571692216e26/synergies-between-innovation-research-and-education.pdf>
  - 8 <https://www.regjeringen.no/no/dokumenter/strategi-for-norsk-deltakelse-i-horisont-europa-og-det-europeiske-forskningsomradet/id2863319/>
  - 9 <https://www.regjeringen.no/no/dokumenter/strategi-for-norsk-deltakelse-i-erasmus-og-det-europeiske-utdanningsomradet/id2863355/>
  - 10 State of Higher Education Report 2020, p. 95.
  - 11 European Commission, 2023, <https://education.ec.europa.eu/education-levels/higher-education/european-universities-initiative>
  - 12 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A New Era For Research And Innovation.
  - 13 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0625&qid=1675865078934>
  - 14 Action 13: HIGHER EDUCATION INSTITUTIONS – Empowering higher education institutions to develop in line with the ERA, and in synergy with the European Education Area, in the European Research Area Policy Agenda (europa.eu)
  - 15 Synergies between the Marie Skłodowska-Curie Actions and Erasmus+ in the area of higher education  
Synergies between the Marie Skłodowska-CurieActions and the European Institute of Innovation and Technology
  - 16 White paper no 16, 2016-2017
  - 17 White Paper no. 16, 2016–2017 p. 51.
  - 18 White Paper no. 16, 2016–2017 p. 45.
  - 19 Research as foundation for education: Centres of Excellence and good practices
- Picture sources: Getty Images – page 1, 5, 7, 8, 13, 15, 17, 19, 21





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