

FACTS AND FIGURES ON PARTNERSHIPS

for vocational education and re-skilling



**KATA
PULT**

AANJAGERS
VAN DE KENNIS
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HELLO, OUR NAME IS KATAPULT

We live in a rapidly changing world. Occupations come and go, knowledge ages at a rapid speed. As a result, the gap between education and the business community widens. Bridging this gap requires courage; new solutions, innovative thinking. To achieve this we need to join hands.

Our name is Katapult. We are a network of driven professionals originating from the fields of education, business, research and government. We entail all sorts of disciplines and regions. Most of us closely collaborate in so-called Centers; the Katapult initiators. These collaborations connect (vocational) education with (professional) practice. We complement each other: together we are able to achieve things quicker. As a result, our community accelerates the movement of change towards futureproof education and professional practice by joining forces.

At Katapult, we share knowledge, learn from each other and develop good practices. We help develop aspiring collaborations and facilitate the professionalization of existing collaborations: from start-up to scale-up. This way we actively contribute to a culture of collaboration in vocational and higher education.

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Preface

This is Katapult's first publication. In this first report we review the development of the Dutch community Katapult: a community of Public Private Centres for Vocational Education and Training. These Centres are public private ventures in which Secondary Vocational Education Schools (a.k.a. Career and Technical Education), Universities of Applied Sciences (a.k.a. Community Colleges), companies, governments and researchers collaborate in order to achieve futureproof professionals and schooling. In recent years, this community has grown extensively, both qualitative and quantitative. In the community of over 130 Centers more 4,500 companies, about 50,000 students, almost 4,000 teachers and 83 Secondary Vocational Education Schools (SVES) and Universities of Applied Sciences (UAS) are currently participating. Over the last 5 years, special curricula and re-skilling programs were established, knowledge networks transformed into true communities and unique solutions were found for regional challenges.

This annual report will first show the many different approaches that exist within this community. Also it present the results and outcomes by providing insight in the facts and figures of this community. The second half of the report focuses disseminating several good practices that exist within the community for inspiration.

Katapult as a community aims to further accelerate the movement of renewing and reinventing education and professions by joining forces with all parties involved. Therefore, we welcome new public private ventures - both nationally and internationally - and facilitate their development. Together we can stimulate a the culture of collaboration in vocational education and training.



PART 1: FACTS AND FIGURES

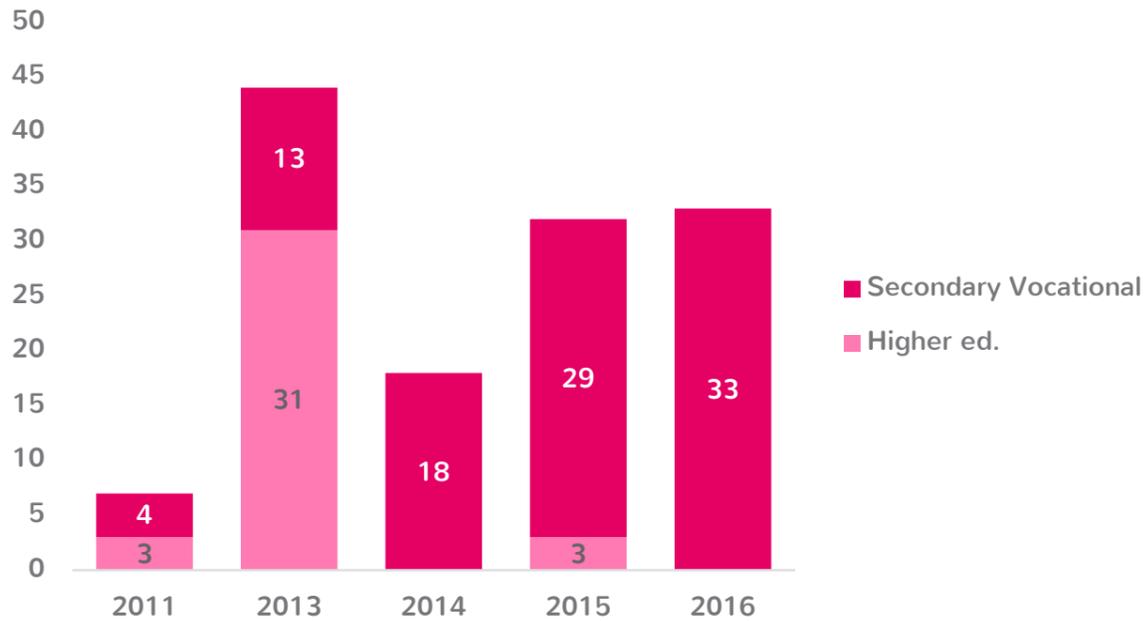
In the Netherlands, 134 Public Private Centers* for vocational education and training and higher education have been established between 2011 and 2016. After an initial pilot phase with nine Centers of Expertise and Centres for Innovative Craftsmanship, their number quickly multiplied toward 50 as of 2013. Initially all Centers focused on education, research, valorisation and training for the nine economical top sectors. A third impulse came in 2014 thanks to the Regional Investment Fund, when partnerships welcomed that were not limited to the nine economical top sectors only.

The average Center comprises 35 companies and organizations, representing more than 4,500 business relationships. With an average participation of 375 students (with occasional peaks of more than 2,000 per Center), the impact of Centers on vocational education is already high. Each Centre has an average of 30 actively involved teachers, in some Centers this figure even reaches 200 teachers. This amounts to approximately 50,000 students and nearly 4,000 teachers per year. To date, many of the government-funded vocational educational institutes in the Netherlands have joined the initiative. 24 of their 35 government-funded Universities of Applied Sciences (representing approx. 96% of the market) now participate in one or more Centers. Among Secondary Vocational Educational Schools (SVES), this ratio is similar: 59 vocational schools participate and about 20 vocational institutes that offer courses at a vocational level.

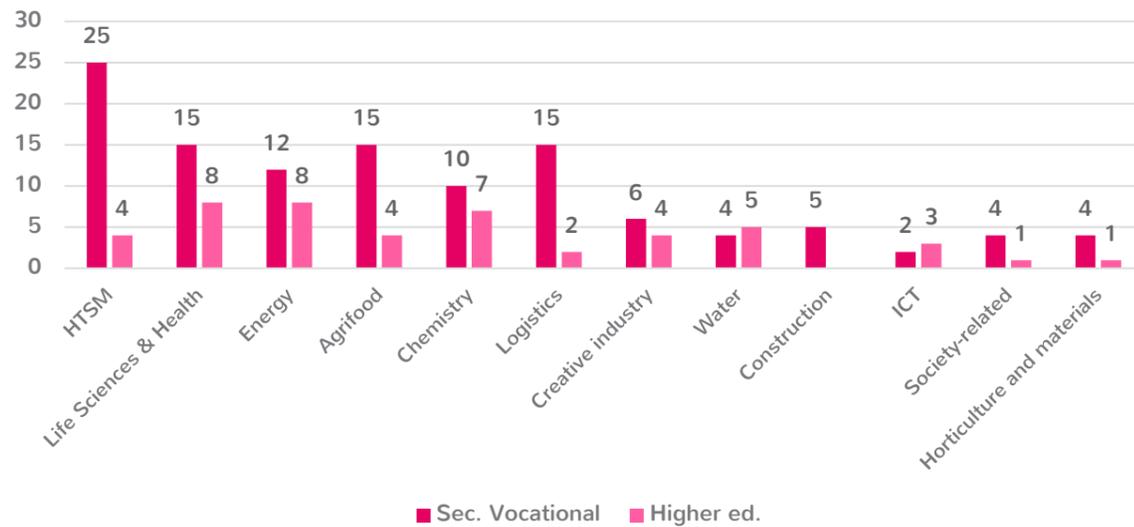
- * Centers are action-oriented partnerships between educational institutions, companies, governments and other public organizations. They primarily focus on:
- Creating an excellent link between education and the labor market;
 - Educating innovative and skilled professionals, craftsmen or craftswomen;
 - Promoting 'life-long learning' and timely re-skilling;
 - Accelerating and enhancing the innovation capacity of companies.

OVERVIEW OF CENTERS

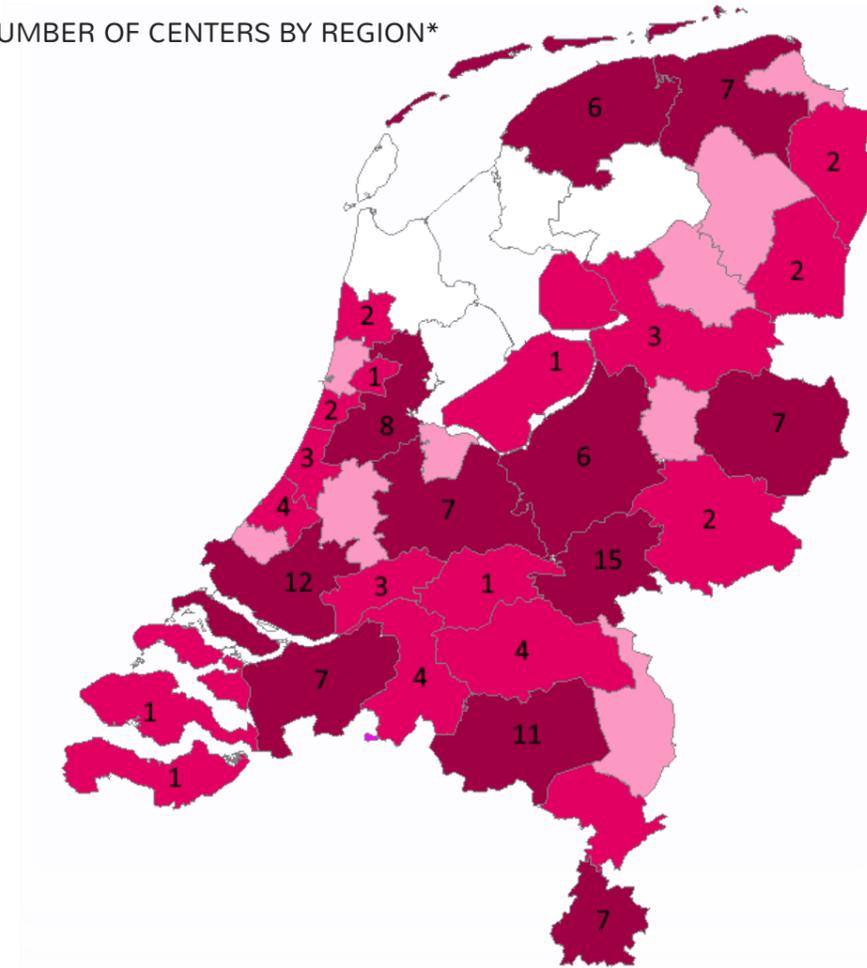
CENTERS BY YEAR OF FOUNDATION



CENTERS BY SECTOR



NUMBER OF CENTERS BY REGION*

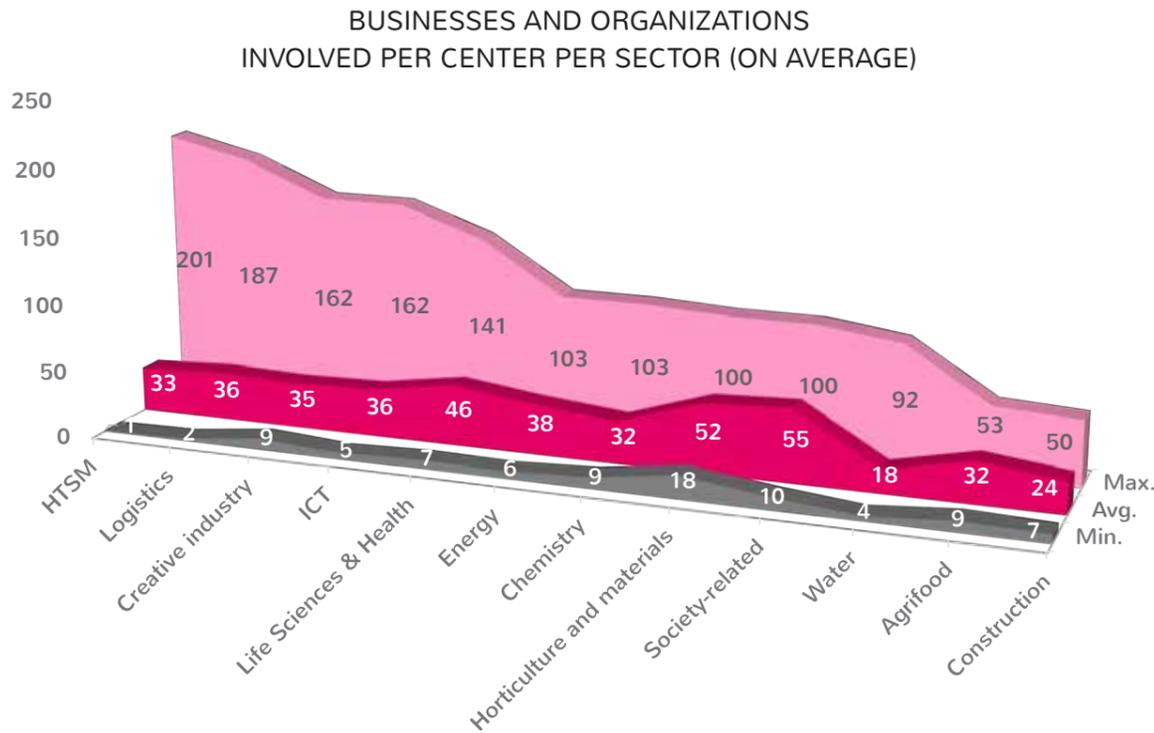


* Centres per NUTS3 (Cf. County) area, sorted by sector. The clear concentration in 11 regions where universities are located (and/or where universities have auxiliary branches) and where the entire education system is represented is particularly striking.

CENTERS SPREAD ACROSS THE NETHERLANDS

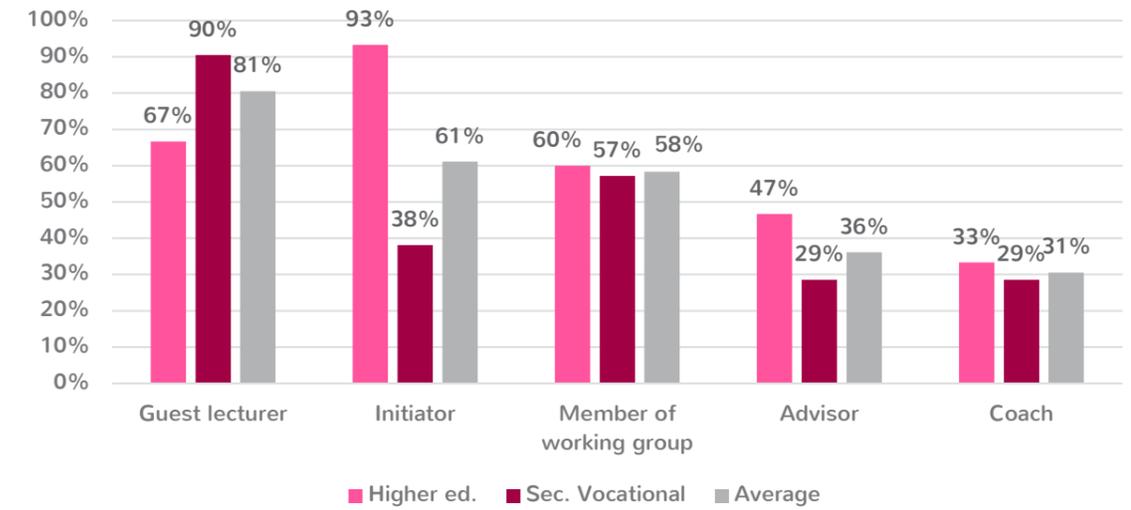
Section	Sec. Vocational	Higher education	Total
Northwest	17	4	21
North	13	4	17
East	19	15	34
Southeast	22	8	30
Southwest	26	6	32
Total	97	37	134

INVOLVEMENT OF BUSINESSES

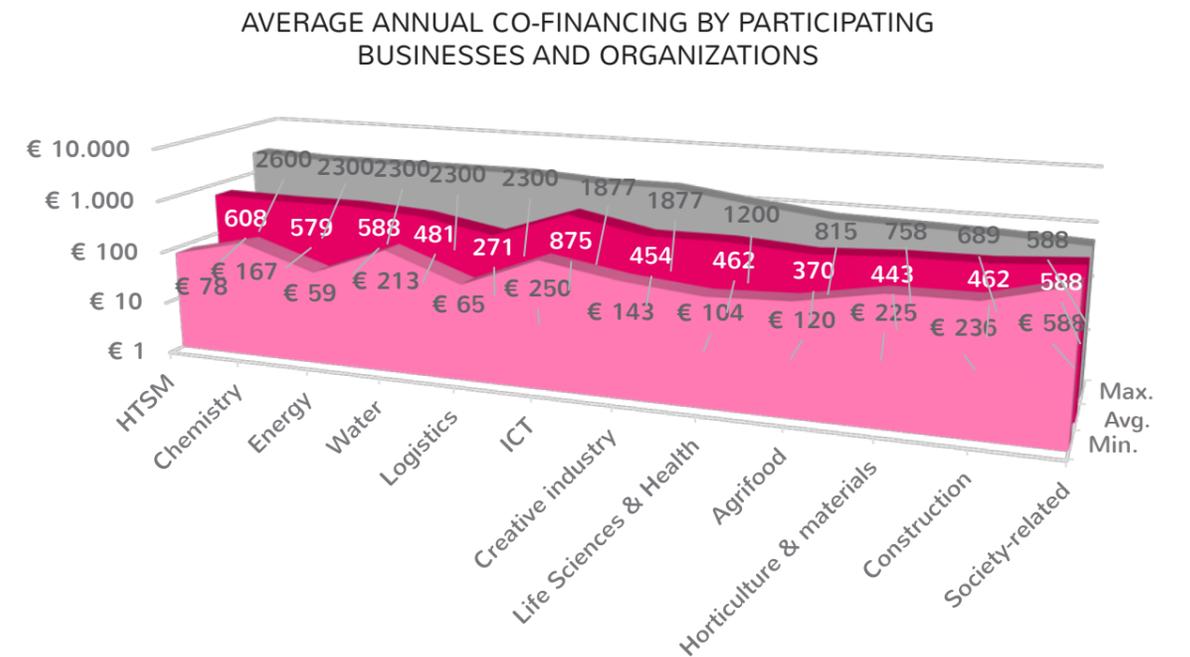


Businesses often act as co-investors and hence make the establishment of a Center feasible. These companies contribute both in terms of cash and their services to students. We have identified an increased financial contribution in Centers over time. The core of a Center is often formed by 10-15 business partners. They are complemented by a growing number of companies that participate in selected activities, such as research projects and life-long learning, or re-skilling programs. CenterThe variation within a sector can be as great as, or even greater, than between sectors with respect to the involvement of businesses. This pertains to a difference in approach: if the development and coordination of novel teaching materials comes first, then Centers can start small, particularly during the initial years. Once courses for professionals become available, they must be branch out to generate impact.

PARTICIPATION ROLES ENTREPRENEURS



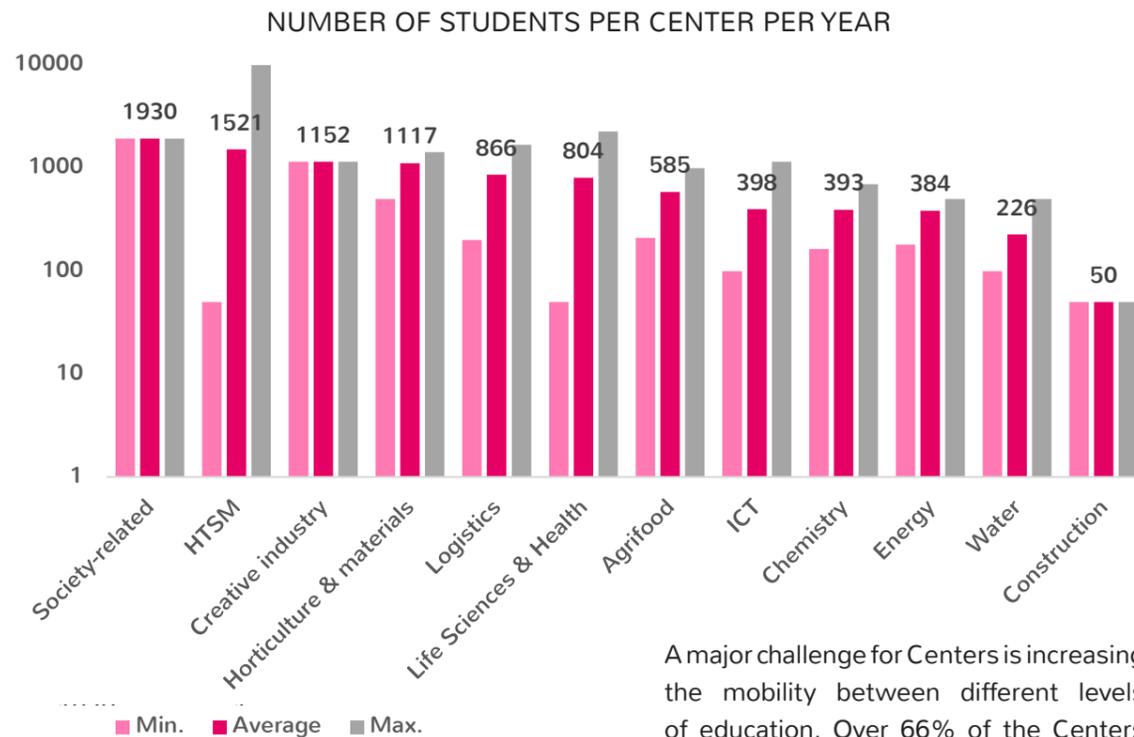
There are various ways in which companies can contribute to the Centers. Foremost they contribute to educational content, innovation and the inclusion of education into practice.



The business world also makes cash contributions to the Centers. The graph shows the financing of Centers in sectors in Euros (multiplied by a thousand).

INVOLVEMENT OF STUDENTS

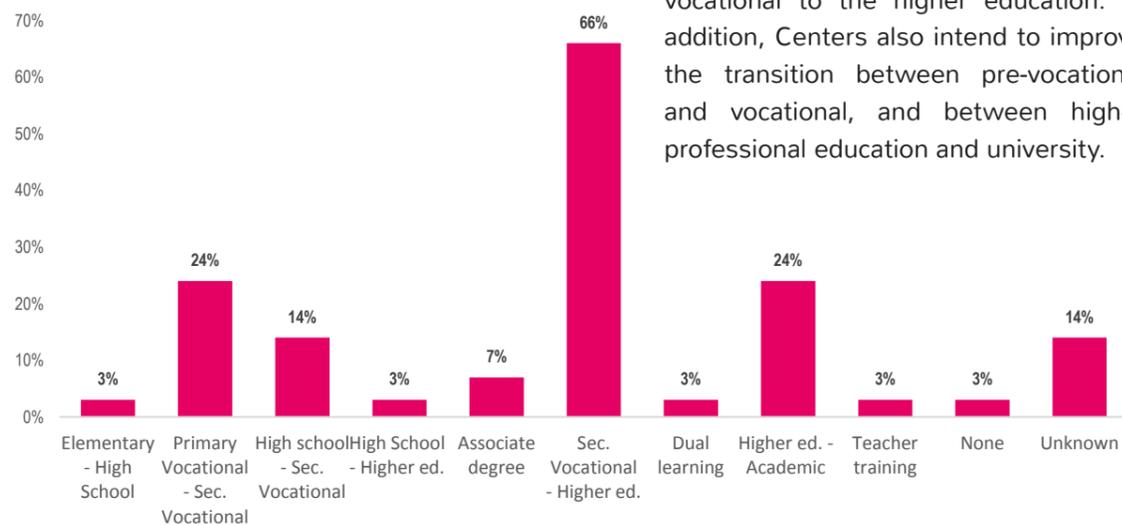
The graph below indicates the average number of students participating in Center activities per sector, per year. Students are the key actors in educational public private partnerships. They are literally situated in between both worlds and are open to innovations in professional practice. With an average of 375 students – with occasional peaks of more than 2,000 per Center – students participation in Center activities is expected to continue to grow. To date, the whole network of Centers reaches approximately 50.000 students, which is about 5% of the total population of vocational and higher education students.



A major challenge for Centers is increasing the mobility between different levels of education. Over 66% of the Centers actively focus on the bridge between vocational and higher education.

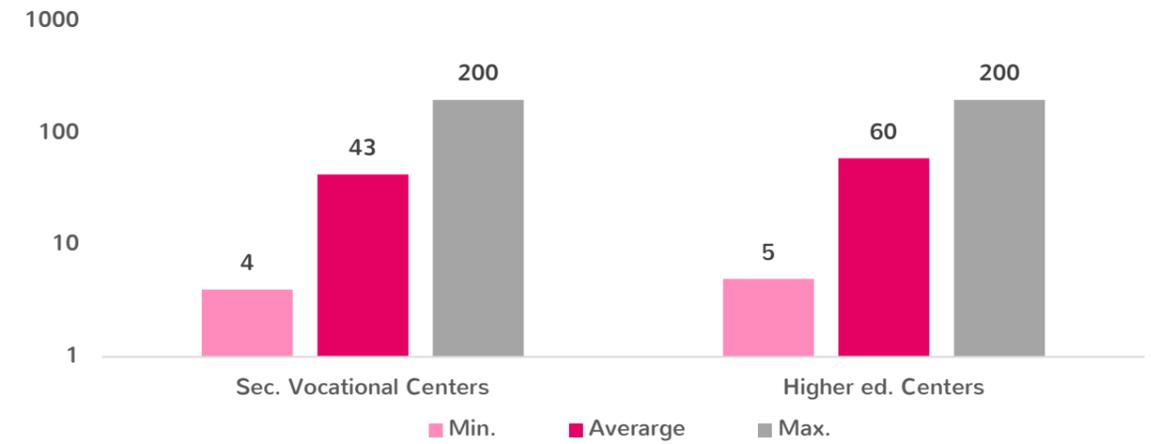
This allows for an easier transfer from vocational to the higher education. In addition, Centers also intend to improve the transition between pre-vocational and vocational, and between higher professional education and university.

STIMULATING MOBILITY OF STUDENTS



TEACHER INVOLVEMENT

PART-TIME USE OF TEACHERS IN CENTERS



Teachers need to constantly adapt their roles. In recent history, they have acted more as supervisors than knowledge providers. Nowadays their role is in pointing out knowledge boundaries and acting as innovation experts. A survey conducted for this report shows that a substantial number of teachers participate in Centers, often in a part-time setting. This is challenging, because the focus on traditional teaching tasks and 'the new pathfinding roles' have to be balanced. One can find the largest participation rate in the Creative Industries, Sports, Health and Healthcare, High Tech Systems and Materials and Energy sectors. These are all sectors with a Center tradition of education experiments in how to involve professional practice.

- In the Creative industries, professionals need to collaborate closely in order to achieve solutions.
- In the Sports, Health and Healthcare sector, we see the successes of apprenticeships and professional communities where practitioners, teachers and students meet.
- In the High Tech Systems and Materials sector, a laboratory often serves as an important meeting place (which this sector has in common with the creative industry). The concentration of talented people and resources stimulates companies to participate in research projects and provide opportunities for student internships.
- Finally, in the Energy sector we see the opposite of a niche: the challenges are so versatile that collaboration between various business sectors becomes necessary. The installation sector is represented, as well as the construction, chemistry and bio-technology industry. The relevant expertise of electronics, ICT, mechatronics and mechanical engineering are often important factors, enhancing feasibility. Moreover, the input from business experts is indispensable for the business models used.



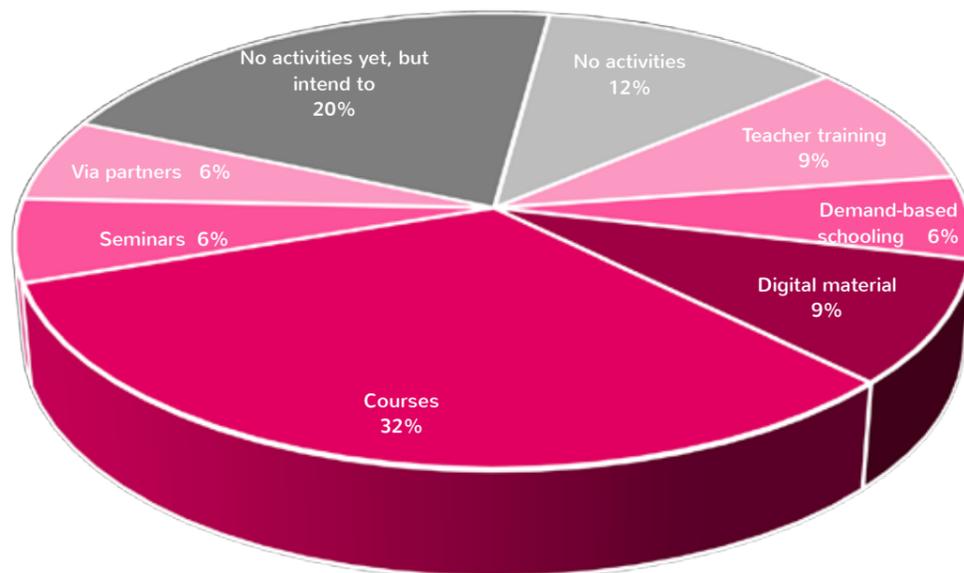
LIFE-LONG LEARNING AND RE-SKILLING IN CENTERS

'Life-long learning' and re-skilling form an important pillar within many Centres. Three activities can be identified:

1. Learning for diplomas and certificates: Learning in education and training programs, aimed at obtaining diplomas and/or certificates. These programs can take several forms. Participant internships, practical assignments focusing on the training or course's learning objectives.
2. Learning in education and practice: Learning in the workplace that does not exclusively focus on student knowledge acquisition but also on the interaction with, and learning from experienced company employees. This involves new combinations of work based learning.
3. Innovations in education and practice: Focuses on the development and implementation of product development processes, in which employees and students, alongside teachers and lecturers, work on achieving innovation and gradually acquire new required knowledge and hence professionalize themselves.

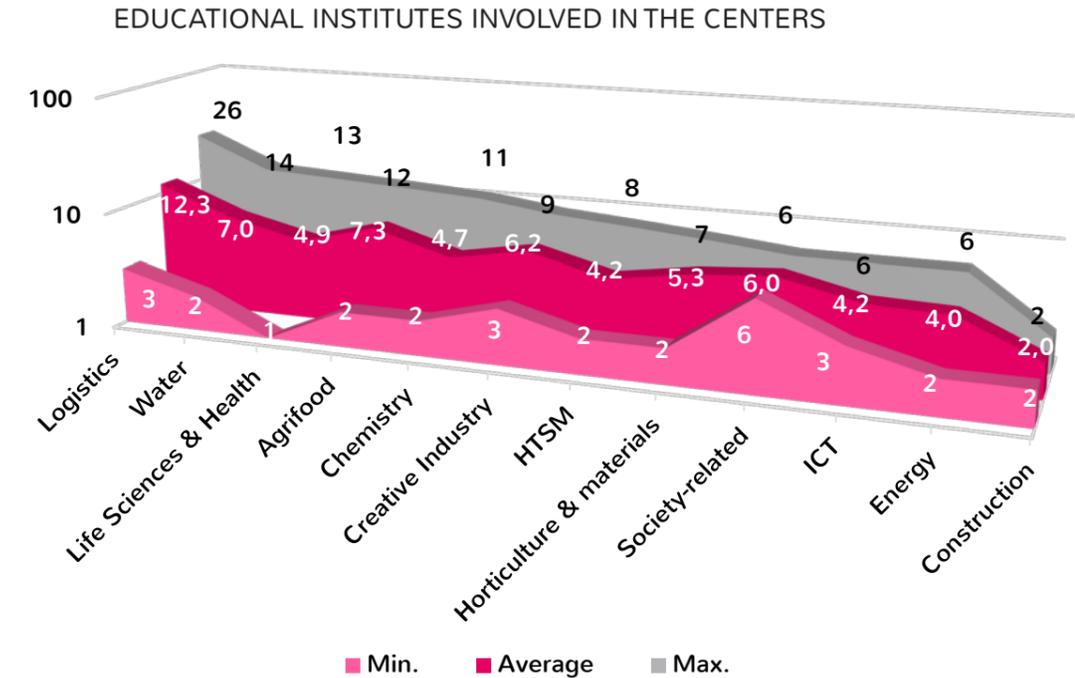
Nevertheless, this activity proves to be difficult to implement in many Center. Over 20% of participating Centers indicate that they have a clear objective, but have not yet succeeded in achieving the estimated result. Additionally, Centers do not always appropriately consider their activities as relevant to 'life-long learning' or re-skilling.

LIFE-LONG LEARNING ACTIVITIES



From an employee's perspective: remaining up-to-date and innovating oneself are of imminent, future importance. As an employee, you are increasingly responsible for your own 'employability'. What we already knew from internships as introductory opportunities for new employees, is now also the case for Centers: they're becoming meeting places for the new mentality; gates that facilitate access to crucial sources of knowledge for the Centers.

TRENDS IN SECTOR COLLABORATION

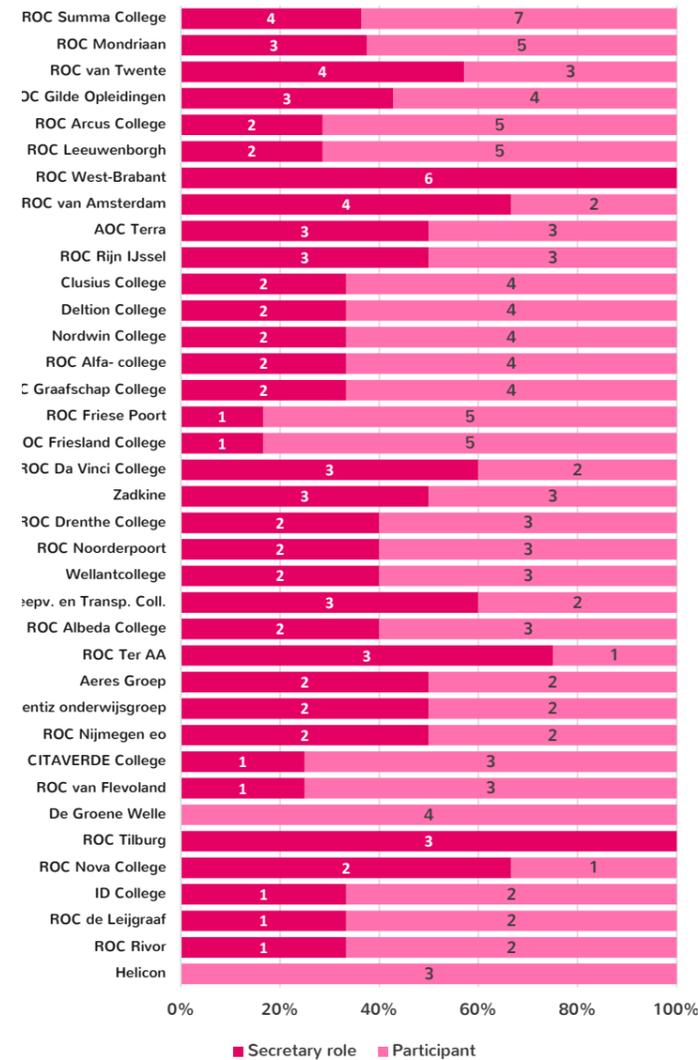


Collaboration between educational institutes is common in all sectors. It significantly enhances the impact of public-private partnerships. The Healthcare sector generally accommodates multiple partnerships with different educational institutes. Centers have distinct approaches; sometimes enabling in-depth collaboration with a small number of key actors, or working more broadly with a larger number of parties.

PARTICIPATION OF EDUCATIONAL INSTITUTES IN THE CENTERS

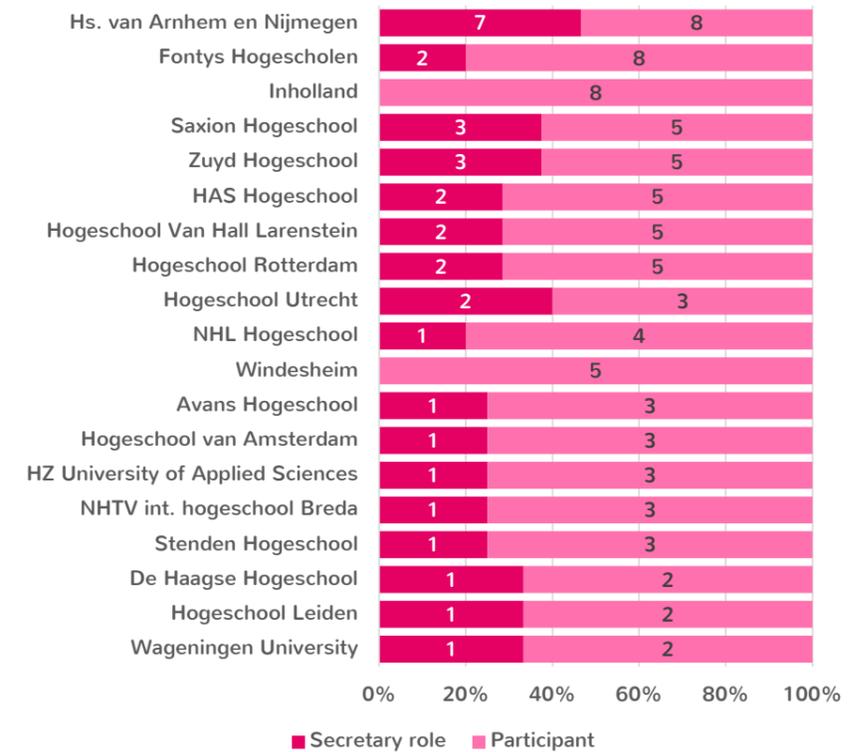
Out of the 134 Centers, 97 originate from vocational schools. Most of the vocational schools accommodate more than one Center. Also, many schools take part in Centres that originated from other institutions/schools. This overview shows that almost all vocational schools and corporate training schools are associated with the movement.

VOCATIONAL INSTITUTES WITH 3 OR MORE PARTICIPATIONS



The other 37 Centers originate from Higher Education Institutions, the Universities of Applied Sciences (UAS). About half of all UAS involved, participate in a single Center. Some, however, participate in more than one Center. For instance, the University of Applied Sciences Arnhem and Nijmegen. As a coordinator, the UAS hosts seven Centers of expertise and, additionally, it participates in eight external Centers. The case of the Fontys Universities of Applied Sciences is similar, where in addition to coordinating and hosting two in-house Centers, the UAS participates in eight external Centers. The Inholland and Windesheim Universities of Applied Sciences are also noteworthy: These UAS are both active participants in many external Centers. UAS sometimes concentrate on a limited number of focus-activities. For example; the Hanze University of Applied Sciences focuses on the sectors Energy and Healthy Aging.

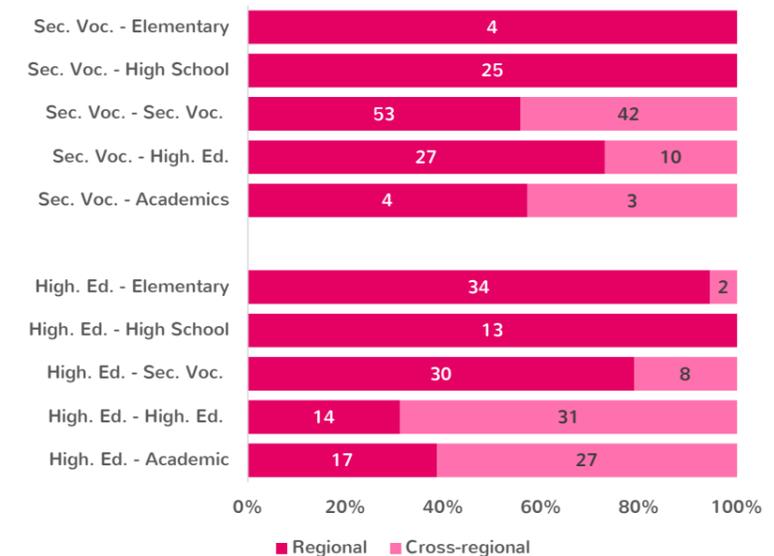
UNIVERSITIES OF APPLIED SCIENCES WITH 3 OR MORE PARTICIPATIONS



REGIONAL AND CROSS-REGIONAL COLLABORATION

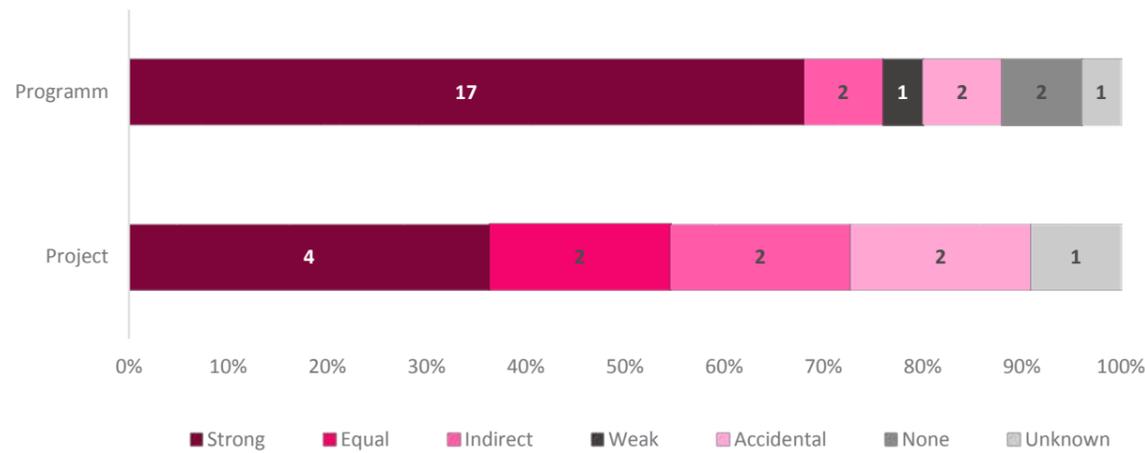
Educational institutes collaborate on a regional and cross-regional level. Strikingly, SVES mainly collaborate in their geographical region, whereas UAS have both regional and cross-regional partnerships. The collaboration with Universities is often cross-regional, due to the fact that Universities are not located in all regions. As for the SVES, their cross-regional collaboration is often to achieve national coverage with meeting points in several locations.

REGIONAL AND CROSS-REGIONAL COLLABORATION BETWEEN CENTERS AND THE EDUCATION SYSTEM



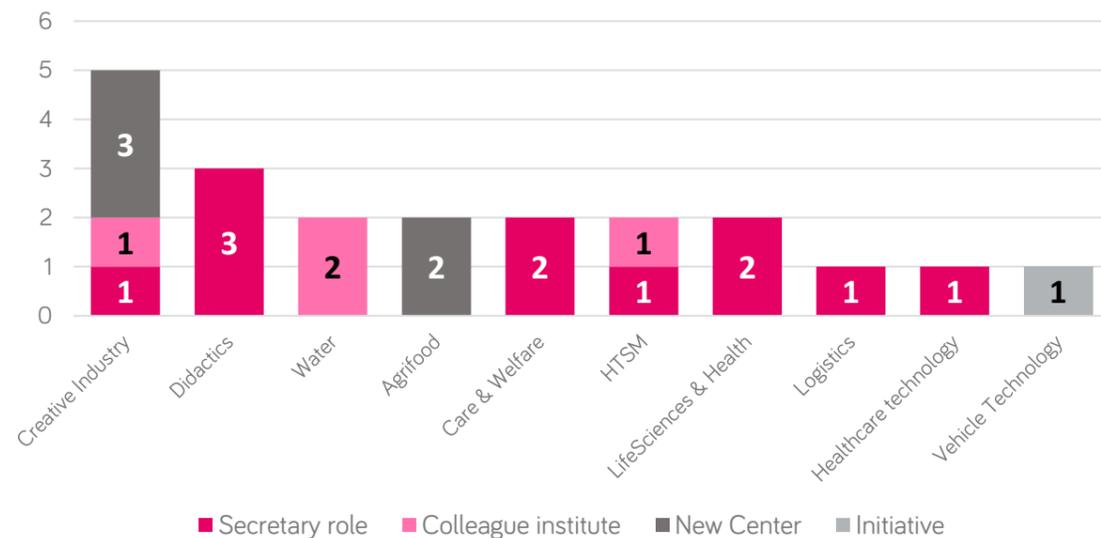
CONNECTING EDUCATION AND RESEARCH

CONNECTION BETWEEN RESEARCH AND EDUCATION IN THE CENTERS



Within Centers, research does not just remain within the walls of the institutes or in the minds of their key researchers. In the past, traditionally, the lecturer and students were exclusively involved in research issues. Since business representatives now form a third, and equally important party, research becomes increasingly focused on solutions: real practice-oriented research to try to find solutions to – often wicked – practical problems requiring multidisciplinary collaboration.

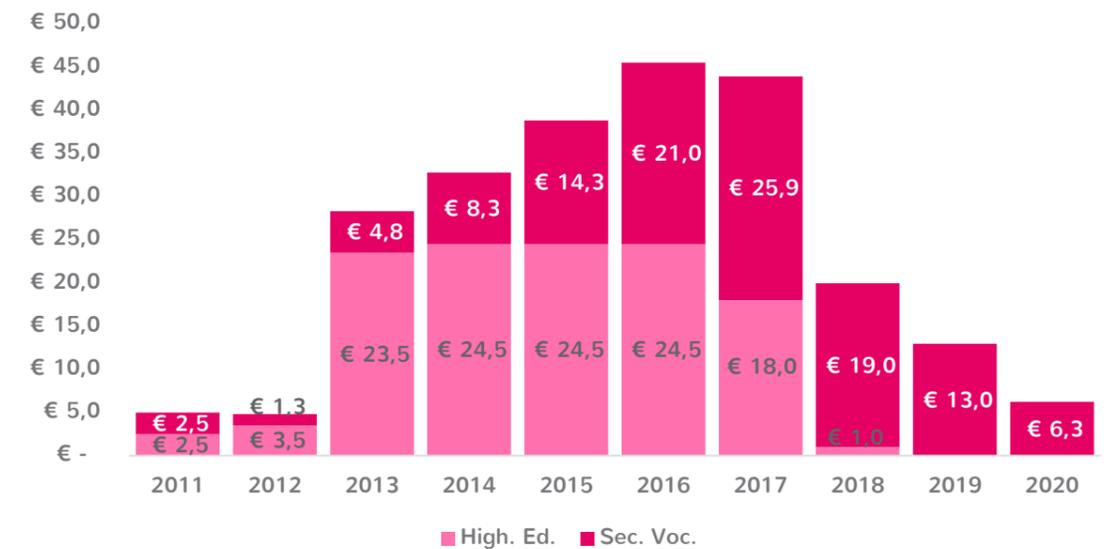
THEMATIC CONNECTION OF PRACTORATES WITHIN INSTITUTES ACTING AS CENTER COORDINATORS AND PARTICIPANT INSTITUTES



Because of experiences with practical research at UAS, this function is expected to develop within vocational education in the so-called practorates. All Centers have aspects of potential future practorates: the vocational version of lectorates. The first practorates – with the Center formula kept in mind - have already been formed. This reciprocity of new roles in education and novel forms of organization were the reasoning behind the establishment of Centers and will determine their further improvement and effectiveness in the future.

REQUIREMENTS IN THE COMING YEARS

ANNUAL FUNDING OF CENTERS BY THE GOVERNMENT IN MILLIONS



In order to guarantee successful participation in the upcoming years, the dutch government, educational institutes and business world must agree on the following:

- The focus on education and the role of entrepreneurship
- Measures to embed innovations in education
- A policy environment that allows for experimentation and collaboration, not merely on paper, but also in practical world
- Smart use of regional approaches to jointly develop innovation in education and support the labor market
- Increased attention for the individuality and unique and unparalleled status of Centers.

The investments of the past years have proven to be beneficial. Future, here we come!

**"INNOVATION IS A TEAM
EFFORT. YOU ABSOLUTELY
NEED ALL LEVELS OF
EDUCATION"**

SEIFFERS BROTHERS, ACCENDA

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PART 2: THE STORY BEHIND THE FIGURES

Centers are not blueprints, but are extremely diverse in terms of activities and turnover. Because of their demand-driven nature, large differences exist between regions, themes and sectors. Complex challenges connected to multiple disciplines require a different approach than mono-sectoral issues. Human capital issues also differ between metropolitan and rural areas and whereas the size of businesses calls for different innovation and training solutions.

The facts and figures from part 1 are based on indicators that will be discussed in this chapter on the basis of examples. This chapter will therefore provide you with a bigger picture of the large amount of diversity in Center features. These indicators have been defined on the basis of the Center definitions, characteristics and properties. This knowledge database will be expanded upon over the coming years, providing Centers with increased understanding of each other's good practices. Moreover, approaches and tools will be offered which will allow Centers to learn from each other.



"A VISION OR AN IDEA IS A POWERFUL TOOL. IF YOU FIND LIKE-MINDED PEOPLE, YOU'RE REALIZING YOUR DREAM"

PROF. DR. AD VAN WIJK - TU DELFT



Collaboration with businesses

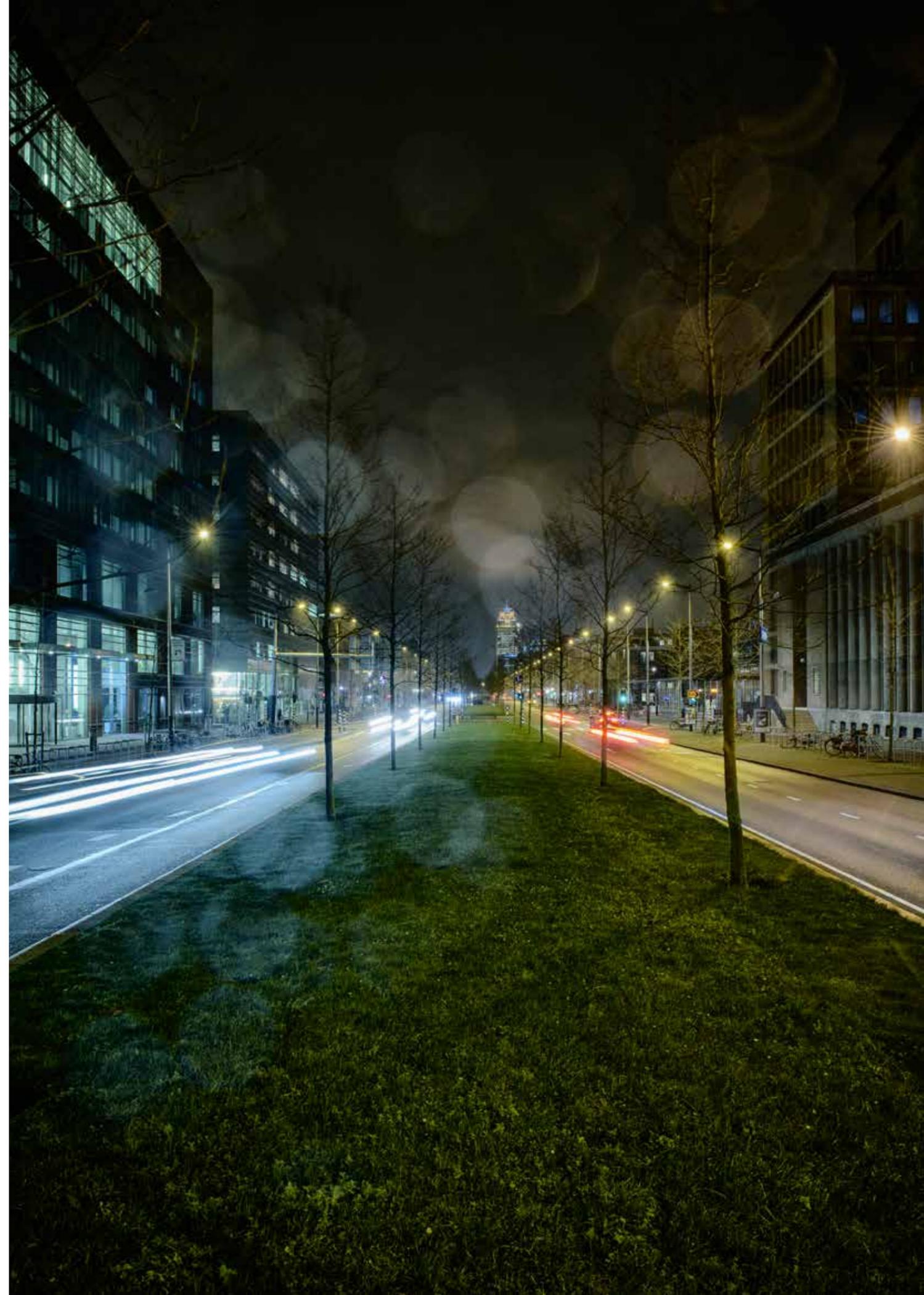
At the basis of educational partnerships lies the active role and commitment of businesses and professional parties. These may include public institutions such as hospitals or water authorities. Centers often start with a group of founding partners. Over the course of time, a community will develop.

- Both Centres SEECE and Teclab grew their communities to respectively 40 and 70 companies. In the regional business world, there is a lot of interest in the Centers' specialties.
- In the Center of Expertise Healthy Ageing of the Hanze University of Applied Sciences, the number of partners grew from 35 to 170 in four years, encompassing educational institutes, research institutes, governments, over 50 healthcare and community service organizations, and more than 50 large and small commercial businesses.
- The Center of expertise TechForFuture expanded its community of businesses to more than 180, with an emphasis on (nano) technology, materials, optics, electronics, safety and health care.

Funding by businesses

A Center is co-funded by businesses in cash and in kind. This support is essential for the growth and development and business involvement and interest in contract research. A growth of co-financing indicates stronger corporate and professional involvement.

- Yaskawa Benelux has made a HP20F type handling robot with FS100 robot controls available to Teclab in Eindhoven. The robot is used for the loading and unloading of processing Centers. Thanks to the robot, ROC Summa College is now able to offer an Vocational level 4+ robot program to talented students.
- ICT and media corporations DigitasLBI, Info.nl, Persgroep and Cisco have associated themselves as Lab Industry Leaders with the Amsterdam Creative Industries Network labs. These corporations invest time and money in public-private partnerships and, as the Industry Advisory Council, have a say in the labs' research programs. The joint contribution of ACIN industry partners amounted to € 1.9 million in 2016.
- Within the Center of expertise Cyber Security, Thales and The Hague University of Applied Sciences both co-finance a lectorate - research group on cyber security. Thales recognizes a shortage of experts with a practical approach in the field of cyber security in the Netherlands. With the establishment of this lectorate, the company hopes to make a social contribution to a safer Netherlands through the support of education. In addition to Thales, other companies also invest in the Center of expertise, up to a total of € 1 million per year.
- The businesses Wärtsilä, Kemper & Van Twist, Dolderman and Pon invest an annual € 500,000 in the public-private partnership Combustion Engines with Da Vinci College to develop and implement educational modules in this domain. The public-private partnership Combustion Engines is housed in the Duurzaamheidsfabriek: a hybrid learning environment where students learn and work in a professional practice setting guided by business assignments and projects proposed by collaborating companies. In addition, teachers and businesses collaborate to create a continuous primary vocational – secondary vocational – higher education learning pathway about combustion engine technology. In doing so, they also retrain their own knowledge and skills. Many practical resources in the Duurzaamheidsfabriek are provided by industry partners.



Involvement of educational institutes

Educational development often takes place in the primary process within a single educational institute. Through participation in a Center, these institutes get more room to collaborate with other educational levels: with primary vocational schools, SVES, UAS and universities. Through the experimental environments, brought about by Centres, institutes learn from each other and are able to experience new types of education.

- Green PAC is a joint initiative from Stenden and Windesheim Universities of Applied Science. Their Center involves a wide range of educational partners, including NHL, WUR, RUG, UT, TU/e, ROC Deltion and Drenthe College and educational institutes in Bremen and Osnabrück.
- CIV Water is coordinated from the Regional Training Center Friesland College. This Center includes 14 participating SVES and UAS and focuses on the development of green education: Friesland College, Nordwin College, Van Hall Larenstein, Noorderpoort, Terra, De groene Welle, AOC Oost, Helicon Opleidingen, IPC Groene Ruimte, ROC Rivier, Clusius College, Flevoland College, Drenthe College and Willem I college.

Educational sector investments

In addition to other grants, educational institutes significantly invest in Centers. Especially through in kind contributions in terms of facilities, participation of teachers, project supervisors, researchers and advisors. Often these commitments are part-time so that teachers remain in touch with the teaching itself. This also includes the time teachers dedicate towards developing new teaching materials, lectures and courses and re-training and re-skilling of professionals.

- In 2014, the HAN launched an internal investment fund to enable Centers of expertise to develop without government funding. This initiative spurred the development of the Centers Krachtige Kernen (focusing on housing and health care), the BioCenter (dedicated to the biochemistry sector), the Center Sneller Herstel (on sports & exercise and rapid recovery) and the Centre Ixperium (studies classroom IT to support primary and secondary education).
- The Universities of Applied Sciences Saxion and Windesheim invest annually € 1.7 million in their joint Centre of expertise TechForFuture. The investment afforded the Center to significantly involve education and research groups. In total, 21 professors and associate professors, and 16 researchers and projects leaders from the UAS are active in the Center.
- The Hanze University of Applied Sciences and its educational partners invest € 1.6 million annually in the Center of expertise Healthy Ageing. With this Center a total of 14 professors are associated as research group leader. The Center hosts 27 "innovation workplaces", sub-communities within the Center focusing on specific healthy ageing challenges.

Involvement of regional governments

Regional governments and governmental bodies are crucial in the realization and implementation of a Center. The government organizations promote knowledge transfer and collaboration between regional parties. As a result, regional collaboration can happen at a larger scale, especially where Centers align with the (economic or social) agenda of the region.

- The provinces of Friesland, Groningen and Drenthe, the municipalities of Leeuwarden and Súdwest Fryslân, regional governmental bodies NOM, SNN, Chamber of Commerce Northern Netherlands, Water Supply Company Drenthe (WMD), water operator Vitens established the Water Alliance in 2010. Water Alliance is a cluster and network organization that strengthens and supports the WaterCampus Leeuwarden in the growth of Dutch water technologies.
- Between 2013 and 2016, three Dutch northern provinces and ten regional municipalities joined the Center of expertise Healthy Ageing. The provinces participate in several innovation workplaces to help set their future agenda. The transitions in health care and social services urge regional governments and municipalities to adapt their policies with in the context of current and future innovations. From the viewpoint of preventative medicine, regions also play a role in sports and culture to promote Healthy Ageing.
- Center TechPort collaborates with the province of Noord-Holland. Together with businesses, educational institutes and governments, the province of Noord-Holland promotes closer links between education and the labor markets through secondary vocational technology campuses. In doing so, the province supports the Amsterdam Economic Board (AEB) and the Noord-Holland Technology Council.

Funding of regional governments and structural funds

A key factor in enabling the activities of a Center is the support through European (structural) funds of regional cooperation (EFRO, Interreg). These funds are specifically set up to stimulate society and economy at a regional level through the support of innovation, knowledge sharing, and the improvement of infrastructure. Some regional funds focus specifically on innovation and research.

- Zorgboulevard Roosendaal is partly sped up by flanking Interreg activities iAge and CrossCare, which strengthen the subject of technology in health care on a regional level.
- The Fablab, which is part of the Center Teclab, was made possible through an EFRO grant. Fablab has currently been adopted as an activity by the Centre consortium in order to bring business consortium partners in touch with new maker technologies.
- For the first two years, the Center Oost-Nederland Energie(k) received a financial boost from the province of Gelderland. This boost amounted to € 600,000. The municipalities of Arnhem and Nijmegen also invest financially and in kind (through student internships) and they participate in the Center's steering group.



"WE DIDN'T ASK FOR PERMISSION...WE SIMPLY KICKED OFF!"

JAMES VEENHOFF - DENIM CITY

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National grants and research funds

Besides funding specifically aimed at collaboration, Centers may also receive additional grants in the context of research and innovation project proposals. Many Centers of expertise have successfully applied for RAAK grants for Practice Oriented Research by the Dutch National Research Organisation NWO. Next to this, Centers of expertise are broadening their scope: several Centres benefit from the Top Sector Consortia for Knowledge and Innovation (TKI) incentives and have received EFRO and Interreg grants.

- As of 2016, the Stenden University of Applied Sciences and coordinator of the GreenPAC Center will participate in the INTERREG V program 'Bio-economics in the non-food sector', focused on networking and cross-border development of bio-based products. In addition to the EU grant of € 3.9 million, an equal amount of Dutch-German co-funding was also made available. The program focuses on projects in the field of bio-substrate, biochar, sustainable fibers, micro injection molding applications, 3D printing, bio-based housing construction and bio-based infrastructure. With the Green Pac initiative, the Stenden University of Applied Sciences as a knowledge institute plays an important role in the execution of some of the projects.
- In collaboration with various chain partners, single or multiple construction logistic solution(s) and measures are applied within a 'pilot construction' in Rotterdam in the TKI project '4C in construction logistics'. Students and teachers of the Rotterdam University of Applied Sciences within the Center of expertise KennisDC, develop a monitoring system and create new solutions to optimise in construction logistics.
- The POKO project (Participatory Design for Children's Oncology) of the Center UCreate, was enabled through an NWO RAAK grant. In this project researchers design recreational games together with hospitalised children. In one such game the children can control a race mat while leaning on a foam pad with sensors placed on their bed. In this way, they can easily train their back muscles. In another game, called pirate game 'The Journey of the Five', young children learn how to eat and taste food again after chemotherapy treatment. In a treasure chest with 150 assignments, children can develop a positive association with food, even after they have returned home. It is extremely motivating for [game design] students to see their designs being used in socially relevant contexts, says lead researcher Fenne Verhoeven. The project is a collaboration between of the Utrecht University of Applied Science, the University Medical Centre of Groningen, and various design agencies.





Student involvement

The first way students get acquainted with Centers is through practical and vocational education they accommodate. Moreover Centers involve students in their research activities where businesses, teachers and (student) researchers collaborate on interesting issues.

- In 2016, the Center of expertise Krachtige Kernen managed to directly involve 50 students. These students visited the Center for assignments and research. The Centre reaches even more students through its impact on the curricula and minors of the Arnhem and Nijmegen University of Applied Sciences. Students also participate in and contribute to excursions, symposiums, and share experiences via the UAS's internal market for education and research.
- In 2016, the Center of expertise Healthy Aging saw approx. 400 active secondary vocational and higher education students in one of the 27 innovation work places. Moreover, the Center managed to attract 600 students (secondary vocational and higher education) to short-term projects. Finally, more than 6,000 students at the Hanze University of Applied Sciences participate in Healthy Ageing educational content developed by the Center. Annually, the Hanze University of Applied Sciences and partners involve hundreds of students in practice-oriented research and dozens of students visit the symposiums and meetings organized by the Center.
- Within the Center of Expertise Sneller Herstel, many students participate in practice-oriented research projects. Participation of students: in the Neuro-Rehabilitation research group 106 students in 2015, in the Musculoskeletal Rehabilitation research group 94 students in 2015, in the other research groups at least 50 students work on topics that suit the Center's theme. All Physical Therapy students attend the Motor Learning, Motor Control learning module. Attendance to the Neuro-rehabilitation (NR), Manual Therapeutic Intervention (MTH), Sports Physiotherapy and Active Ageing (SPAA) minors grew from 260 students in 2013-2014 to 279 students.



Teachers

Teachers play various roles within the Centers: they provide knowledge, they develop, acquire further skills and work as researchers. Teachers often combine regular work within the educational program with additional activities in the context of the Center. This dual role is of great value, because it allows insights that are gained in a Center to make their way to the actual educational programs/courses.

- In 2013, Student Ferry Joris started the Teclab BBL+ program. For his graduation project, he initiated and implemented an improvement project within a company named Vullings and subsequently obtained a job position there. After graduating he became active as a Teclab guest lecturer. As one can see, this final step completed the circle.
- Founded at the former warf of the Rotterdam Dry Dock Company the RDM Centre of expertise provides teaching and research facilities in logistics and technology. The Center collaborates with knowledge centers and research groups from Rotterdam University of Applied Sciences, Delft Technical University and the Dutch Organisation for Applied Research TNO. The RDM Center coordinates a number of projects, logistics education and research activities. The

research group's activities are guided by a lecturers who also participate in national platforms. The lecturer leads the research activities and participates in national platforms. Due to the fact that all activities take place in a Community of Practice, students, businessmen, researchers and teachers are able to meet each other and share results effectively.

- Together with Wetterskip Fryslân, Center of innovative craftsmanship CIV Water organizes an educational project about the ins and outs of dike monitoring. The project starts and ends with guest lecturers from the water authority. An introductory guest lecture explains what dangers threaten dikes and how modern dike management is organized. At a later stage, students come up with technical solutions, which they then present to members of the water authority.



Business involvement

Within the Centers, entrepreneurs take on the role of experts, by suggesting topics for the Centers' activities agenda, and the role as guest lecturers. Moreover, entrepreneurs also participate as supervisors of students.

- Within the Center GreenPAC of the Stenden and Windesheim Universities of Applied Sciences, entrepreneurs participate in various roles; as initiators of research questions, coaches, advisers, guest lecturers, client and researchers. Moreover, Green PAC also attracts new entrepreneurs through its iLab facility. Within iLab, these entrepreneurs are provided with support in the development, production and marketing of innovative (parts of) plastic products.
- The partners of Center TechPort, IJmuiden Maritime College and Velsen Technical College, organize breakfast meetings with innovative businesses and organizations. During these meetings at the Technisch College Velsen, Martijn Witteveen - commercial director of the Blok Group - explains how 3D print products offer weight and fuel savings in the Airbus 380. Guest speaker Frans Veenstra of the Masterplan Duurzame Visserij Foundation presents a pilot ship made of composite, which uses 80% less fuel in comparison to a traditional cutter, while at the same time being just as durable/reliable.
- At Center GreenTechNHN, professionals serve as the clients in regional learning. During regional learning, students gain experience in projects involving the professional field. These projects partly take place outside the walls of the school. The interaction with the students and the project results are of added value for the professional field. One example of this is the design and construction of the Rookerhuyspark in Tuitjenhorn. Students can also conduct a customer satisfaction survey or participate in other assignments in service of the professional field.
- In the Healthy Lifestyle Hospitality Innovative Workplace, businessmen from the tourism, hospitality and real estate sector and healthcare and educational organizations collaborate - through applied research and co-makship - on sustainable knowledge innovation and processes. Educational partners ensure that the current students are multi-disciplinarily educated in all associated sectors and employees are trained in new disciplines.

Development of education

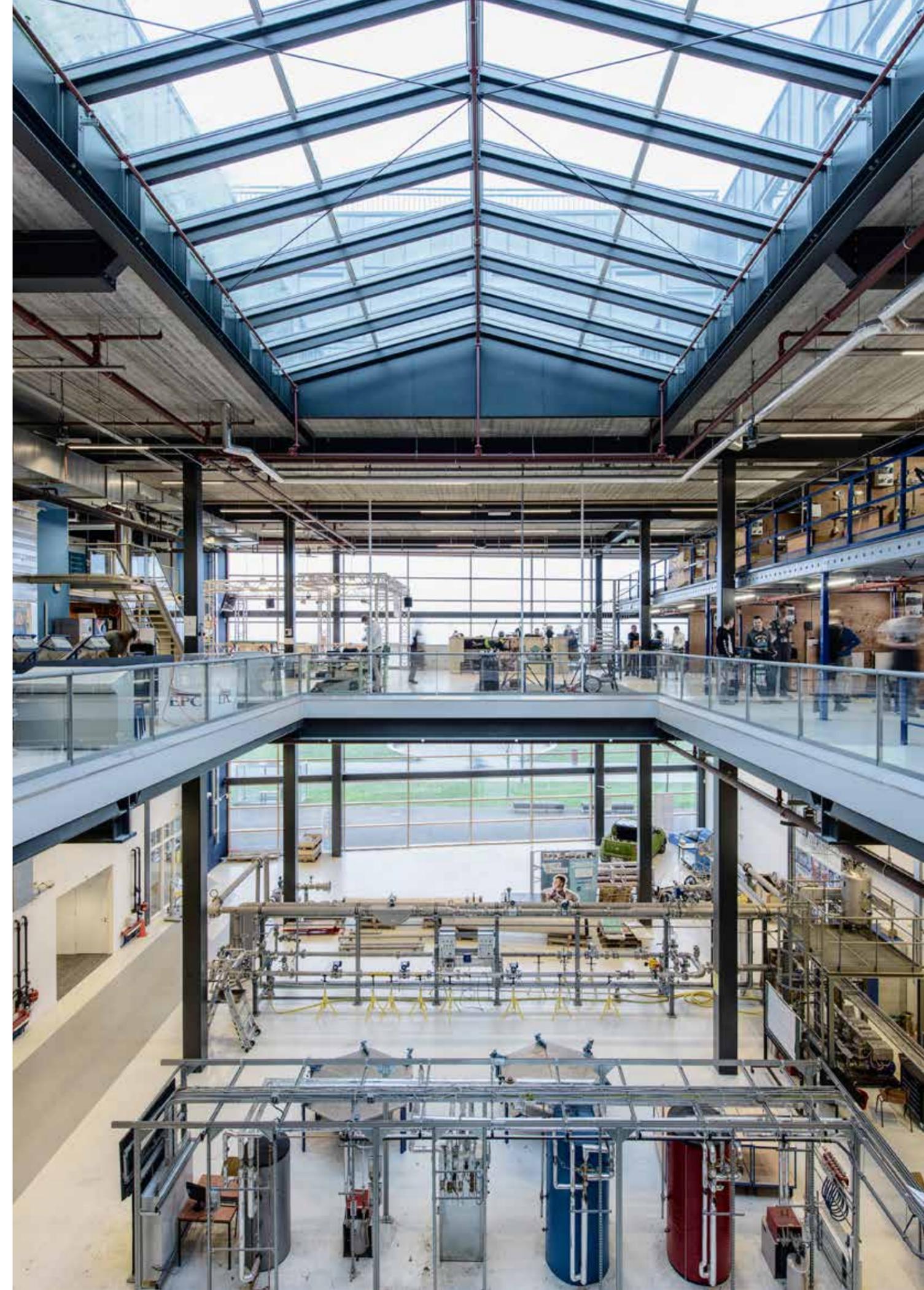
The development of curriculum content is the core mission of educational institutes. It also allows these institutes to collaborate with field parties in the development of lessons that are more closely geared towards the needs and demands of professional practice compared to the existing curriculum. Centers differ in terms of the scope and pace in/at which lessons are developed. For a number of Centers, lesson development is a clear key performance indicator, whereas other centers are more non-committal.

- In the Center PPS Combustion Engines of the ROC Da Vinci College, an education committee has been set up for educational content and scheduling. The proposals will be implemented by partners and realized in the practical training center.
- At Techwise ROC in Twente, demands from the professional field were inventoried by means of business meetings involving 160 different companies. These demands were taken into consideration for educational development. As a result, partners in Techwise collaborate on developing meaningful education.
- The Center PPS Waterroete of the Wellantcollege focuses on the regional learning methodology. Education is redesigned, taking context-rich learning environments for (young) professionals as a starting point, and making regional issues particularly prevalent. The educational process should be organized as flexible as possible. This flexibility not only enables close alignment with changes in the field of practice, but also affords students to influence their learning process and allow for reciprocal qualification.

The education and labor market interrelationship

Centers play a crucial role in the interrelationship between education and the labor market. First, by focusing on trends from professional practice and making them an active part of the curriculum. Secondly, by creating the right mind-set among students and preparing them for the often multi-disciplinary nature of a profession. Thirdly, Centers also play an important role in the alignment between education and the labor market. For example, by focusing on increasing student enrollment or by updating qualification profiles.

- The Masterplan MEI (Metal, Electro and Installation techniques) allows for alignment between the labor market, program offer and program design. A collaborative effort between all SVES in the province of Zuid-Holland and the professional field ensures sufficiently trained technical personnel for the region. In addition, the Koninklijke Metaalunie (Royal Dutch Metal Industry Employer's Union), the UNETO-VNI (Union of Installing Companies and Technical Retailers), the Technical Installation Training and Development bureau Otib and the Metal Industries Human Development Fund OOM offer crucial support.
- Center for innovative craftsmanship CIV Techwise aims to improve the quality of technical education programs. To this end, the Center unites industry, educational institutes, and SVESs. The aim is to train BBL apprentice students (i.e. employees) on the basis of business demands and ensure that work-based learning becomes much more practice-oriented.



Life-long learning and Re-Skilling

Together with regional partners and business partners, Centers develop programs aimed at life-long learning and re-skilling. These can be regarded as either programs aimed at continued training or re-training of current teachers, or programs aimed at re-skilling employees and job seekers who wish to re-train new skills and knowledge.

- Center SEECE of the Arnhem and Nijmegen University of Applied Sciences offers working-and-learning projects to more than 100 outside employees/job seekers, giving career switchers the opportunity to acquire jobs in the energy sector.
- With the Green Education Strategic Development Agenda Groen Onderwijs 2016-2025, the Centre CIV Agri & Food wishes to expand and update education offerings in the agricultural sector so that 'Green DNA' expertise remains up to date. By focusing on the substantial development of teacher teams, the collaboration between the educational levels is also improved: an increasing number of jointly taught courses leads to improved student enrollment from secondary vocational and higher education into university level education.
- Center Teclab collaborates with the post-initial vocational and higher education training centre Mikrocentrum in the training program for machining and cutting technicians. Together, they organize re-training projects for companies through seminars and Level 4 + BBL Apprenticeship training which is also open to employees and others. In November 2016 a jointly developed training program (focusing on Tool Production) was launched. The Mikrocentrum can use Teclab's equipment and facilities in their offered courses.
- Life-long learning is an important point on RDM Center's agenda. For example, there are currently plans in place to collaborate with offshore businesses to combine Schiedam Port Business Schools into an RDM Concept for training of both new and existing employees.
- Friesland College, partner in the Center CIV Healthy Ageing, has developed the Practical Learning Route. Here, students of 6 BOL vocational training paths can learn in the workplace. It offers students the opportunity to immediately participate in the labor market after starting the program. They work together with an accompanist on behalf of the company for about 15 hours a week. Moreover, they can choose to work in a specific department. The lessons are provided at the workplace by Center teachers. The alignment of theory and practice is underlined through workshops.
- At the Hilversum Media Campus learning through action is central via interactive sessions & short inspiration sessions. These sessions focus on innovative and entrepreneurial action and other 21st century skills. The short sessions aim at, for instance, foreign speakers and busy professionals. The cooperation between media companies, companies and educational institutes, needs finetuning. For example: a production may run for four months, whereas an internship only lasts three months.
- Windesheim University of Applied Science is a partner in various Centers. Windesheim's focus is on co-makship for employees and students, constantly making the connection between theory and practice. In this co-makship, practice is pivotal right from the start of the programs. Not only in the offer of part-time and dual programs, but also for employees and full-time students. For example, by:
 - Recruiting through schools and hospitals that distinguishes themselves with top clinical facilities
 - Customized course schedules with a mix of full-time and part-time students/participants.
 - Using blended learning in part-time programs in order to better mix theory and practice.
 - Research as part of the master's program & bachelor programs
 - Focusing on the participants' careers
 - Assignments from companies (e.g. policy, equipment, tools, research, innovation).



**“YOU MATTER WHEN YOU INCREASE THE
POWER OF INNOVATION FOR YOUR SECTOR,
TO HELP EDUCATE AND DEVELOP FUTURE
PROFESSIONALS.”**

GERARD ADEMA – DIRECTOR COE WATER TECHNOLOGY

**KATA
PULT**

**AANJAGERS
VAN DE KENNIS
VOOR MORGEN**

Contribution to companies' innovation capacity

Centers can contribute to issues that companies have no time for, or those that can only be answered with knowledge of the latest scientific insights or technical tools. Centers have a signaling function: they identify needs from a market or sector, and have the flexibility to focus on promising trends and opportunities.

- In order to safeguard the market position of the Dutch tulip industry (export value of approx. € 600 million a year), the Center Generade launched the Tulp Initiatief (Tulip Initiative). Lecturers Christiaan Henkel and Marcel Offringa investigate ways in which to increase the number of tulip bulbs by means of protein therapy. This in order to increase both the quality and quantity of different tulip varieties. The tulip genome is enormous (almost ten times the size of that of humans) and the technology was not yet ready to make the reading of the genome affordable. Now that the technology exists, one may use the genome for diagnostic and research purposes. Those who are able to reduce the current 30 year time between cultivation and sales may have stumbled upon a gold mine. In the project, the Leiden University of Applied Sciences, Leiden University, the University of Amsterdam, the Inholland University of Applied Sciences and Wageningen UR collaborate with growers.
- In the Center LIS TOP, students have developed Cyst Away, a tool to prevent metastases in the human body during laparoscopic surgery. This is a surprising result, given the young age of the field of instrument makers in training. This project will result in a reduction of complications during operations between 10% to 2.5%, making the degree of morbidity and mortality decrease significantly.

Joint vision partners

A shared vision is crucial for the success of a Center. A good vision starts in practice and works towards solutions that can ensure a public-private partnership. Central topics include the coordination of existing education, the development of new knowledge for the benefit of the new curricula and the development of research or development competencies.

The following quotes gathered by Center GreenPAC clarify how much of an added value a shared vision can be:

- Developer DutchFiets: Johannes Alderse Baas. "The great benefit [of GreenPAC] is that I can use machines and tools that I don't possess myself."
- Lector Stenden PRE: Jan Jager, "Within GreenPAC, we respond to the newest developments in the plastics industry."
- Director Trending Industries: Donald Spaans, "The guidance [that GreenPAC offers] in terms of entrepreneurship is extremely useful."
- Director Cumapol: Marco Brons, "In the development of our products, support [from GreenPAC] is extremely crucial."



Ownership

The collaboration in Centers is often a joint-venture between educational institutes and the professional field. Besides the aspect that companies may be administratively involved in a Center, leadership from companies - in addition to the ordinary influencing of the agenda - is also of great added value.

The Jean School is an initiative of James Veenhoff (former director and instigator of the Amsterdam Fashion Week) and Mariette Hoitink (owner HTNK Fashion recruitment and consultancy). In 2009, Veenhoff and Hoitink launched the House of Denim foundation; a platform for expertise and innovation in the denim industry. Education is crucial for innovation, but, as it turned out, there were no jeans training programs anywhere in the world. For this reason, the Amsterdam ROC was approached to start a pilot for an adequate denim program. In collaboration with a number of leading jeans brands and other experts in the field, the required knowledge and structure of the curriculum was extensively discussed. In 2012, the Jean School opened its doors.

Long term co-creation

Together with the work field parties, almost all Centers organize a number of activities that indicate long-term co-creation. In certain cases this is expressed very explicitly, in other cases more implicitly. For Centers that have a long-term budget plan, the explicitness of co-creation is self-evident.

- ACIN has long-term contracts with businesses, which in exchange receive a greater say in the management of the Center. By paying for the continuity of a Center, research questions with strategic importance to the company can be added to the research agenda more easily. The idea that research priorities can drive practice-oriented research by demand, becomes more realistic in this setting.
- At the request of NBTC Holland Marketing, Marketing Oost, RECRON, HISWA and regional governments the Centre of expertise for Leisure, Tourism, and Hospitality (CELTH) conducted a future study 'the future of the permanent guest'. Researchers expect more co-creation between businesses and consumers, so that different forms of accommodation can be provided and more freedom is given in design and implementation. In a world that still strongly focuses on demand, the program offers tools for businesses and policy makers to develop products, services and regulations from a more demand-driven perspective.



Unique Selling Point

In the long term, besides the joint activities and visions that parties share, Centers also require a face to present to the outside world that is easy to understand and market. The way in which ownership is regulated and parties recognize the importance of Centers is very crucial to this. In addition, Centers may claim in what respect they offer a unique range of education and professional fields in a given sector and region.

- The Center CIV Water coordinated by the SVES Friesland College realizes co-creation in educational development with the professional field and education, both in the development of the curriculum and in business training sessions. The co-creation succeeds so well because CIV Water is situated in a unique ecosystem of water-related businesses.
- With its current Center 'the Logistician of the Future!', marine training college STC-Group has a reputation to uphold as 'preferred supplier' of the port with its unique educational infrastructure. The Center itself wishes to continue to profile itself on the basis of its learning environments, including simulators, labs and modern teaching aids such as serious games and virtual reality.
- The Center Combustion Engines coordinated by the SVES Da Vince College provides practice-relevant and lifelike education, also for the BOL. To make this possible, the practical training center is equipped with practice-relevant machinery and equipment to support practical learning. Teachers and practitioners work together on the basis of hybrid learning.

**“WHAT IS YOUR EXISTENCE AS AN
EDUCATIONAL INSTITUTE, IF YOU CAN'T
RESPOND TO THE MARKET ISSUES?”**

MARIANNE VAN HULSBERGEN - TEACHER KELLEBEK COLLEGE

Collaboration between levels of education

Explanation: close alignment in cooperation between secondary education, secondary vocational education, higher education and academic education is what lies at the heart of the Centers. Especially the alignment between vocational and higher education is prominent. In addition, there are also collaborations with primary education, secondary education and universities. The primary education collaboration mainly takes place via the higher education Centers. Collaboration with secondary schools is strongest in secondary vocational oriented Centers. Academic education collaboration is linked to both vocational and higher education Centers.

- Center GreenTechNHN of the AOC Clusius has also ensured that agricultural higher education has been introduced to Noord-Holland. This desire from both the sector and the province, which existed for many years, has now finally been realized. In September 2016, 13 students started the Associate Degree program in Hoorn. In 2015, this number was 18. Next year, the Ad will also be offered in full-time, so that the current 4th year students can smoothly transfer to this program.
- Within the Center Combustion Engines of the SVES Da Vinci College, a primary vocational education program was developed in collaboration with the four primary vocational institutes involved. In 2015, a pilot was launched with approx. 8 students at one of the four primary vocational schools. As of 2016, the choice program was implemented even further. Intense discussions are currently ongoing with UAS about the potential development of higher education modules.

Embedding in the region

In all Centers, we are seeing that meaning is found in the activities related to the regions in which the Centers are active. However, there is currently little reciprocal action from regional players to actively involve the Centers in their policies.

- The Amsterdam Creative Industries Network of the Amsterdam University of Applied Sciences, Inholland University of Applied Sciences and AHK specifically focuses on issues related to the Amsterdam Metropolitan Area (AMA) labor market. This labor market is changing at a rapid pace as a result of digitization. The question in the AMA therefore focuses on how education and industry must approach these impacts and how to translate them into curricula and business operations.
- The Center Logistician of the Future! of the STC-Group focuses on the harbor monitor, which also discusses labor market issues in qualitative and quantitative terms. The STC employees (including the CIV Manager) are also invited by the Municipality and Harbor Company to discuss the human capital agenda for the harbor.
- From methodical regional learning of Center Waterroute of AOC Wellantcollege, education must be redesigned, taking context-rich learning environments for (young) professionals as a starting point, and making regional issues particularly prevalent. The educational process should be organized as flexibly as possible. First in order to more closely align itself with the outside world and, second in order to allow students to actively influence their learning process and allow for reciprocal qualification.

Learning from each other

Activities aimed at having participants within Centers learn from each other differ greatly from one center to another. For this purpose, CIV Chemie has organized learning communities and Zorgboulevard focuses on explicit programs aimed at knowledge sharing. In other centers, there are a series of general symposiums or community meetings in which participants learn more about the progress of the Center.

- For some years now, CHILL uses the Communities for Development method. As it turned out, education was not organized properly but innovation yields could be increased through more intensive knowledge sharing. The Communities for Development intertwined education and the professional field. This thanks to the deployment of more and better trained manpower (students, experienced professionals) and by working in an extremely well facilitated lab environment. Collaboration and knowledge sharing (through collaboration) is at the center of this method.
- Within the CIV Water of the ROC Friesland, it is recognized that the best type of 'mutual learning' occurs during business training sessions. This because employees from different departments come together. Moreover, a lot of knowledge sharing takes place during the project weeks in which teachers of the green and gray programs, the AOC schools and ROC schools participate.

Knowledge sharing between Centres

A number of Centers explicitly operate in the context of other Centers. For example, in the framework of an educational institute's policy, in order to align the Centers with the educational model or by offering shared facilities, such as a building, experimental laboratory, and so on. In addition, some Centers have launched initiatives to share experiences with each other, often within the regulations that initially bind the Centers.

- The Center Vooruitschakelen in the mobility sector of the SVES Graafschap College includes collaboration with Topcentrum Autoschadeherstel Zuid-Nederland (Boxtel) and the following sector: Mobility and Vehicles SVES Amsterdam, NexTechnician Mobiliteitstechniek.
- At a national level, there is an increase in active contributions to General Assemblies and meetings with other partnerships.
- The Center for Innovative Technology in Healthcare (EITZ) in Limburg, the Creative Industries Center of expertise U-CREATE in Utrecht and the Center of expertise Generade in Leiden, increasingly collaborate in the field of Health on a practice-oriented Health research agenda and joint education.
- Over the past years, a number of Centers in eastern Netherlands have taken part in joint work visits, both as visitors and as hosts. Participants in this consortium of Centers included EITZ, several Fontys Centers of expertise, Automotive Center and two Centers for Watertechnology (vocational and higher education).
- The northern Centers (Regionaal Co-makership Alfa College, Netwerk ZON 2020, CIV Healthy Ageing Friesland) share knowledge with each other through joint participation in 5 Regional Investment Funds projects. Also, they are joint applicants of the Practoraat Zorg & Technologie at the Drenthe College and the new Noorderpoort Zorg(t)huis application.

Cross-pollination of education and research

Explanation: In the cross-pollination between education and research it is important that research becomes an integral part of the educational model. This is especially the case among Centers of expertise and a number of Centers for innovative craftsmanship, in which research and developments by companies contribute to students' educational experiences. Because the professional field is still somewhat distanced from actual research and education is not yet research-minded enough, this cross-pollination is still in its early stages.

- Within the project, a research program has been implemented led by Ms. I. Delies, lecturer of the dual lectorate (Alfa-college and Stenden University of Applied Sciences) "Sustainable innovation in the regional knowledge economy". The central question of this study is: How can one, through learning in learning networks, bring the concept of 'regional co-makership' (between vocational education and the professional field in socioeconomic issues) to a higher level and what leadership is required to realize this?
- Krachtige Kernen at the Arnhem Nijmegen University of Applied Sciences is currently engaged in wicked problems that require a multidisciplinary approach. For this reason, the Center is no longer directly connected with the lectorate/knowledge center within the HAN. In an interfaculty context, the Center currently collaborates with various HAN lectorates. It also has the Community of Learning, in which various lecturers and teacher-researchers of the HAN participate. In addition to representatives from the professional field, the Advisory Board of the CoE also includes representatives from the educational field: the Advisory Board includes directors from 3 HAN institutes.
- At the Amsterdam Creative Industries Network, people work within dozens of labs. Through short-cycled experiments on the basis of socially relevant questions, these labs are able to connect with talented students, closely involved teachers and researchers.

Valorization and business

- The Center for Innovative Technology in Healthcare (EITZ) program 'Innovation and Valorization' supports parties in demand-driven development and implementation of proven and effective healthcare innovations. This makes said innovations better equipped for acceptance and deployment in daily care practice. One example of valorization is an accessible information system.
- The Regional Co-makership Center of the SVES Alfa College sometimes co-creates new products with other parties. One example of this is the toothbrush with bite protection. This toothbrush is used by caregivers to clean the teeth of people with mental disabilities. The product is designed in collaboration with the engineering and dentist assistant courses.

**"WE DON'T CONDUCT RESEARCH
TO PROVE A THEORY, BUT WE
OFFER SOMETHING PRACTICAL
THE MARKET NEEDS"**

BIENSE HOOGLAND – STUDENT

**"THIS IS NOT JUST VITAL TO ME,
BUT TO THE ENTIRE SECTOR"**

ROBERT VAN MARREWIJK – TOMATO GROWER

**WE MOVE FORWARD. WANNA JOIN?
DRAW AND AIM.
OUR NAME IS KATAPULT.**

**KATA
PULT**

**AANJAGERS
VAN DE KENNIS
VOOR MORGEN**

Colophon

This trend report: 'Collaboration in Figures' was created by Katapult, in close collaboration with Platform Bèta Techniek and Nobis. The figures in this issue are based on data from multiple Centers.

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**KATA
PULT**

**AANJAGERS
VAN DE KENNIS
VOOR MORGEN**

pbt

NOBIS

Secondary vocational education schools

Aeres Groep
CIV Agri&Food - 2013

AOC Groenhorst
Food Midde - 2016

AOC Terra
Kennisswerplaats Westerkwartier - 2014
Gilde Nieuwe Stijl - 2015
Duurzaam Coöperatief Ondernemen / Food Focus 2016

CITAVERDE College
AgroLeeft CVO Agro - 2015

Clusius College
GreenTechNHN - 2014
PPS GreenLab NHN - 2016

Deltion College
CIV Polymeren, Coatings en Composieten - 2013
FRIS - 2015

ID College
CIV Smart Technology - 2015

Koning Willem I College
Centrum voor Gezondheidstechniek - 2014

Landstede
PPS Zorginnovatie Zorgtrainingscentrum Regio Zwolle - 2015

Leidse Instrumentmakers School
LiS TOP - 2013
Instrumentation for Space - 2016

Lentiz onderwijsgroep
CIV Tuinbouw & Uitgangsmaterialen - 2013

Onderwijsvernieuwing en technologie binnen Greenport Horti
Campus Westland - 2016

mbo Amersfoort
WarenhuisPLUS - 2016

mbo College Westpoort
NexTechnica Mobiliteitstechniek - 2016
Topcentrum Meubelindustrie - 2016

Nimeto Utrecht
Excellent Vastgoedonderhoud - 2016

Nordwin College
100% Duurzaam - 2015
Biobased Economie Fryslân - 2016

Regio College
Food & Proces Tech Campus - 2014

ROC A12
Tech4Food - 2015

ROC Albeda College
The Real Band - 2015
RDM Training Plant - 2016

ROC Alfa- college
Model Regionaal C - 2015
RTC2020 - 2014

ROC Arcus College
Tech2Create, comakership onderwijs en bedrijfsleven - 2015
Technologie in de zorg. Zorgtechniek Limburg - 2013

ROC Da Vinci College
Civ Energie - 2014
PPS Verbrandingsmotoren (VMT) - 2014
GOBouw - 2016

ROC de Leijgraaf
Samen werken voor toekomst van procesoperators in AgriFood Capital - 2016

ROC Drenthe College
Centrum Duurzame Chemische Technologie - 2014
Practoraat Zorg & - 2016

ROC Friese Poort
Civ Healthy Ageing Friesland - 2016

ROC Friesland College
CIV Water - 2013

ROC Gilde Opleidingen Beroepsonderwijs en Educatie
Centrum voor innovatief vakmanschap
Installatietechniek Limburg - 2015
Centrum voor Logistiek Vakmanschap - 2015
Talent in bedrijf - 2016

ROC Graafschap College
CIVON - 2013
Stichting Mobiliteitsleren Vooruitstapen
in de mobiliteitsbranche - 2015

ROC Leeuwenborgh
Chemelot Innovation and Learning Labs (CHILL) - 2011
beYond - 2015

ROC Midden Nederland
Technologieroute - 2015

ROC Mondriaan
High Tech Centre Delft - 2014
Extra Strong - 2016
Partners in @ction for cyber Talent (P@CT) - 2016

ROC Nijmegen eo
De Technische 2.0 - 2015
Beroepsonderwijs in Logistics Valley - 2016

ROC Noorderpoort
Civ Energie - 2013
Netwerk ZON2020 The H(health) factor - 2016

ROC Nova College
Techport mbo - 2014
Praktijkroute Zorg als c - 2016

ROC Rijn IJssel
Ij5Lab - 2011
Creative Lab - 2015
Oos - 2015

ROC Rivor
PPS TechExpress - 2016

ROC Ter AA
mbo Automotive Centrum - 2011
"Bouw- en Infracentrum"
PORTAAL - 2016

ROC Tilburg
PPS Aerospace - 2014
PPS Logistieke Academie Midden Brabant - 2015
Samen Slim Bouwen aan de Toekomst - 2015

ROC van Amsterdam
CIVci 2.0 - 2014
House of Logistics - 2014
PPS Cybersecurity Centre MRA - 2015
Zorg in de wijk in de 21e eeuw - 2016

ROC van Flevoland
PPS TechPack Flevoland - 2016

ROC van Twente
TechWise Twente - 2014
Bouwen aan de toekomst - 2015
PPS Transport, Logistiek en Mobiliteit Twente - 2016
Praktijkcentrum Procestechnologie Oos - 2016

ROC West-Brabant
CIV Passie voor Biobased - 2013
Zorgboulevard - 2014
Composite Maintenance Cluster West Brabant - 2015
Vakcentrum Bouwtechniek Biesdonkweg Breda - 2015
Centrum voor Mobiliteit en Logistiek Wes - 2016
PPS Het Eventum Bergen op Zoom - 2016

Scalda
Food Lab Zeeland - 2015

Scheepvaart en Transport College
CIV Maintenance en Procestechniek Rijnmond - 2013
CIV Met Maritieme Techniek naar de Top - 2013
De logisticus van de toekomst! - 2013

SINTLUCAS
Centrum voor Restauratietechniek - 2014
Creative Lab Brainport - 2016

Stg ROC Summa College
Teclab - 2013
System Integrator - 2014
Topcentrum Autoschadeherstel Zuid Nederland - 2015
Samen Slim Zorgen Thuis - 2016

Stichting ROC AVENTUS
Sustainable Automotive Mobility college - 2016

Wellantcollege
Waterroute: van leren naar werk in coalitie met de regio - 2015
Go2 - 2016

Zadkine
CIVOM - 2011
Masterplan MEI Zui - 2014
Zui - 2015

Universities of Applied Sciences

ArtEZ
Centre of Expertise Future Makers in Fashion & Design - 2015

Avans Hogeschool
Centre of Expertise Biobased Economy - 2013

De Haagse Hogeschool
Centre of expertise Cybersecurity - 2015

Fontys Hogescholen
Centre of Expertise High Tech Systems & Materials - 2013
Expertisecentrum Gezondheidszorg en Technologie - 2013

Hanzehogeschool Groningen
Centrum Energie EnTranCe - 2013
Healthy Ageing - 2013

HAS Hogeschool
Centre of Expertise Food - 2013
Centre of Expertise Greenport - 2013

Hogeschool Leiden
Generade - 2013

Hogeschool Rotterdam
Expertisecentrum Maatschappelijke Innovatie - 2013
RDM Centre of Expertise - 2013

Hogeschool Utrecht
Centre of expertise Smart Sustainable Cities - 2013
Ucreate - 2013

Hogeschool van Amsterdam
Amsterdam Creative Industries Network - 2013
KenniscDC Logistiek - 2013

Hogeschool van Arnhem en Nijmegen
Automotive Centre of Expertise - 2011
Centre of Expertise Krachtige Kernen - 2013
Centre of Expertise Sport en Beweegtalent - 2013
CoE HAN BioCentre - 2013
CoE Sneller Herstel - 2013
iXperium - 2013
SEECE - 2013

Hogeschool Van Hall Larenstein
CoE Agrodier - 2013
Kenniscentrum Natuur en Leefomgeving

HZ University of Applied Sciences
Deltatechnologie - 2013

NHL Hogeschool
Centre of Expertise Water Technology - 2011

NHTV internationale hogeschool Breda
Toerisme, leisure en hospitality - 2013

Saxion Hogeschool
Cleantech Center - 2013
TechForFuture, het Centre of Expertise high tech systemen en Materialen Oost - 2013
TechYourFuture, Centre of Expertise voor Techniekonderwijs - 2013

Stenden Hogeschool
Green PAC - 2013

Vilentum Hogeschool
Centre of Expertise Open Teelten - 2013

Wageningen University namens Groen Kennisnet
Centre for Biobased Economy - 2013

Zuyd Hogeschool
Centre of Expertise Nieuwe Energie, Built Environment en Renewables - 2015
Chemelot Innovation and Learning Labs (CHILL) - 2011
Innovatieve Zorg en technologie - 2013

