



Annual Report 2018



November 2019

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SUMMARY

LEARN! is a multidisciplinary institute that comprises both pedagogical, neuropsychological as well as applied educational studies. Its mission is to improve insight and knowledge concerning education in the broadest sense of the word, comprising formal and informal education, as well as upbringing. LEARN! focuses on the development of children, students and adults in the context of home, school and leisure activities. Research programmes focus on innovative teaching environments, learning and teaching strategies and on biological, psychosocial and cultural factors that promote talent development in a lifetime perspective. Many research projects are carried out in direct collaboration with societal partners (e.g. schools, universities of applied sciences, educational industry and others).

Important highlights in the development and organisation of the institute in 2018

1. Start of first LEARN! postdocship
2. Comenius grant for Chiel van der Veen
3. Start of academic workshops in long-term care
4. Joining of LEARN! by prof. Maartje Raijmakers

DEVELOPMENTS IN 2018

2018 was for LEARN! a year of stability. Policies set out in 2017 came to fruition, notably with the first LEARN! postdoc starting her year of research and exploring funding options. Unfortunately, the round for 2019 did not yield any candidates, which makes continuation of this initiative uncertain.

In 2018, LEARN! was joined by Maartje Raijmakers, who started as professor in the field of educational and family studies, with a focus on individual differences in learning. Prof Doret de Ruyter left LEARN! to take up an opportunity at a different university. She was thanked for her extensive contributions to LEARN! and the Vrije Universiteit Amsterdam in general. This also means that her research program, Meaningful Education in a Diverse Society, is in a transition, and will be reformulated in 2019 under new leadership.

2018 was also a successful year for acquisition, with as notable successes the Comenius grant acquired by Chiel van Veen, and the academic workshops acquired by Carlo Schuengel.

The societal advisory board of LEARN! met once in 2018. The input of its members has been valuable for PI's and has confirmed that LEARN! succeeds in its mission to have not only academic, but also societal merit.

In 2017, LEARN! updated its policies with regard to data management and ethics. These were implemented in 2018, with a self-report check for all members on implementation. This showed that whereas policies on data management during research are followed rather universally, the archiving of data lacks. From January 2019 on, the responsibility for data management has been taken from research institutes and placed with faculties, so LEARN! will not have a further role to play in this field. However, the faculty of behavioural and movement sciences saw its policies as exemplary, and LEARN! documents have formed the basis of the new faculty policies.

LEARN! remains a relatively small institute with a lean management structure. However, it is a healthy organisation of researchers with many qualities, and as an institute it is inspiring new opportunities for collaboration with other groups at Vrije Universiteit Amsterdam.

1. STRUCTURE RESEARCH INSTITUTE

1.1. Participating faculties

In 2018 the following faculties participated in LEARN!:

- Faculty of Behavioural and Movement Sciences
- VUMC Institute for Teaching and Education
- Faculty of Social Sciences
- Faculty of Theology

1.2. Research Themes

Learners, their Needs and Interests

- The learning child and adolescent
- Personalizing education to the learner
- Brain mechanisms supporting learning
- Motivation and study success
- Reading and maths
- Executive functions, mindsets and metacognitive strategies

Families, Education and Society

- Upbringing and schooling
- Flourishing, ideals and identity
- Meaningful education and citizenship education
- Parent-school collaboration

Teachers, Teaching and the Professional World of Teachers

- The role of teachers in knowledge acquisition and development
- Differentiated teaching
- The learning teacher and teacher education

1.3. Research programmes

• *Educational Neuroscience (Edu N)*

Educational Neuroscience combines the research programs Brain & Learning and Social Cognition as they existed up to 2015. The programme's mission is to increase understanding of individual development in an educational context, giving priority to so-called bridging studies at the intersection between neuroscience and educational science. Five research lines can be distinguished.

Individual differences in social cognition

The aims of this research line are 1) to study individual differences in social cognitive skills such as empathy and theory of mind, and their association with social network dynamics; 2) to study the influence of cultural orientations (e.g. individualism, collectivism and honour) on social cognitive skills.

Implicit beliefs

This research line studies the determinants, neural correlates and consequences of implicit beliefs about abilities in adolescents. The focus is on the distinction between entity beliefs

(abilities are fixed and innate) versus incremental beliefs (abilities can be improved through effort).

Reading

The focus of this research line is on the role of higher-order cognitive processes in (1) language and reading comprehension and (2) word problem solving. The research involves both fundamental and applied studies, ranging over topics from situation models to mental imagery to embodied cognition to abstract reasoning. The overarching theme underlying these diverse lines of research is the construction of a deep-level, meaning-based mental representation of the content that is studied. Some work within the research line focuses on the development of children's mathematical skills.

Executive functions

The research being carried out under the theme of Executive functions focuses on the development of “goal-directed behaviour” in young people in secondary education, and how this corresponds to academic performance. Some perform well while others make no progress whatsoever, and even appear to be at risk of dropping out. What causes this difference?

Clinical child and family studies

Child and adult development is embedded in social relations. The ‘Challenges to childrearing relationships’ research group studies the ways in which the quality of family relationships and care relationships interacts with cognitive, biological and behavioural development processes, and how this interaction can be improved by external help and support. The research is also partly embedded in the Institute for Health and Care Research (EMGO+), which is part of VU University Amsterdam and VU University Medical Centre Amsterdam.

- ***Meaningful Education in a Diverse Society (MEDS)***

The central theme of the research programme is the search for educational practices that best facilitate the development of children into adults who are able to lead a good life in a society that is culturally and religiously diverse. It combines two types of research: empirically informed theoretical research and theory driven and theory building empirical research. The programme is centred on two related themes:

Flourishing, ideals and identity

The focus of the first theme is on aspirations of parents and teachers with regard to personal formation of children. The main topics of research are: a) well-being (flourishing and happiness), b) education for a meaningful life, c) cultural and religious diversity. Furthermore, we investigate the desirability of religious arrangements of schools in relation to children's identity development.

Meaningful education and citizenship

Research within the second theme investigates the way in which educators and educational practices can best prepare children and youngsters to become citizens of a diverse society who critically contribute to the welfare of society. It addresses among others the problem of development of cultural agency, which aims at the formation of well-informed, critical and responsible citizens. It has particular interest in researching the appropriation of knowledge and abilities of high quality in a play-based and inquiry-based curriculum in Developmental Education schools.

‘Meaningful education’ is a shared research topic for both themes (and related researchers), which creates opportunities for collaboration, mutual exchange of ideas and projects that are productive for the elaboration of both themes.

- ***Personalized learning, differentiated teaching (PLDT)***

PLDT investigates the possibilities of personalization, and how it can improve education. The program distinguishes between two steps, which each generate their own set of research questions:

- **Diagnosis:** how can a teacher structure education so that he/she gets an accurate diagnosis of the learning process of the learner? What role can formative assessment play, concept checks, feedback discussions, and ICT? How can the learner and the teacher discover the learner has understood a text? For larger groups, can learning analytics be used to make learning visible, and how can this information be presented in a useful way for both the teacher and the learner?
- **Action:** how can a teacher, according to the diagnosis, personalize the education for the learner? What kind of strategies and (digital) tools does the teacher have? How can these strategies be taught to the teacher? What are the obstacles? Can education be changed in a way that it will be offering the appropriate learning content and practice? How can didactics be adapted accordingly? Is personalization already happening quite naturally by the actions of learners or peers? And, finally, the essential step: will such actions lead to greater and longer lasting learning results, and/or stronger motivation of the learner?

These questions are tackled at the following three levels of education:

- general secondary education (in the Netherlands: havo and vwo).
- higher education (university and college)
- education for teachers (teacher training courses and seminars for teachers)

Next to the research inspired by the above questions, the group also performs research into specialized didactics for school subjects. This research is largely determined by questions from educational practice (e.g., target language use in the field of modern foreign language teaching).

- ***Socially accountable undergraduate medical education (SAUME)***

This School of Medical Sciences programme comprises four domains of research: Faculty development, Pharmacotherapy education, Socially accountable undergraduate medical education and Continuing Professional Development. The research programme led by Dr. Rashmi Kusrkar and Prof. Gerda Croiset under the theme Socially Accountable Undergraduate Medical Education focuses on research geared towards finding out how to develop students for life. “Students for life” are students who constantly interact with their environment, integrate learning and practice, and are ready to invest in continuing professional development. This vision has been recently made into a film which is accessible at:

<https://www.youtube.com/watch?v=-h7klf-IZFM>

Research addresses the following topics:

Motivation, learning and academic performance

Is academic performance (cognitive and clinical performance, professional behaviour and dropout behaviour) of medical students associated with academic motivation, learning strategies, engagement, burnout, empathy, professional identity and personality characteristics? What are the mechanisms? Are there differences in these mechanisms between ethnic minority and Dutch students?

Effects of Selection:

What are the effects of student selection for medical school on the medical student population in terms of their motivation, engagement and academic performance? Motivation of ethnic minority students:

What are the factors in the informal and hidden curricula that influence the motivation of the ethnic minority students negatively?

Inter-professional Education:

How do students from medical and nursing education learn with, from and about each other?

Professional behaviour:

What are the underlying problems for unprofessional behaviour in medical students, and what are possible remediation measures for students that have been graded “unsatisfactory” due to their professional behaviour?

Faculty Development:

How does the professional identity of teachers develop? What are the tools of agency for this process?

How do teachers differ on their concepts of learning and teaching? Can we identify different groups among teachers working in a student-centered versus a traditional curriculum on the basis of their concepts of teaching and learning?

Academic motivation of ethnic minority students

Which factors influence the academic motivation of ethnic minority students? What are the mechanisms? How motivation does influence their academic performance?

Continuing Professional Development

Which factors influence a medical specialist’s motivation for lifelong learning? What are the mechanisms?

The section Pharmacotherapy at VUmc School of Medical Sciences conducts scientific research in pharmacotherapy education through the Research & Expertise Center In Pharmacotherapy Education (RECIPE). The objectives of RECIPE are: 1. The development of effective and attractive education for undergraduate and postgraduate students and teachers, based on knowledge of the process of therapeutic thinking and acting, as well as on recent insights in the field of education (evidence-based education) and 2. Conducting research concerning the process of therapeutic thinking and acting of physicians and under- and postgraduate students, particularly the treatment and drug selection process, both theoretically (declarative research), as well as in relation to schooling and training (impact research), selection process, both theoretically (declarative research), as well as in relation to schooling and training (impact research).

1.4. Organisation

Board

In 2018 the governing board of LEARN! consisted of prof. dr. P. Beek (chair), prof. dr. C. Schuengel and Margreeth van der Meijde MBA.

Executive Management

In 2018 prof dr. M. Meeter was director of LEARN!, with support from Aisha Wiersma and Stefan de Graaf.

Programme committee

The Programme Committee consisted of the coordinators of the five research lines:

- prof L. Krabbendam / dr. M. Huizinga – Educational Neuroscience;
- prof D. de Ruyter – Meaningful Education in a Diverse Society;
- prof. M. Meeter – Personalized Learning & Differentiated Teaching;
- prof. G. Croiset / dr. Rashmi Kusrkar – Socially accountable medical education.

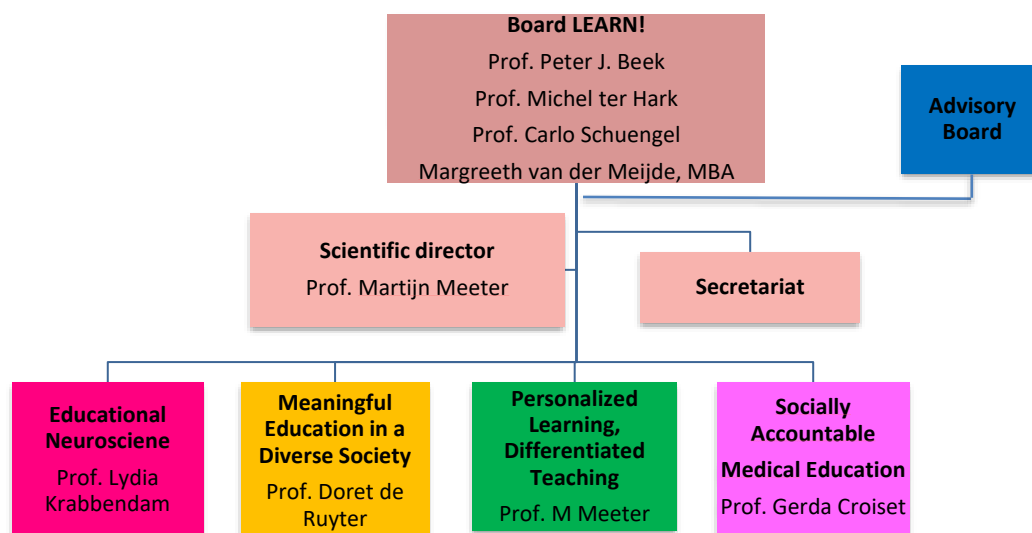
Advisory board

In order to keep a close eye on educational developments and the needs of educators, LEARN! set up an advisory board with representatives of various educational streams.

The advisory board consists of the following members:

- Maarten Faas, president board of directors orthopedagogical centre 'De Ambelt', Zwolle (primary, secondary and vocational education)
- Ivo van Hilvoorde, professor 'Exercise, School and Sport' Windesheim, Zwolle and sports philosopher VU University, Amsterdam (higher education)
- Rien Spies, director Agora group of primary schools, Noord Holland (primary education)
- Joost van Rijn, director O.R.S. Lek en Linge, Culemborg (secondary education)
- Dolf van Veen, professor urban education and youth policy Inholland, Haarlem (higher education)
- Roel de Vries, director Julianaschool, Schagen (primary education).

1.5 Organization Chart



2. COMPOSITION

2.1. Research Staff

The total number of scientific personnel in 2018 was 64 researchers amounting to 27.7 full time research fte committed to LEARN! The Faculty of Behavioural and Movement Sciences is the largest contributor followed by VU University Medical Centre. The breakdown per job category is provided in table 1, for LEARN! as a whole as per research programme. To provide some context, data from the previous year have been added.

Table 1: (SEP D3a) Research staff for the institute and per programme

LEARN!	2017	2018
Scientific staff (1)	35 / 10.13 fte	29 / 12.34 fte
Post-docs (2)	7 / 3.62 fte	15 / 7.63 fte
PhD-students (3)	18 / 5.74 fte	20 / 8.75 fte
Total research staff	63 / 19.49 fte	64 / 27.72 fte

Edu N	2017	2018
Scientific staff (1)	7 / 4.08 fte	11 / 5.02 fte
Post-docs (2)	4 / 1.67 fte	6 / 3.35 fte
PhD-students (3)	3 / 1.31 fte	11 / 5.94 fte
Total research staff	14 / 7.06 fte	28 / 14.31 fte

MEDS	2017	2018
Scientific staff (1)	4 / 1.45 fte	6 / 1.81 fte
Post-docs (2)	2 / 0.95 fte	4 / 1.91 fte
PhD-students (3)	1 / 0.48 fte	1 / 0.53 fte

Total research staff **7 / 2.88 fte** **11 / 4.25 fte**

PLDT	2017	2018
Scientific staff (1)	11 / 3.40 fte	9 / 3.51 fte
Post-docs (2)	0 fte	2 / 0.97 fte
PhD-students (3)	5 / 1.25 fte	2 / 1.08 fte
Total research staff	16 / 4.65 fte	13 / 5.56 fte

SAUME	2017	2018
Scientific staff (1)	4 / 1.2 fte	3 / 2.0 fte
Post-docs (2)	1 / 1 fte	3 / 1.4 fte
PhD-students (3)	9 / 2.7 fte	6 / 1.2 fte
Total research staff	14 / 4.9 fte	12 / 3.6 fte

Note 1: Comparable with WOPI-categories HGL, UHD en UD; tenured and non-tenured staff

Note 2: Comparable with WOPI-category Onderzoeker

Note 3: Standard PhD (employed) and Contract PhD's (externally or internally funded but not employed)

Edu N: Educational Neuroscience

MEDS: Meaningful Education in a Diverse Society

PLDT: Personalized Learning, Differentiated Teaching

SAUME: Socially Accountable Medical Education

See appendix A for a complete list of all research staff that participated in LEARN!

2.2. Financial input

Table 2 provides an overview of the various sources for financing the research staff in LEARN!. A total of 49 % of the researchers' salaries comes from direct University funding ('1e geldstroom'). 41% comes from research grants obtained in scientific competition from public funding agencies like NWO, ZonMw and the ERC ('2e geldstroom'). The remaining 11% is funded via contract research contracts (15,6%; '3e geldstroom').

LEARN!	2017	2018
Direct funding (1)	12.59 fte / 64,6%	8.9 fte / 32%
Research grants (2)	2.4 fte / 12,3%	7.7 fte / 28%
Contract research (3)	3.98 fte / 20,4%	11.13 fte / 40%
Other (4)	0.52 fte / 2,7%	-
Total funding	19.49 fte	27.72 fte

Edu N	2017	2018
Direct funding (1)	2.92 fte / 41,4%	2.62 fte / 18,2%
Research grants (2)	1.99 fte / 28,2%	3.72 fte / 26%
Contract research (3)	1.63 fte / 23,1%	7.98 fte / 55,8%
Other (4)	0.52 fte / 7,4%	-
Total funding	7.06 fte	14.31 fte

MEDS	2017	2018
Direct funding (1)	1.89 fte / 65,6%	1.98 fte / 46,6%
Research grants (2)	0.24 fte / 8,3%	0.91 fte / 21,4%
Contract research (3)	0.75 fte / 26%	1.36 fte / 32%
Other (4)	-	-
Total funding	2.88 fte	4.25 fte

PLDT	2017	2018
Direct funding (1)	2.88 fte / 62%	1,50 fte / 27%
Research grants (2)	0.17 fte / 3.7%	2,27 fte / 40.8%
Contract research (3)	1.60 fte / 34.4%	1,79 fte / 32.2%
Other (4)	-	-
Total funding	4.65 fte	5.56 fte

SAUME	2017	2018
Direct funding (1)	4.9 fte / 100%	2.8 fte / 78%
Research grants (2)	0 fte / 0%	0.8 fte / 22%
Contract research (3)	0 fte / 0%	0 fte / 0%
Other (4)	-	-
Total funding	4.9 fte	3.6 fte

Note 1: Direct funding (basis financiering / lump sum budget)

Note 2: Research grants obtained in national and European scientific competition (e.g. grants from NWO and ERC)

Note 3: Research contracts for specific research projects obtained from external organisations, such as industry, governmental ministries, European organisations and charity organisations

Note 4: Funds that do not fit the other categories

Edu N: Education Neuroscience

MEDS: Meaningful Education in a Diverse Society

PLDT: Personalized Learning, Differentiated Teaching

SAUME: Socially Accountable Medical Education

3. RESEARCH QUALITY

3.1 Research Output

Output of LEARN! has decreased somewhat in 2018. That is partly due to that “other research input” has been recorded less faithfully than in the past.

LEARN!	2017	2018
Refereed articles	134	122
Non-refereed articles (2)	0	0
Books	13	9
Book chapters	37	18
PhD-theses	3	8
Conference papers	26	52
Professional publications (3)	25	25
Publications aimed at the general public (4)	26	6
Other research output	70	30
Total	334	269

Educational Neuroscience	2017	2018
Refereed articles	54	43
Non-refereed articles (2)	0	0
Books	2	2
Book chapters	5	2
PhD-theses	0	1
Conference papers	1	2
Professional publications (3)	2	2
Publications aimed at the general public (4)	0	0

Other research output	8	4
Total publications	72	56

MEDS	2017	2018
Refereed articles	17	12
Non-refereed articles (2)	0	0
Books	3	3
Book chapters	14	8
PhD-theses	1	3
Conference papers	5	9
Professional publications (3)	7	8
Publications aimed at the general public (4)	20	6
Other research output	13	8
Total publications	80	57

PLDT	2017	2018
Refereed articles	38	31
Non-refereed articles (2)	0	0
Books	7	2
Book chapters	18	8
PhD-theses	1	0
Conference papers	20	0
Professional publications (3)	14	14
Publications aimed at the general public (4)	5	0
Other research output	21	4
Total publications	124	59

SAUME	2017	2018
Refereed articles	25	36
Non-refereed articles (2)	0	0
Books	1	2
Book chapters	0	0
PhD-theses	1	4
Conference papers	0	41
Professional publications (3)	2	1
Publications aimed at the general public (4)	1	0
Other research output	28	14
Total publications	58	97

Note 2: Articles in journals that are non-refereed, yet deemed important for the field

Note 3: Publications aimed at professionals in the public and private sector (professionele publicaties), including patents and annotations (e.g. law).

Note 4: Also known as “populariserende artikelen”.

Note 5: Other types of research output (if applicable), such as patents, editorships, inaugural lectures, designs and prototypes (e.g. engineering) and media appearances.

Edu N: Education Neuroscience

MEDS: Meaningful Education in a Diverse Society

PLDT: Personalized Learning, Differentiated Teaching

SAUME: Socially Accountable Medical Education

3.2 Key Publications

1. Brinkman, D. J., van Rossem, A. P., Tichelaar, J., Richir, M. C., & van Agtmael, M. A. (2018). Does Medical Students Knowing More About Drugs Lead to Better Treatment Choices? *Journal of Clinical Pharmacology*, *57*, 1071-1072.
2. de Koning, B. B., Bos, L. T., Wassenburg, S. I., & van der Schoot, M. (2018). Effects of a Reading Strategy Training Aimed at Improving Mental Simulation in Primary School Children. *Educational Psychology Review*, *29*, 869-889.
3. Hodes, M. W., Meppelder, M., de Moor, M., Kef, S., & Schuengel, C. (2018). Alleviating Parenting Stress in Parents with Intellectual Disabilities: A Randomized Controlled Trial of a Video-feedback Intervention to Promote Positive Parenting. *Journal of Applied Research in Intellectual Disabilities*, *30*, 423-432.
4. Isik, U., Wouters, A., Ter Wee, M. M., Croiset, G., & Kusurkar, R. A. (2018). Motivation and academic performance of medical students from ethnic minorities and majority: A comparative study. *BMC Medical Education*, *17*, 233.
5. Schinkel, A. (2018). The educational importance of deep wonder. *Journal of Philosophy of Education*, *51*, 538-553.
6. Snell, J., Meeter, M., & Grainger, J. (2018). Evidence for simultaneous syntactic processing of multiple words during reading. *PLoS One*, *12*, e0173720.
7. van der Veen, C., de Mey, J. R. P. B., van Kruistum, C. J., & van Oers, B. (2018). The effect of productive classroom talk and metacommunication on young children's oral communicative competence and subject matter knowledge: An intervention study in early childhood education. *Learning and Instruction*, *48*, 14-22.
8. Vander Heyden, K. M., Huizinga, M., Raijmakers, M. E. J., & Jolles, J. (2018). Children's representations of another person's spatial perspective: Different strategies for different viewpoints? *Journal of Experimental Child Psychology*, *153*, 57-73.
9. Veen, M., & de la Croix, A. (2018). The swamplands of reflection: using conversation analysis to reveal the architecture of group reflection sessions. *Medical Education*, *51*, 324-336.
10. Vu, T-V., Finkenauer, C., Huizinga, M., Novin, S., & Krabbendam, L. (2018). Do individualism and collectivism on three levels (country, individual, and situation) influence theory-of-mind efficiency? A cross-country study. *PLoS One*, *12*, e0183011.

3.3 Indicators of esteem

LEARN!	2017	2018
Awards	16	12
Grants	15	27
Invited Lectures	57	27
Editorial positions	18	21
Organisation of conferences / workshops	15	12

Edu N	2017	2018
Awards	3	3
Grants	4	11
Invited Lectures	8	3
Editorial positions	4	6
Organisation of conferences / workshops	4	0

MEDS	2017	2018
Awards	0	1
Grants	4	7

Invited Lectures	25	6
Editorial positions	10	8
Organisation of conferences / workshops	3	0

PLDT	2017	2018
Awards	3	1
Grants	6	3
Invited Lectures	12	8
Editorial positions	4	3
Organisation of conferences / workshops	4	3

SAUME	2017	2018
Awards	10	7
Grants	1	6
Invited Lectures	12	10
Editorial positions	0	4
Organisation of conferences / workshops	4	9

Edu N: Education Neuroscience

MEDS: Meaningful Education in a Diverse Society

PLDT: Personalized Learning, Differentiated Teaching

SAUME: Socially Accountable Medical Education

4. SOCIETAL RELEVANCE

4.1 Overview

Societal impact is of utmost importance to LEARN! Of its three aims, two (Integration of basic and applied research, and knowledge transfer with special attention to the formulation of relevant research questions and translation of research results into applications and everyday practice in the home, at school, and in other environments) fall squarely within the concept of societal impact.

Integration of basic and applied research is organized through:

- Structural collaboration with schools for primary and secondary education, universities of applied sciences, municipalities, such as the city of Amsterdam, intermediary institutions such as Platform Betatechniek, educational publishers and industry.
- External PhD students who have research & teaching positions in Universities of Applied Sciences or schools, in this way embodying the close interaction between research and educational practice.
- Interaction between programme leaders and the advisory board consisting of representatives of various educational streams met twice and gave the programme leaders valuable input for their research.
- development of academic workplaces (see below)

The transfer of knowledge is organised through:

- public lectures and professional publications;
- The University Centre for Behaviour and Movement (UCGB), which offers teacher training for secondary school teachers, a master's programme aimed at universities of applied sciences (HBO) teachers, professional development courses for teachers in secondary and higher education and courses in educational sciences;
- Collaboration with 'De Activiteit', an organisation for the implementation and support of Developmental Education in primary schools;

Looking at the indicators of societal impact shown in the next sections, it becomes clear that LEARN! researchers are prolific in transmitting the products of their research to professionals and the general public: each year they write many professional publications and publications aimed at the general public (such as newspaper articles), and they contributed to many reports. Some reports came out of contract research, which were awarded regularly to LEARN! researchers. Members of LEARN! were also active in extra-academic committees on the basis of their expertise, for example in the field of educational and youth policy and in the field of diversity in education.

Products for society. Over the years, LEARN! has engaged in many projects of applied research. One example is the research that led to PestPlotter, a tool used in schools to plot the social dynamics in school classes that lead to bullying. This tool came out of the dissertation of PhD student Jeroen Pronk, with dr Frits Goossens as his daily advisor. In 2018, a grant was acquired to investigate the best way to use PestPlotter in combating mobbing in Dutch secondary schools.

Notwithstanding the success of LEARN!’s efforts at creating societal relevance, there are some opportunities that are not yet fully taken advantage of. For example, teacher education at VUA is supported by groups within LEARN!, but links to LEARN! research are not yet as strong as they can be.

4.2 Indicators of esteem

Indicators of esteem, other than external PhD positions, have not been registered well in the systems of VU, and have been left out for 2018

LEARN!	2017	2018
Contributions to public documents		-
Contributions to policy reports		-
Appointments / Positions paid by societal groups	2	0
External PhD positions	13	12
Use of datasets, software tools, instruments by societal groups	2	-
Use of datasets, software tools, instruments by peers	5	-

External PhD positions

Name candidate: Gerdes, J.; Title *Effectieve ondersteuning van leerlingen binnen het regulier voortgezet onderwijs door verbeterde samenwerking tussen ouders, school en jeugdhulpverlening*
Supervisor: Doret de Ruyter; co-supervisors: Sui Lin Goei, Mariëtte Huizinga

Name candidate: De Jong, W.; Title: *Levensbeschouwelijke vorming in OGO*; Start: 1-1-2013;
Planned end date: fall 2018; Supervisors: Bert van Oers, Siebren Miedema

Name candidate: Nieuwmeijer, C.; Title: *Effects of cooperation between musician and teacher for music education of young children in free musical play*; Start: 1-6-2013; Planned end date: End 2018; Supervisors: Bert van Oers, Nigel Marshall

Name candidate: van Schelven, D.; Title: *Start in de stad. Kwaliteit van de aansluiting van de lerarenopleiding basisonderwijs op de beroepspraktijk*. Start: 2-05-2015; Planned end date: 31-10-2020; Supervisor: Jos Beishuizen, Martijn Meeter.

Name candidate: Muruzábal Lamberti, P.; Title: *Apprentices of listening. Listening as a dialogical virtue and skill in primary education*. Start: 31-08-2018; Planned end date: 31-08-2023; Supervisor: Josef Früchtel; Co-supervisors: Ander Schinkel, Chiel van der Veen.

Name candidate: *Rezende Da Cunha, F.*; Title: *Social networks: integrating new technologies to secondary education classrooms*; Start: 1-1-2014; Planned end date: *End 2018*; Supervisors: *Bert van Oers*, Co-supervisors: *Claudia van Kruistum, Michael Kontopodis*

Name candidate: Slim, T.; Title: *Wetenschap en technologie in het basisonderwijs*
Supervisor: *Maartje Raijmakers (promotor)*; co-supervisors: *Anna Hotze (iPabo), Marjolein Dobber, Johanna van Schaik*.

Name candidate: *Stekelenburg, L.*; Title: *Vorming van hbo studenten tot verantwoordelijke professionals met een ethisch kompas*. Start: 1.12.2014 – Planned End date: 1.1.2019; promotor: *Doret de Ruyter*; co-promotor: *Wouter Sanderse*

Name candidate: *Valstar, J.*; Title: *De kindertheologische leeromgeving*; Start: 2011; Planned end date: *End 2018*; Supervisors: *Siebren Miedema*

Name candidate: Westein, Marnix; Title: *Workplace based assessments in pharmacy residency training*; Start: 1-1-2017; Planned end date: 31-12-2021; Supervisors: Marcel Bouvy Co-supervisors: Rashmi Kusurkar, Andries Koster.

Name candidate: *Worthington, M.*; Title: *The emergence of early mathematical notions in young children* Start: *Nov 2007*; Planned end date: *Mid 2018*; Supervisors: *Bert van Oers*

Name candidate: Wynberg, E.; Title: *Understanding young children's object-oriented play: Theory, development, and implications for early childhood education and care*; Start: 01-03-2018; Planned end date: 29-02-2024; Supervisor: Maartje Raijmakers; Co-supervisors: Chiel van der Veen, Annerieke Boland.

5 Performance Indicators LEARN! 2018 per assessment dimension

	QUALITY DOMAINS			
ASSESSMENT DIMENSIONS	<i>Research quality</i>		<i>Relevance to society</i>	
<i>Demonstrable products</i>	1. Research products for peers		4. Research products for societal target groups	
	- Research articles refereed	122	- professional publications	25
	- Research articles non refereed	0	- publications aimed at general public	6
	- Scientific books	9		
	- Scientific book chapters	18		
	- PhD Thesis	8		
	- Conference papers	52		
<i>Demonstrable marks of recognition</i>	3. Marks of recognition from peers			
	- Science awards / prizes	12		
	- Research grants	27		
	- Key notes	27		
	- Editorial positions	21		
	- Organisation of conferences / workshops	12		

6. VIABILITY

6.1 SWOT Analysis

<i>Internal organisation</i>	Strengths	Weaknesses
	<ul style="list-style-type: none"> - International and national recognition of research - Strong relations with other (inter)national research groups - Strong presence in the internationally strongly growing field of Educational Neuroscience - Strong relations with societal partners - Multidisciplinary, with strong relation between basic and applied aspects and possible dissemination to educational practice - Clear societal visibility - Good earning capacity 	<ul style="list-style-type: none"> - Relatively small senior staff - Somewhat divergent themes that are not all highly visible internationally - Not all groups equally able to obtain external funding
<i>External context</i>	Opportunities	Threats
	<ul style="list-style-type: none"> - Research on educational themes like diversity (in gender and culture), professionalization, executive functions has high societal priority - Education is high on the agenda of VUA - Education sciences are experiencing a rising tide in the Netherlands, with opportunities arising for LEARN! from both the sector plan and the national science agenda. - Strong interest in brain and behaviour in educational organizations and general public; necessity for educational reform; much interest in neuroscience in grant giving organizations - High societal relevance - Our network of schools for Developmental Education, Institutes for Initial Teacher Education and School counselling services provide opportunities for links with practice, and for collaboration in submitting bids 	<ul style="list-style-type: none"> - Decline in overall amount of funding NWO/NRO, leading to increasingly fierce competition for research funds - Increased teaching and management loads for senior staff - Further decline of first-stream funding of research

7. EARNING CAPACITY

Funding strategy

In order to support and stimulate (interdisciplinary) grant applications the LEARN! management formulated an overall funding strategy for the years 2014-2018. This strategy shows the link between research and funding targets and describes the goals, conditions and directions for funding, together with a list of national and international grant providers and potential collaborators in the public sector. The overall funding strategy is worked out in action plans per research programme.

Description	Grant	Total amount	2018
ZonMw EURmc P. van Lier	ZonMW	€ 198.935	€ 49.734
EFG N. van Atteveldt	Overig	€ 20.000	€ 10.000
Heterogeniteit	Overig	€ 39.000	€ 39.000
ZonMW Sterkenburg EMB ICT	ZonMW	€ 400.000	€ 100.000
Ipabo Exalto	Overig	€ 83.438	€ 27.813
ZonMW MVG Schuengel 2018	ZonMW	€ 400.000	€ 97.959
Zwaartekracht WP 2 Bakermans	NWO	€ 507.783	€ 84.631
Bartimeus Sterkenburg 2018	Overig	€ 32.500	€ 16.957
ZoNMW KEF 2019 Autonomie	ZonMW	€ 149.968	€ 74.984
ZonMW Sterkenburg ACAD werkplaats	ZonMW	€ 393.356	€ 393.356
ZonMW Schuengel Academische w	ZonMW	€ 542.420	€ 542.420
Comenius beurs Veen	Ministeries	€ 50.000	€ 33.333
NRO Veen 2018	NWO	€ 100.000	€ 63.158
NRO opdracht Veen	NWO	€ 16.000	€ 28.000
NRO Dobber Zin in lezen	NWO	€ 501.880	€ 162.772
NRO Raimakers 2018	NWO	€ 47.425	€ 37.940
NRO Dobber Ontwikkeling van een toolkit	NWO	€ 9.995	€ 9.226
NRO Vries 2018	NWO	€ 88.436	€ 62.425
3_Erasmus+ BASE	Europese Commissie	€ 48.226	€ 16.075
NRO Pronk 2018	NWO	€ 100.000	€ 75.000
NRO Geraedts 2018	NWO	€ 99.994	€ 66.663
Total		€ 3.829.356	€ 1.991.445

8. COLLABORATIONS

8.1 National collaborations

Nationally, LEARN! researchers have close ties with professional organisations outside the university, such as universities of applied sciences (Saxion, HvA, InHolland, HU, iPabo, Windesheim), schools for secondary and primary education, municipalities (e.g. Foundation Flore, Foundation Tabijn, Ogo-schools, City of Amsterdam) school advisory organisations (e.g. De Activiteit, OBD Noord-West) and publishers (e.g. ThiemeMeulenhoff).

Furthermore, researchers of LEARN! interact and collaborate closely with each other and other national research partners. A selection of the most important partners in 2018 can be found below per research programme.

Edu N	MEDS	PLDT	SAUME
Prof. dr. L. Verhoeven, Univ. Nijmegen Prof. dr. A. Aleman, UMCG Prof. dr. H. Swaab, UL Prof. dr. E. Crone, UL Prof. dr. P. van Geert, RuG Prof. dr. R. Goebel, UM Dr. R. de Groot, Open Univ. Prof. dr. R. Ridderinkhof, UvA Prof. dr. P. Leseman, UU Prof. dr. J. van Os, UM	Prof. dr. M.L.L. Volman & Prof. dr. M. Merry, UvA Prof. dr. K. Boersma, UU Dr. Bram de Muynck, Driestar Dr. R. Keizer & Dr. A. Boland, Ipabo, Prof. dr. Jan Hoogland, VIAA B. Pompert & N. Fijma, De Activiteit,	Prof. dr. M.L.L. Volman, UvA Prof. dr. M. Brekelmans, UU Prof. dr. F.J.J.M. Janssen, UL Prof. dr. W. van Joolingen, UU	Prof. dr. M.L.L. Volman, UvA Prof. dr. J. Cohen-Schotanus, UMCG Prof. dr. C van der Vleuten, Prof. dr. A Scherpbier., Prof. Dr. Walther van Mook, MUMC Prof. dr. A de Boer, Dr. A Koster, UU & Prof. dr. T.h.J. Ten Cate, Dr. H.E. Westerveld, UMCU Dr Robert Hulsman and Dr Gerard Spaai, Amsterdam Medical Center

8.2 International collaborations

Internationally, LEARN! researchers collaborate with:

Edu N	MEDS	PLDT	SAUME
Prof. dr. S. Shergill (King's college, London); Prof. dr. S.J. Blakemore (UCL, London)	Prof. Marilyn Fleer and Prof. dr. N. Veresov, Monash University Melbourne, Australia; Ghent University, Belgium, Prof. dr. P. Smeyers Clark University, Prof. S. Michaels	Prof. dr. W. Doyle (Univ of Arizona, US) Prof. dr. J. Grainger (Univ Aix-Marseille, France) Esther Canrinus & karen Hamerness (Univ of Oslo)	Prof. Dr. A. Teherani, University of California San Francisco, USA Dr. Marieke Koster and Prof. Dr. Timothy Smith, Harvard University, USA Prof. Dr. Liping Li and Dr. AN Min, Shantou Medical College, Shantou University, China Prof. Dr. J. Gonnella and Prof. Dr. M. Hojat, Sidney-Kimmel

			Medical College, Thomas Jefferson University, Philadelphia, USA Late Prof Dr KV Mann, University of Dalhousie, Canada Prof Dr I. Kramer, University of Bordeaux, France
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Moreover, as an institute LEARN! collaborates with:

- International research communities such as STEP AERA, RDC Professional Development of Teacher Educators ATEE, PESGB and AME; The Executive Committee of EARLI;
- GI4all European IT network with GIS research institute at the University of Salzburg;
- The International Mind Brain Learning Society (IMBES), specifically within the committee for the development of educational neuroscience, and the steering group Brain, Learning and Education instigated by the OESO (Centre for Educational Research and Innovation, CERI);

9. QUALITY CONTROL

Research institutes at Vrije Universiteit are increasingly expected to play a role in quality control. This includes guarding against ethical transgressions by its researchers, and making sure that data is stored in an appropriate way, safeguarding privacy of participants but archiving it and making it available as much as possible to the research community.

Ethical vetting occurs within the faculties that are part of LEARN! Each faculty has its own ethics committee, while the SAUME programme makes use of the ethics committee of the association for research into medical education (NVMO, http://www.nvmo.nl/ethische_toetsing_onderzoek). However, this does not cover all aspects of good science practices. LEARN! therefore in 2016 developed an ethics self-check that results in a green, yellow or red light on the aspects of data management, sensitivity to privacy, and overall ethics. This checklist was completed by most researchers within LEARN! in December 2016; a second round of self-assessment through this tool will occur in fall 2018, with follow-up conversations planned with those researchers that continue to score red on one or more aspects. In this round, the checklist will be updated to reflect the new LEARN! policies on data management.

APPENDIX

A: List of researchers per programme

Educational Neuroscience

Atteveldt, N.M. van
Altikulac, S.
Asscheman, J.S.
Bakermans, M.J.
Behnsen, P.M.
Benneker, I.M.B.
Bouwer, I.R.
Braams, B.R.
Buil, J.M.
Bisschops, E.H.
Buuren, M. van
Forrer, M.L.
Hanssen, E.M.E.
He, J.
Huizinga, M. (Mariëtte)
Iliás, M.A.H.
Janssen, T.W.P.
Jolles, J.
Kesteren, M.T.R. van
Klaassens, B.L.
Koot, S.
Krabbendam, A.C.
Leeuwis, F.H.
Lemmers-Janssen, I.L.J.
Lier, P.A.C. van
Lieshout, E.C.D.M. van
Lutz-Landesbergen, M.C.
Mohamed, A.R.
Nieuwenhuis, S..
Oosterman, M.
Ozmen, K.
Rest, M.M. van
Rot, E.J.W.
Schippers, B.
Schoot, M. van der
Schuengel, C.
Sijtsma, H.
Sterkenburg, P.S.
Tetering, M.A.J. van
Tieskens, J.M.
Tuyll van Serooskerken, J.M. van
Walsh, R.J.
Willemen, A.M.
Wouda, M.C.
Yang, B.
Yavas, E.

Personalized Learning & Differentiated Teaching

Andre, L.
Beishuizen, J.J.
Berg, E. van den
Bosma, T.
Brederode, M.E. van
Broekhof, E.
Cornelisz, I.
Cremer, M.
Croix, A. de la
Dengerink, J.
Dijkstra, F.S.
Donszelmann, S.
Eegdeman, I.
Erdelen, D.Z. van
Geraedts, C.L.
Glasbeek, H.A.
Goei, S.L.
Halem, N. vanHandelzalts, A.
Haring, M.M.G.
Hoencamp, M.L.M.
Jong, W. de
Kaal, A.A..
Klaveren, C.P.B.J. van
Kroes, B.
Landa, I.
Lieshout, E.C.D.M. vanLunenbergh, M.L.
Meeter, M.
Oeveren, C.D.P. vanOttenhof, K.W.
Pauw, I.
Pullen, A.G.
Ramdas, S.K.K.
Sapountzi, A.
Savi, O.A.
Schee, J.A. van der
Snell, J.J.
Swennen, J.M.H.
Terwel, J.
Visser, L.B.
Vries, B. deWestbroek, H.B.
Wierik, M.L. te
Zwet, M. van der

Meaningful Education in a Diverse Society

Bertram-Troost, G.D.
Dobber, M.
Exalto, J.
Gerdes, J.
Groenendijk, L.F.
Hoek, J.J. van der
Hoeke, M.K.
Jong, W. de

Kaye, T.M.
Kruistum, C.J. van
Melchers, M.E.H.L.
Miedema, S.
Pels, T.V.M.
Ponzoni, E.
Rezende Da Cunha Júnior, F.
Rossum, E.S.A. van
Ruyter, D.J. de
Schinkel, A.
Stekelenburg, M.H.M. van
Tavecchio, G.L.
Terwel, J.
Valstar, J.G.
Veen, M. van der
Vetten, A.J. de
Wardekker, W.L.
Wilt, F.M. van der
Wolbert, L.S.

Socially Accountable Undergraduate Medical Education

Agtmael, M. van
Bakkum, C.
Brinkman, D.
Croiset, G.
de la Croix, Anne
Donker, E.
Elswijk, B. van
Grijpma, J.W.
Isik, U.
Jacobs, A.
Kusurkar, R. A.
Mak-van der Vossen, M.C.
Mulder, L.M.A.
Peerdeman, S.
Reumerman, M.
Stoffels, M.
Tichelaar, J.
Visser, C.L.F.
Vreugdenhil, C.J.
Wouters, A.

Affiliated member LEARN!

Graaf, G. de
Konijn, E.