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1. In general

1.1 Procedures followed

All research conducted at Dutch universities, university medical centers and NWO and Academy institutes, is subject to assessment regularly. Assessment has to be organized by the respective boards and takes place every six years. The research institute LEARN!, as part of the Vrije Universiteit Amsterdam (VUA), was externally evaluated for the first time. The primary aim of the assessment was to reveal the quality, relevance to society and viability of its research and give recommendations for improvement. The assessment was carried out by an external assessment committee. The external assessment concerned a) research that the research unit has conducted in the period between 2009 and 2014, and b) the research strategy that the unit intends to pursue in the future. The procedures for this evaluation are outlined in the Standard Evaluation Protocol (SEP) 2015-2021 and further specified by VUA in the 'Terms of reference'. Terms of Reference for the assessment were specified by the board of the institution. It determined the aggregate level of assessment and appointed the impartial, international assessment committee. The research unit subject to assessment provided information on the research that it has conducted and its strategy going forward, by carrying out a self-assessment and by providing additional documents. Based on the self-assessment, additional documents and interviews with representatives of the research institute, the assessment committee reached a judgment regarding the research performed by the research institute LEARN!. The judgment can be found in this assessment report.

1.2 Assessment committee

The assessment committee's overall profile should match the research unit's research and societal domains. Members of the assessment committee were selected by the board of the research institute LEARN!. The board of the research unit nominated a candidate chairperson and candidate members. Hereafter, the board of VUA was given the opportunity to accept or reject the proposal by the institute. With its approval, VUA stated that the proposed committee would be capable of adequately assessing the quality of the unit's work in that particular composition. A number of conditions were to be met in assembling this committee. The committee should: a) be familiar with recent trends and developments in the relevant research fields and be capable of assessing the research in its current international context; b) be capable of assessing the applicability of the research unit's research and its relevance to society; c) have a strategic understanding of the relevant research field; d) be capable of assessing the research unit's management; e) have a good knowledge of and experience working with the Dutch

research system, including the funding mechanisms; f) be capable of commenting on the PhD programs and the research integrity policy; g) be impartial and maintain confidentiality; h) have the assistance of an independent secretary who is not associated with the research unit's wider institution and who is experienced in assessment processes within the context of scientific research in the Netherlands. The members of the assessment committee signed a statement of impartiality and induction prior to the site visit.

The assessment committee consisted of the following members:

- Aryan van der Leij (retired from the University of Amsterdam), chairperson
- James Conroy (University of Glasgow)
- Roland Grabner (University of Graz)
- Joséphine Rutten (Amsterdam, high school St. Nicolaaslyceum)
- Eef Bisseling, secretary

A more detailed overview of the background of the members of the assessment committee can be found in Appendix I: Short CVs of the members of the assessment committee.

1.3 Research unit assessed.

LEARN! is an interfaculty research institute within VUA that organizes research on learning and education. Various departments within VUA and VU Medical Center Amsterdam cooperate within LEARN!. The disciplines of pedagogy, educational sciences, philosophy, psychology, neuroscience, public administration and communication science, as well as applied educational expertise take part in LEARN!. Institutionally, LEARN! is embedded within the Faculty of Behavioral and Movement Sciences (FGB), which also contains the largest contingent of researchers within LEARN!. The dean of this faculty is chair of LEARN!'s board by virtue of his office, which for the rest consists of representatives of the other faculties that participate in LEARN!. The management structure of LEARN! is described as 'lean'. Next to the board it has a scientific director responsible for the day-to-day running of the institute. Over the evaluation period, this director was, first, prof. dr. Jelle Jolles (2009-2012), then the duo of prof. dr. Lydia Krabbendam and prof. dr. Doret de Ruyter (2013-2015) served as interim directors – a period that lasted longer than intended due to difficulties in filling the vacancy of a chair in Educational Studies. Currently, prof. dr. Martijn Meeter is director. The director is aided by the program leaders, who meet with the director formally twice a year, and informally on an intermittent basis. Moreover, for most of the evaluation period an operational manager (dr. Erna van Hest) assisted the directors. After her

departure in 2014, this position has not been filled again; instead Steef Löwik was added to the LEARN! staff from 2013-2015 as a senior secretary and research policy officer.

LEARN! strategy and results are also discussed with an advisory board consisting of representatives of the educational field (at the level of primary and secondary education, and tertiary professional education), which was installed in 2013. The advisory board meets with the director (accompanied by the program leaders) at least once a year.

Five research programs were distinguished within LEARN! at the beginning of 2014, with somewhat different divisions made in earlier years:

- Brain & Learning (B&L). Program leader: Jelle Jolles
- Social Cognition (SC). Program leader: Lydia Krabbendam
- Meaningful Education in a Diverse Society (MEDS). Program leader: Doret de Ruyter
- Teachers and Teacher Education (TTE). Program leader: Jos Beishuizen
- Socially Accountable Medical Education (SAUME). Program leader: Rashmi Kusrkar

2. Assessment of the research unit

2.1 Description of the research unit's strategy and targets

LEARN!'s mission is to improve insight and knowledge concerning education, encompassing teaching as well as upbringing. LEARN! aims to expand 'scientific understanding, while remaining societal relevance and contributing to educational excellence'. Valorization of the research is a strong focus of LEARN!. Several disciplines are brought together in LEARN!'s multidisciplinary collaboration which is considered as 'unique'. LEARN! strives to unite all groups within VUA that investigate education. Besides the above mentioned disciplines, research groups in medical education, theology and social sciences have joined LEARN! since 2013. In order to fulfill LEARN!'s mission, the institute strives for three conditions. The first is integration of basic and applied research. The second is improvement of the quality and relevance of the research performed within LEARN!, trying to ensure a high quality of the conducted research and the development of new theoretical insights. The third is knowledge transfer, with special attention to partnering with the educational field. LEARN! desires insights to lead to new and improved applications and everyday practice in the home, at school, and in other environments. Moreover, it aims to disseminate its insights to both the international scientific audience and the audience of practitioners within the Netherlands.

The five research programs focus on innovative teaching environments, learning and teaching strategies, and on biological, psychosocial and cultural factors that promote 'talent development' across the lifespan. LEARN! endeavors its research topics to be in keeping with major issues in society, for example with research questions like 'how do we provide for the development and recognition of talent?' or 'what role does culture play in educational success?'.

The strategy of LEARN! focuses on fostering networking for its researchers, both internally and externally. Moreover, LEARN! tries to optimally support its researchers, for example by enabling them to make use of the good research facilities at VUA. LEARN! explicitly proclaims to not force research themes on its researchers, instead it lets research groups decide their own focus of research, leaving them largely autonomous. Furthermore, the institute also does not set output targets for its members (e.g., some fixed number of publications).

2.2 Assessment on three criteria

The assessment committee formed judgments on three assessment criteria:

1. research quality
2. relevance to society
3. viability (the extent to which the unit is equipped for the future).

This report firstly presents a qualitative judgment on the criteria (text), and secondly a quantitative judgment (in categories).

Qualitative assessment

Research quality

LEARN!'s research profile is internationally recognized, and it matches the profile of similar institutes elsewhere. In terms of output of publications and PhD theses, LEARN! has a large productivity. Although publication culture varied across the programs, reflecting disciplinary differences, all groups produced a significant number of publications. There are, however, factors that make assessing the research quality difficult. First, there are central concepts used in the description of the program which get little specification in the texts about the five parts of the program (Appendix A), in particular multidisciplinary, upbringing, excellence, talent development across lifespan, and innovative teaching environments, which make it difficult to connect the general aims to the output. With regard to research designs, although the main focus is on factors which influence development over time in the school

context, longitudinal and intervention studies seem to be underrepresented in LEARN!'s spectrum of studies. Second, the key publications selected by the research unit for the self-report are sound, solid studies and the articles are well written. Nevertheless, little of it seems to be cutting edge. Although it is clear that key publications can only partly represent core studies, the committee could not identify the motives for the current selection of publications. Thirdly, it would have been helpful when a connection had been made to content: which papers and authors contributed most to the central aims? How many times were these papers cited? What role did the key publications play? Fourth, the committee questions the selection of benchmark institutes for the self-assessment. The variety of profiles of the institutions, reflecting differences in research policies across nations, hampers a meaningful comparison. The committee does acknowledge the complexity of finding international institutions to compare to. In the recommendations, we will address this issue. Fifth, LEARN! was assessed as a single institute, due to the requirement of a minimum group size of 10 fte put forward in the Standard Evaluation Protocol. However, significant differences between the research programs exist, which relate to three research traditions (cognitive neuroscience, educational and philosophical science) and are reflected by the variety in the publication culture and contexts. In addition, the committee is aware of the fact that, for example, getting grants for philosophical research is much harder than getting grants for neuroscientific research. These differences at the level of research questions, methods and designs, quantity and quality of output and access to funding made it hard to assess LEARN! as a single institute and to decide upon one mark for the entire institute. As final remark about quality of research, the committee has its doubts about the selection of the proxies LEARN! uses for determining quality by providing data which mainly reflect quantity such as the M- and H-indexes. This of course is a perennial challenge in assessing quality and should therefore be supplemented by other proxies such as impact on the field or in practice or on policy etc. Despite these reservations the committee acknowledged that collaborators of LEARN! were making a significant scholarly contribution to the fields represented in the Institute.

Relevance to society

The committee is impressed by the effort of the institute to include professionals in the field. The collaboration of LEARN! with stakeholders in the field, at primary, secondary as well as higher education level, is very much appreciated. Also appreciated are the connections with universities of applied science and the academic working places. LEARN! seems to do a lot of outreach work and to be making substantial effort to cross the border between science and the practice field. Providing courses to teachers to support them is an admirable example of outreach work and the committee highly recommends it. With the collaborations, the academic workplaces and publications in professional

journals, LEARN! uses a broad spectrum of ways to ensure its relevance to society. This committee is pleased about this diversity and praises LEARN! for its many activities. In particular, the professionalization of the teachers in academic workplaces is highly appreciated. The committee considers the large amount of funding provided by the third money stream (national and local government, councils, school boards) as indicator of the considerable societal relevance of LEARN!.

This fine work could be further developed and the visibility of LEARN! could be further expanded. Committee members who are actively involved in the same (research) field had only a very sketchy idea of LEARN! before the assessment. In addition, it remains unclear for the committee how LEARN! is influencing policy makers. As an institute claiming to be an intermediate between research and practice, more effort could be put in bridging the gap between science and professional practice. There needs to be a more developed space for professionals and the public to interact with LEARN!. Moreover, the committee would like to have seen a broader selection of the key professional publications. With the exception of the publications of Pels, they were more popular than professional or policy oriented, not representative of the fact that LEARN! publishes over 40 publications in professional journals every year. Lastly, LEARN!'s focus of research is on primary and secondary education. Vocational and Higher education seem to be underrepresented in LEARN!'s research.

Viability

The committee agrees with the weaknesses and threats as identified in the SWOT analysis by the institute's self-assessment. The thorough-going nature of the analysis reflects the concern that the Institute has to improve its future performance. Despite the substantial efforts of collaborators, LEARN! continues to face substantial challenges. Several considerations have to be taken into account. First of all, the general aims and descriptions and outputs of the programs need to be harmonized and interconnected in a more consistent and direct manner. A strategy for renewal is needed, in particular with regard to (inter- and) multidisciplinary themes and projects, including the question of collaboration in targeted research, not only within but also between programs, which also involves the new collaborators from other faculties. As is noted in the report, there is a tendency to leave research groups largely autonomous in focus of research, and to allow for research in many 'divergent themes that are not all highly visible internationally', which may not add in equal measure to reaching the goals of the institute. Secondly, LEARN! needs a clear strategy for generating income in the future. The committee notices a pivotal decline in second and third stream money, especially in research grants. Over the years 2009/2010/2011, a large amount of money was available through the large grants of professors Jolles

and Krabbendam and many other smaller grants. From 2012 to 2014, however, the income stream dried up considerably. With the addition of increased teaching and management loads on senior staff, the concern for other income streams is further reinforced. Although new opportunities may come for the educational sciences to participate in projects, the competition to get funding is likely to increase in the near future. Thirdly, the small senior staff provides substantial challenges for both the staff involved and for the ability of LEARN to thrive and grow as has already been remarked in the Mid-term Assessment of the University Evaluation Committee VUA (2012) (Appendix H). The total amount of permanent staff fluctuated over the years but, ranging between 6.7 and 8.5, never met the requirement of a minimum of 10 fte put forward in SET. The fact that participants were allowed to join other research institutes (e.g. iBBA and EMGO+) may also have weakened the future position and led to a decrease in the amount of money that traditionally has been dedicated to pedagogical and educational research. Although the institute seems to be capable of generating temporary income, given the increased number of PhD and post-doc positions, the institute needs more senior staff members to guarantee continuity and robust growth. A junior staff member mentioned that there is a tendency to research things again; LEARN! lacks memory for what has already been researched. This memory can be found in senior staff members but if they are under continuous pressure they will struggle to optimize the value of institutional memory. Fourth, the multidisciplinary character of LEARN! should be clarified further to strengthen the position in the field of educational sciences. Across programs, there has been multidisciplinary in methodological sense (forms of research, designs and tools), however, multi- and interdisciplinarity in themes and collaborative projects seem to be lacking.

It should be noted that, considering the extraordinary circumstances in the past period, LEARN! has endured difficult years. VUA faced financial challenges and cut-backs were the order of the day. LEARN!'s multidisciplinary takes time to form a coherent institute. Governance, management and leadership skills may have suffered from the fact that there have been three changes in leadership in the period of the assessment. Despite the significant challenges the Institute faces, the committee would like to wholeheartedly commend the interim directors for their work in stabilizing LEARN! It may be expected that, under the new, more stable leadership regime, LEARN! will develop a vision of what multidisciplinary should look like as central to its future strategy. Moreover, the recent developments with crossovers to the faculty of theology and the faculty of social sciences (associate members), may strengthen LEARN!'s viability as it is relating to the original intentions of the institute, and, possibly, to its financial resources. In addition, the good interpersonal relations within LEARN! could also be regarded as a significant strength and an indication of viability.

In sum, the committee assesses the viability of LEARN! as ‘good’ (3) heading for ‘very good’ (2) if some of the recommendations are executed in the near future.

Quantitative assessment

The four possible categories are “excellent”, “very good”, “good” and “unsatisfactory”. For a more detailed description of the categories, see Appendix IV: Explanation of the categories utilized.

Research quality	Relevance to society	Viability
2	2	3 → 2

2.3 Quality and organization of PhD program and research integrity policy

2.3.1 PhD programs

PhDs within LEARN! partake in the PhD program of the Faculty of Behavioral and Movement Sciences or of the VU Medical Centre. PhD students at LEARN! are to become independent researchers at the end of their PhD. In order to be well functioning independent researchers, they need to develop knowledge, skills and connections in the field. Education and training is provided for by means of courses, daily education and guidance, and the organization of seminars. Every PhD student is obliged to formulate a 'professional development program' at the start of his/her PhD. This program consists of training courses comprising at least 30 ECTS. The availability of courses and the opportunity to choose courses from different research schools (country wide) are regarded as beneficial features of the PhD program. PhD students who have already taken relevant courses during a Research Master’s program can be exempted from components of the PhD training. There is, however, no Research Master focused on child development and education at the VUA, so the preparation and involvement in the projects of VU students applying for PhD positions may be less specific than desirable. PhD students draw up a training and supervision plan with their supervisors, in which the details of the supervision and the training track are recorded. This plan is based on the needs and guidance of the individual PhD student; therefore supervisors meet their students in a varying frequency. LEARN! as an institute has a restricted role in the PhD tracks. Day to day supervision as well as education and progress control are organized at different organizational levels. However, in developing connections in the field, LEARN! plays a significant role. In order to aid networking and facilitate interactions between PhD students, LEARN! provided a PhD student committee with the means to organize a yearly day for LEARN! PhD students.

The assessment committee was pleased to find out that PhD students seem to be very positive and enthusiastic about their experiences within the PhD program and feel well supported by their supervisors. PhD students meet frequently with their supervisors and experience internal as well as external support. The PhD students feel part of a research community, amongst other things supported by the biannual meeting of LEARN!'s staff. The Dutch network of PhD's and the self-organized PhD meetings are considered to contribute to the quality of the PhD program. It should however be noted that not all disciplines were represented in the self-organized meetings and colleagues might wish to consider how to remedy this. The meeting's voluntary character, perhaps inevitably, somewhat diminished the potential of the meetings to nurture cross-disciplinary work and methodological as well as substantive sophistication. Formal engagement with each other, in meetings or symposia, seems to be very restricted. Furthermore, career paths and prospects of employees in general and PhD students in particular, are limited. PhD students would benefit from more focused guidance with respect to their (scientific) career options and choices after completion of their dissertation.

2.3.2 Research integrity policy

LEARN! has established several mechanisms to assure research integrity. First of all, studies have to be considered by an ethical committee before they start. The Faculty of Behavioral and Movement Sciences and the VU Medical Centre both have an ethical committee in place. Secondly, LEARN! developed data storage policy and tools, to ascertain that practices are up to date with regard to integrity and privacy law. The Review committee did, however, note that the policy and tools are still in the implementation phase and would urge colleagues to bring this to completion. Thirdly, ethics training and statistics training are mandatory components of PhD training. An ethics course was developed by LEARN!'s program director D. de Ruyter, in which PhD students are confronted with essential dilemmas in research. Most of the PhD students follow this course; a small number of students choose a course offered by another graduate school. Fourthly, a manual of good research practices, developed by EMGO+ research institute, has been shared with LEARN! researchers. However, it is not specified how the manual was received by LEARN! staff and whether the manual was implemented. We consider much of this to represent sound practice and would advise colleagues to continue to develop the provision.

3. Recommendations

The assessment committee sees a lot of potential in LEARN!. LEARN!'s added value can mostly be found in its bringing to bear a multidisciplinary focus on educational issues. In addition, LEARN! provides a platform for networking. Meetings and discussions with people from different disciplines and exchanging ideas can generate proposals for new and innovative research. Not only can the internal network be seen as beneficial; using the research institute as a means to have access to the field is a major benefit. The network of schools that can be used for research can be shared. A more pragmatic advantage of LEARN! mentioned by staff members is that being part of a research institute is a prerequisite for applying for grants. In addition, researchers can learn from one another about different grant opportunities. Furthermore, presenting a multi- (or inter-)disciplinary viewpoint often makes a stronger case with regards to policy makers or grant institutions. It is clear that, despite some challenges along the way and some work yet to be done the interim directors have managed to maintain a stability that is important for future growth. Equally we were impressed by the drive, sensitivity and focus of the new director.

For future development, the assessment committee would like to articulate the following recommendations:

The first general recommendation is to develop a strong strategy for the future, in which the original intention of doing both fundamental and applied multidisciplinary research to improve educational practice is re-articulated and re-energized. According to the Mid-term Assessment of the University Evaluation Committee VUA (2012), pedagogical research has been the original focus of LEARN!, stimulated by a starting grant of the Central Board of VUA in 2009. It was recommended to either strengthen the disciplinary core, or develop into a broader interdisciplinary institute. LEARN! seems to have chosen for a variant of the second possibility, proclaiming 'multidisciplinarity' as one of its unique assets. However, it is not clear how multidisciplinary is defined and lived out in LEARN!. 'True' multidisciplinary themes and projects, crossing boundaries between the research traditions (neuroscience, educational and philosophical science), are still low in number. The research programs seem still quite autonomous along disciplinary lines, possibly stimulated by institute policy. The first signs of substantial change may be that the new Educational Neuroscience program combines brain, learning and social cognition research under the leadership of Lydia Krabbendam. In addition, the program Personalized Learning and Differentiated Teaching (led by Martijn Meeter), replacing the more

general oriented Teachers and Teacher Education, seems to share the learning component with the neuroscience program, providing opportunities for shared studies. An important methodological choice to investigate causal and dynamic issues may be to study basic processes in time perspective of development by intervention and longitudinal designs. To bridge the gap between the disciplinary traditions, it is worthwhile to strengthen the strategy and engagement by organizing conferences or focus groups with all the stakeholders on a regular basis; including seniors, young scholars, the advisory council and the work field (schools) for strategic thinking. The connections within LEARN! between the programs and with the practice field may be improved further by communication and commitment, using of the different stakeholders, including the enhancement of the working alliances. Continuation of involvement of other faculties, like with the new associate members, and the other part of the merged faculty of Behavioral and Movement Sciences, in particular movement or physical education, is essential for strengthening the multidisciplinary basis of the Institute. Bridging the gap between research and the practice field is already done by engaging the communities around LEARN!, to get and to give information. The role of fundamental and applied science can be enhanced by debates with teachers on the future of education, on human flourishing, the re-shaping and re-imagining of society, and social change. Some teachers have already successfully been given the opportunity to execute a PhD study on a part-time basis. Another aspect of the strategy may be to bring teachers and principals in as co-researchers in developing research questions. Although vocational and higher education have also been involved in the research questions, the emphasis is still on primary and secondary education. With SAUME as good example, it is clear that there are opportunities to expand the educational range.

The second general recommendation is to enhance viability by increasing the permanent staff in order to guarantee continuity in the research programs and fulfill the longer term aims of LEARN! Financial matters are not within the scope of the assessment committee, but it can be recommended that the first place to look for extra money is the Boards of the committed Faculties or the Central Board of VUA. Assuming that valorization, public and policy impact are important parts of the VUA research profile, LEARN! provides an excellent opportunity to accomplish that goal because 'evidence-based' scientific methods of instruction and organization have been recommended to the national government as the best way to improve and reform education (Commissie Dijsselbloem, 2008). A larger investment of first stream of money in an institute that is capable of sound (quasi-) experimental and field research would support that approach. It may be assumed that a larger number of senior members of LEARN! enhances the possibilities for successfully applying for grants and subsidies in the second and third stream and

enables to cope with the increased competition on a national and international level. In addition, it is worthwhile to establish another finance stream to increase the senior staff. LEARN! should consider the opportunities to internationalize, to offer postgraduate international masters programs, to organize summer schools or summer universities. Attracting international students and letting them come in contact with LEARN!'s research by university college or honors programs may offer an opportunity to expand the Institute's footprint. In particular students from outside the EU may provide extra funding.

The third general recommendation is to increase support mechanisms for developing career paths. Staff should be helped to develop their career plans, in academia as well as outside. This could be done by offering courses in entrepreneurship, organizational skills etc. The committee has seen that there has been some investment, but only within the research groups. LEARN! could stimulate its staff members to think about what, with the general goals of the institute in mind, they would like to be doing in for example five years from now, and support them to pursue that. Not only would this result in more content staff members; it would also increase LEARN!'s viability in enhanced commitment. Moreover, staff members could be more supported in preparing them to transfer their knowledge to practice.

The fourth general recommendation is to improve the assessment procedures and documents to be used in the assessment. First, it may be useful to add proxies for determining the quality of research. It is recommended to increase the number of key publications for the next assessment exercise, for example five per year instead of five over a period of six years. A similar recommendation concerns the professional publications which can improve the insight in societal relevance. Admittedly it gives the members of any future committee more work, but it adds to their knowledge of the variety of significant publications and researchers, including progress over time within and between research themes. Next, comparison with institutes in other countries has a limited value to inform colleagues on the efficacy of their approach. It would have been better to include Dutch institutes with similar goals at the universities of for example Nijmegen, Utrecht, Leiden, Maastricht and Amsterdam. They all aim to conduct internationally recognized research and contribute to the Dutch society. In general, their financial basis is comparable too. In particular for members of the assessment committee from abroad, the Dutch context of this kind of research will be clarified using these institutes as benchmark. Lastly, the documents which were available were sometimes too concise (e.g. with regard to the relation between goals and output of the programs and key publications in the self-assessment report), underspecified (such as the output data of some of the annual reports), or errative (such as the list of

PhD students and finished PhD's). A solid administrative structure is imperative for assessments. The director, Martijn Meeter, however, did a fine job in providing last minute information, when asked.

Concerning the PhD program, the committee would like to make recommendations as well. The PhD program, as it currently stands, is pretty standard and consumes considerable time. Developing a two-year Research Master program in the field of Pedagogics and Educational Sciences – including two research master theses in English which relate to program themes - may provide such a sound basis of students to enroll the PhD position that they already have finished most, if not all, of the obligatory courses. Professional development of PhD students is a bit under resourced. Colleagues should also consider developing support programs that enable PhD students to think about how to manage themselves in the educational world and to be prepared for the transfer of science to public. Further support should be given to ensuring the traction of research in public spaces. Embed student activities in the structure across the program. Stimulate (formal) engagement among PhD students, for example by symposia or obligatory meetings for PhD students across the programs.

Concerning research integrity, the committee recommends that LEARN! establishes and implements a set of clear ethical guidelines. Colleagues should consider creating a manual of good research practice and, if not being done already, create a space to reflect on what is being done within LEARN!.

4. Conclusion

In its relatively short existence, the Research Institute LEARN! has had a somewhat challenging history. Due to changes in leadership, governance, cohesion, management and leadership skills have not been developed optimally. However, despite the challenges, LEARN! seems to have been a very productive Institute. A significant volume of research has been produced and connections with the practice field have been well established. With the current stability in the form of the new director, LEARN! is afforded the opportunity to develop an explicit strategy for the future, in particular on what multidisciplinary should look like in the institute. When the institute develops a strong strategy and profiles itself, it can become nationally and internationally more strongly recognized for making a distinctive and leading contribution to the field of educational research. Moreover, it could have an important societal value. Addressing the threats and following the recommendations will offer good prospects for the future.

Appendices

- I. Short CVs of the members of the assessment committee.
- II. Site visit programme.
- III. Quantitative data on the research unit's composition and financing.
- IV. Explanation of the categories utilised

Appendix I: Short Curriculum Vitae of the committee members

- Aryan van der Leij
- James Conroy
- Roland Grabner
- Joséphine Rutten
- Eef Bisseling

Aryan van der Leij

Aryan van der Leij (°1946) started his career as a school psychologist. In 1977 he joined the Free University of Amsterdam and finished his PhD on severe reading disabilities in 1983. In 1984 he became Professor of Special Education, followed by a similar position at the University of Amsterdam in 1999. After his retirement in 2011, he continued contributing to research and lecturing. His research program has been focused on the characteristics, the origins and the ways to affect learning disabilities and social-emotional problems at school, including topics such as reading and dyslexia, arithmetic problems, basic cognitive processes involved in learning disabilities, comorbidity of learning disabilities, the relation of learning disabilities with brain functioning, and social-emotional problems such as internalizing and externalizing behavior at school. He has been vice-chairman of the Steering Group of the Dutch Dyslexia Program (DDP; 1998-2010): Kennis Verrijkt programma of NWO (National Research Council) 'Identifying the core features of developmental dyslexia: a multidisciplinary approach'. This program was a joint project of the Radboud University of Nijmegen, the University of Groningen and the University of Amsterdam that included a longitudinal study (children at risk of developing dyslexia in the period from 0-10 years), four prevention studies (5 year olds) and a genetic study. Data collection and publishing has continued after the formal end of the program in 2010. He has published and co-authored studies on reading disabilities, learning disabilities, ethnicity, teacher activities with regard to special educational needs (special education) and the effectivity of a variety of interventions.

At the national level he has been member of Advisory Council for Primary Education (1981-1989), of the Evaluation Committee of Primary Education (1991-1994), of the Steering Group of Inclusive Education (1995-1997), and chairman of two Committees of Preschool and Early School Education (1995-1999).

He has been Dean of the Faculty of Psychology and Pedagogics of the Free University (1991-1993) and Head of the Department of Pedagogics and Educational Sciences at the University of Amsterdam (2001-2010).

Professor James Conroy is the Vice-Principal (Internationalisation) at the University of Glasgow. He is responsible for the University's international strategy and engagement with its partners. He is also Professor of Religious and Philosophical Education and previously held the positions of Dean for European Engagement, of Dean of the Faculty of Education, Head of Graduate School and Head of the Department of Religious Education. He holds degrees from the Universities of London (IoE), Lancaster and VU Amsterdam, where he obtained his PhD under the supervision of Prof. Ben Spiecker.

He has held visiting positions at Warsaw (EU Modern Universities Professor), Federal University of Rio Grande do Sul (Brazil) Fordham University, Australian Catholic University and the Department of Education at the University of Oxford.

He has served on a the Boards of a number of Academic and Governments bodies including Learning and Teaching Scotland and the British educational Research Association. A past President of the Association for Moral Education, he is currently Chair of the Philosophy of Education Society of Great Britain. He is also Chair of the Journal of Moral Education Trust. In 2011 he was elected as a Fellow of the Academy of Social Sciences. With 3 monographs and c.100 papers and essays, his most recent monograph was a prize winner in the 2014 Society for Education Studies annual book prize. He was elected a Fellow of the Academy of Social Sciences in 2012. His scholarly interests are in liberalism, religion and education as well as epistemology in education.

Roland H. Grabner (°1975) is a full professor of Educational Neuroscience at the Department of Psychology at the University of Graz, Austria. He received his diploma in Psychology in 2002 and obtained his Doctor of Science (Sc.D.) in 2005 from the Faculty of Natural Sciences of the University of Graz, Austria. From 2007 to 2012 he was researcher and lecturer (full-time) at the Institute for Behavioral Sciences at the ETH Zurich, Switzerland, where he received his habilitation (venia legend) in Psychology in 2012. From 2012 to 2014, Roland H. Grabner was full professor of educational psychology

at the University of Göttingen, Germany. His main research interests lie in the neuro-cognitive mechanisms of individual differences in mathematical abilities and successful mathematics learning. His research is published in highly-ranked ISI journals such as Human Brain Mapping, Neuroimage, or Journal of Educational Psychology. He is associate editor of “Mind, Brain, and Education”, the journal of the International Mind, Brain and Education Society (IMBES), and of the “Fields Mathematics Education Journal”. In addition, he is member of the Scientific Board of the “Zeitschrift for Pädagogische Psychologie”. His peer-reviewing activity covers high-impact journals such as “Science” or “Proceedings of the National Academy of Sciences USA”. Together with Nienke van Atteveldt, he is coordinator of the EARLI Special Interest Group on Neuroscience and Education. He supervises 6 doctoral students and 2 post-docs. His teaching includes courses in psychology (focusing on educational neuroscience and math learning) and teacher education (focusing on neuro-cognitive mechanisms of learning and individual ability differences).

Joséphine Rutten (°1957) is executive of a group of secondary schools in Amsterdam (Stichting Voortgezet Onderwijs Amsterdam Zuid). Having played her role as student, teacher, manager, principal and executive, she has gained a broad experience in the educational field. She received her master degree in Classic Philology in 1985 at the University of Amsterdam.

For over 15 years she has fulfilled several managerial functions at the Hogeschool van Amsterdam, university of applied science. Since 2009, she works as principal and executive in the field of secondary education. In these functions, she has been cooperating closely with the four Amsterdam institutes for teacher education. She is an experienced member of audit committees.

The experience of **Eef Bisseling** (°1987) with assisting and supporting positions can be found in her work as employee of the educational office at the Faculty of Psychology and Education at the Vrije Universiteit Amsterdam (VUA). In this position, she assisted policy makers and she was responsible for the educational evaluation procedure of the Faculty. Administrative tasks and writing reports formed the core business of this work. At this moment, she is about to finish her Master's in Psychology as well as International Public Health, and no longer works for VUA.

Appendix II: Program of the site visit

Monday June 27

- 10.00 LEARN! director will meet you at the entrance of v.d. Boechorststraat 13
- 10.00-13.00 Private meeting of committee to discuss visit
- 13.00-13.45 Lunch with current and previous director
Martijn Meeter: director LEARN! since 2015
Doret de Ruyter: interim co-director LEARN! 2013-2015
Lydia Krabbendam: interim co-director LEARN! 2013-2015
- 14.00-14.45 Meeting with PhD students
Marina Illias (Educational neuroscience, successor to Social Cognition & Brain & Learning)
Sylvester Draaijer (Personalised learning, successor to Teaching & teacher educ)
Lynne Wolbert (Meaningful education)
Karin vander Heyden (Educational neuroscience)
Marianne Mak (Socially accountable medical education)
- 15.00-15.45 Meeting with junior staff
Anders Schinkel (assist prof, Meaningful education)
Marlieke van Kesteren (postdoc, Educational neuroscience)
Nikki Lee (postdoc, Educational neuroscience)
Anne de la Croix (assist prof, Personalised learning)
Didi Griffioen (former postdoc, Personalised learning)
Claudia van Kruistum (assist prof, Meaningful education)
- 16.00-16.45 Meeting with senior staff
Agnes Willemen (assoc prof, Educational neuroscience)
Mariette Huizinga (assoc prof, Educational neuroscience)
Gerdien Bertram-Troost (assoc prof, Meaningful education)
Jos Beishuizen (prof emer, Personalised learning)
- 16.45-17.30 Private meeting of committee
- 19.00-. . . Dinner – Morlang, Keizersgracht 451 (stop keizersgracht of streetcar 1, 2 , or 5).

Tuesday June 28

- 9.15-10.00 Meeting with LEARN! board
Peter Beek (chair, dean of Fac of Behav & Movement Sciences)
Carlo Schuengel (vice- dean of Fac of Behav & Movement Sciences)
- 10.00-10.45 Meeting with members of advisory council
Dolf van Veen (Univ of Applied Sciences InHolland)
Ivo van Hilvoorde (Univ of Applied Sciences InHolland)
Rien Spies (school board for primary education Agora)
- 11.00-11.30 Tour of lab facilities
Stephanie Wassenburg (former PhD student Brain & Learning, defended May 2016)
- 11.30-12.15 Meeting with group leaders.
Doret de Ruyter (Meaningful education)
Lydia Krabbendam (Educational Neuroscience)
Rashmi Kusurkar (Socially accountable medical education)
Chris van Klaveren (deputy leader, Personalised learning)
- 12.15-15.00 Lunch and private meeting of committee
- 15.00-15.45 Presentation of main findings to director and group leaders
- 16.00 Finish

Appendix III: Quantitative data on the research unit's composition and financing

Table 1: Composition of the staff of LEARN!, in full-time equivalents (fte), with for 2014 also the number of researchers involved given (Table D3a SEP).

Research staff	2009	2010	2011	2012	2013	2014
Scientific staff (1)	8.5 fte	6.7 fte	6.9 fte	7.5 fte	8.1 fte	33 / 8.2 fte
Postdoc (2)	1.6 fte	1.8 fte	2.6 fte	8.9 fte	11.8 fte	29 / 11.7fte
PhD-students (3)	13.5 fte	13.4 fte	17.9 fte	14.6 fte	14.2 fte	19 / 12.0 fte
Total research staff	23.6 fte	21.9 fte	24.4 fte	31.0 fte	34.1 fte	81 / 31.9 fte

Note 1: Comparable with WOPI-categories HGL, UHD and 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)

Table 2: Financing structure of LEARN! (Table D3c SEP)

Funding	2009	2010	2011	2012	2013	2014
Direct Funding	12.55 fte / 53%	8.56 fte / 39%	9.66 fte/ 40%	8.48 fte / 27%	15.6 fte / 44 %	12.70 fte/ 40 %
Research Grants	7.98 fte / 34%	8.82 fte / 40%	9.8 fte/ 40%	15.50 fte/50 %	14.06 fte/ 41%	14.34 fte/ 45%
Contract Research	3.1 fte / 13%	4.53 fte / 21%	4.93 fte/ 20%	7 fte/ 23%	4.90 fte/ 15%	4.90 fte / 15 %
Total Funding	23.63 fte	21.91 fte	24.39 fte	30.98 fte	34.11 fte	31.94 fte

Appendix IV: Explanation of the SEP categories utilized

Category	Meaning	Research quality	Relevance to society	Viability
1	World leading/ Excellent	The research unit has been shown to be one of the few most influential research groups in the world in its particular field.	The research unit makes an outstanding contribution to society.	The research unit is excellently equipped for the future.
2	Very good	The research unit conducts very good, internationally recognized research.	The research unit makes a very good contribution to society.	The research unit is very well equipped for the future.
3	Good	The research unit conducts good research.	The research unit makes a good contribution to society.	The research unit makes responsible strategic decisions and is therefore well equipped for the future.
4	Unsatisfactory	The research unit does not achieve satisfactory results in its field.	The research unit does not make a satisfactory contribution to society.	The research unit is not adequately equipped for the future.