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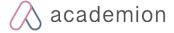
1. Foreword by the committee chair

This report embodies the findings and recommendations of an international peer review of the Learn! Institute of Vrije Universiteit Amsterdam, undertaken on November 21st 2022. The assessment is based on a self-evaluation report provided by Learn!, additional information sent on request and a one-day site visit. This review report is both prospective and retrospective. The review also resulted in several specific recommendations.

As chair I wish to thank my fellow evaluators Prof. Ruben Fukkink, Prof. David Gijbels, Prof. Tamara van Gog, Prof. Thomas Hatch, and Ms. Megawanti for their expert and sincere contributions to the discussions and findings. Our collaborative work was academically rewarding as well as socially agreeable. I also wish to thank Ms. Fiona Schouten of Academion for her excellent support before, during and after the site visit.

We thank all members of Learn! staff, PhD candidates and board for their open and constructive participation in the review process.

We hope this report to be the beginning of another successful period of very good research and PhD education in Learn!.

January, 2023
Prof. Wilfried Admiraal
Chair International Peer Review Committee Learn!

2. Procedure

2.1 Scope of the review

Vrije Universiteit (VU) Amsterdam asked a review committee of external peers to perform a review of the research conducted at LEARN! over the period 2016-2021.

In accordance with the Strategy Evaluation Protocol 2021-2027 (SEP) for research reviews in the Netherlands, the committee was requested to carry out the assessment according to a number of guidelines. The assessment was to include a backward-looking and a forward-looking component. The committee was asked to judge the performance of the unit on the main assessment criteria specified in the SEP and to offer its written conclusions as well as recommendations based on considerations and arguments. The main assessment criteria are:

- Research Quality;
- Societal Relevance;
- Viability of the Unit.

During the evaluation of these criteria, the committee was asked to incorporate four specific aspects relating to how the unit organises and actually performs its research, its composition in terms of leadership and personnel, and how the unit is run on a daily basis. These aspects are:

- Open Science;
- PhD Policy and Training;
- Academic Culture;
- Human Resources Policy.

For more information on the criteria and categories of the Strategy Evaluation Protocol 2021-2027, see Appendix 1.

Furthermore, VU Amsterdam specifically asked the committee to consider the following Terms of Reference:

1. What does the committee see as LEARN!'s added value, both within the VU as well as externally (societal and academic value)?
2. How can LEARN! improve its regional, national and international profile?
3. How can LEARN! improve synergies and cross-fertilization across its five programmes, given the network and funding structure of the institute?

2.2 Composition of the committee

The composition of the committee was as follows:
- Prof. dr. Wilfried Admiraal, Oslo Metropolitan University (chair);
- Prof. Thomas Hatch, Columbia University;
- Prof. dr. Tamara van Gog, Utrecht University;
- Prof. dr. David Gijbels, University of Antwerp;
- Prof dr. Ruben Fukkink, University of Amsterdam & Amsterdam University of Applied Sciences;

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- Megawanti MSc, Wageningen University (PhD member).

The committee was supported by dr. Fiona Schouten, who acted as secretary on behalf of Academion.

2.3 Independence

All members of the committee signed a statement of impartiality to guarantee an unbiased and independent assessment of the quality of the research performed by the network institute LEARN!. Personal or professional relationships between committee members and the research unit under review were reported and discussed at the start of the site visit amongst the committee members. The committee concluded that no specific risk in terms of bias or undue influence existed and that all members were sufficiently independent.

2.4 Data provided to the committee

The committee received the self-evaluation report from the unit under review, including all the information required by the SEP.

The committee also received the following documents:
- The Terms of Reference;
- The SEP 2021-2027;
- An overview of 10 notable publications (2 per programme);
- Additional data on PhD candidates.

2.5 Procedures followed by the committee

The committee proceeded according to the SEP 2021-2027. Prior to the first meeting, all committee members independently formulated a preliminary evaluation of the programmes under review based on the written information that was provided before the site visit. In its first online meeting, on 10 November 2022, the committee was briefed by Academion about research reviews according to the SEP 2021-2027. It discussed the preliminary evaluations and identified questions to be raised during the site visit. It agreed upon procedural matters and aspects of the review.

The site visit took place on 21 November 2022 (see the schedule in Appendix 2). One of the committee members, David Gijbels, was not able to attend, but did provide input based on the documentation. After the interviews the committee discussed its findings and comments in order to allow the chair to present the preliminary findings at the end of the site visit and to provide the secretary with argumentation to draft a first version of the review report. The final review is based on both the documentation provided by LEARN! and the information gathered during the interviews with management and representatives of the research unit during the site visit.

The draft report by the committee and secretary was presented to LEARN! for factual corrections and comments. In close consultation with the chair and other committee members, the comments received were reviewed to draft the final report. The final report was presented to the Board of VU Amsterdam and to the management of the research unit.

3. Research review of LEARN!

3.1 Introduction

LEARN! is an interdisciplinary research institute of the Vrije Universiteit (VU) Amsterdam. It is hosted by the Faculty of Behavioural and Movement Sciences (FGB), and its staff belongs to either this faculty or the medical school of the Amsterdam University Medical Centre. LEARN! started out with a focus on improving insight and knowledge concerning education in the broadest sense of the word. In 2016, it hosted three research programmes: Educational Neuroscience, Learning Sciences, and Motivation for Lifelong Learning. Since the arrival of its new director in 2019, this focus was expanded to studying learning and development, including their institutional and societal contexts. Two further programmes were added to LEARN!: Child Rearing and Educational Governance, Identity and Diversity. LEARN! staff has shown an upward trend because of this (see Appendix 3). It currently has 94 research staff members (40,96 FTE), 8 visiting fellows, and 2 support staff members.

3.2 Aims, Strategy and Management

Aims
LEARN!'s aim is to become the leading research institute and go-to point locally, nationally, and internationally for research on learning and development as well as the institutional and societal contexts in which people learn and develop. The institute is dedicated to supporting and ensuring high quality and integrity of work throughout its five research programmes (see above). The joint work of these five programmes spans the micro-, meso-, and macro-contexts of learning (individual learning and development, educational settings and organisations, and governance of learning). Together, these three levels form an ecosystem of learning. LEARN! research studies all aspects of this ecosystem.

The mission has been translated into two strategic objectives for 2020-2023:

> Objective 1: Becoming the leading research institute and go-to point, both locally (Amsterdam area), nationally (the Netherlands) and internationally, for research on learning and development and the (institutional and societal) context in which people learn and develop.

> Objective 2: High quality and integrity of our work across five programmes, addressing pressing societal issues related to education and where we actively engage with stakeholders and academic colleagues locally, nationally and internationally in designing and implementing our research (quality, integrity and societal relevance).

The committee studied LEARN!'s mission and objectives, and discussed them with the institute's management and staff during the site visit. It learned that the distinction between the micro-, meso-, and macro-levels of learning is helpful within the various research groups. This distinction allows LEARN! researchers to determine the relations between the various types of research in the institute, and to map out where they stand within the ecosystem of LEARN!. The various research programmes address one or more of these levels. For example, the Learning Sciences programme mainly looks into individual differences in learning (micro-level), while the Educational Governance, Identity and Diversity programme focuses mainly on the macro- and meso-contexts in looking at the position, coordination, and effectiveness of schools in wider society. The committee is positive about the ecosystem of learning as a way of mapping out the LEARN! domain and understanding how LEARN! research fits together.

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The committee finds that LEARN!'s aims and objectives have been formulated broadly and that the institute would benefit from more specific and concrete objectives whose achievement can be better planned and measured. In particular, LEARN! should make clearer what it means by aiming at being a 'leading' research institute. The committee gathered from the documentation and the conversations during the site visit that this does not refer to becoming the global leader in educational academic research per se. Rather, LEARN! tends towards high-quality research on learning and development with clear societal relevance, focusing on collaboration between disciplines and with academic and non-academic stakeholders. This unique character is well-expressed in the strategic objectives through their focus on stakeholder involvement as well as societal and institutional contexts. The committee feels that this emphasis on collaborative educational, societally relevant research forms a strong brand which LEARN! should be proud to make explicit. It therefore advises to clarify LEARN!'s aims in this respect.

Local, national, and international profile and ambitions
The committee points out that the ambition to operate simultaneously on the local, national, and international levels is difficult to achieve. The committee learned during the site visit that LEARN!'s local and national profile is already quite well established. The institute has a clear image or 'brand name' through its focus on education research, making it a natural party for partners in this field. LEARN! researchers told the committee that the reputation of LEARN! opens doors for them and helps them establish working relationships with prominent local and national partners, such as the City of Amsterdam and the Ministry of Education, Culture and Science. Internationally, the programme leaders and some staff members are well-known and the institute is building its reputation through forming connections and acting as a collaboration partner, for instance through working with ICSEI (The International Conference for School Effectiveness), UNICEF and UNESCO.

According to the committee, LEARN! should not let go of its ambitions on each of the three levels. However, the institute could distinguish between the short, middle, and long terms in order to achieve a realistic timeframe. The committee recommends focusing on the local and national dimensions on the shorter term, since a good local and national reputation based on educational expertise can enhance LEARN!'s international standing and trigger further development here. Serving as the national expert on education contributes to the institute's international reputation and publishing internationally on the research performed nationally contributes to this flywheel effect. International ambitions in terms of applying for EU funding could be pursued, but moved to the middle to long term.

Strategy
The institute aims to meet its two objectives through the following seven strategies:

> S1. Invest in a LEARN! community and informal knowledge exchange
> S2. Optimise academic culture, research integrity and quality
> S3. Lead large consortia and improve successful acquisition
> S4. Mentor and further develop professional(s) and talent
> S5. Establish quality assurance and external review to improve our work
> S6. Optimise collaboration with LEARN! Academy (the VU teaching and learning centre)
> S7. Engage externally and practice open science

The committee appreciates these strategies, which it finds well worth striving for and which match the aims and objectives. Regarding S3, it points out that collaborating in (and not leading) large consortia is less

labour-intensive and yet a good way of gaining impact and extending LEARN!'s network and visibility in the research community.

The committee recommends adding precision and clarity to the strategic aims in line with the clarification of LEARN!'s profile and aims. Over the past period, the institute has grown and added two research programmes to the three original ones. This added strength in numbers also brings with it a need to decide where LEARN!'s priorities should lie in the upcoming years. The committee encourages LEARN! to choose a number of strategic areas (preferably involving multiple programmes) to grow in. Diversity or early intervention could be such areas, as was brought up in discussions between the LEARN! management and the committee during the site visit. By adding such focus, LEARN! can also make strategic decisions on what not to include.

Another strategy the committee would like to propose to strengthen LEARN! as a go-to point for educational collaborative research is to create more external visibility. According to the committee, LEARN! has a number of clear strengths, such as its clearly demarcated profile on learning and development, the societal relevance of its research, and its contributions to open science (see below). These strengths should be highlighted in external as well as internal communication.

Management and governance
LEARN! is a network institute hosted by the Faculty of Behavioural and Movement Sciences (FGB), which receives an annual lump sum to organise it. This funding is spent on 0,2 FTE for the director and additional support staff: a management assistant (0,2 FTE) and a student assistant (0,4 FTE). LEARN! is managed by a board which includes the deans of the two contributing faculties and the director of the institute. The board is responsible for both the overarching strategy and the external evaluation of the institute. Overall management is delegated to the director. She leads the institute with the programme leaders, each of whom is responsible for their own programme. The director herself is also a programme leader. The programmes have department heads who act as line managers; sometimes they overlap with programme leaders.

The committee appreciates that the way LEARN! is embedded in the university provides it with the necessary infrastructure (e.g. data management facilities, PhD training, administration). Its interfaculty position determines its added value within VU University: LEARN! functions as a bridge between faculties and disciplines and allows its members to collaborate beyond their own faculties. At the same time, the management and governance structure poses challenges to the institute that impact its viability. LEARN! does not hire its own staff members and has a limited number (less than 1 FTE) of dedicated management and support staff. This impacts its ability to shape and execute its strategy and aims. This matter will be further discussed under 3.5, Viability.

3.3 Research Quality

Output and marks of recognition
The committee is positive on LEARN! research output, which is extensive, particularly considering the number of staff associated with the institute. The output varies from books and book chapters to PhD theses, conference papers, peer reviewed journal articles and professional publications, and demonstrates that LEARN! research is vibrant and that the institute is actively and consistently contributing to the field, as appendix 3 shows. LEARN! research output clearly displays the variety of research topics and approaches that characterises the institute, with education, learning and development as common denominators. The committee received an overview of 2 significant publications per research programme and found that these

display LEARN!'s breadth, while still being recognisable as LEARN! publications through learning and child development-related subject matter.

The committee finds that LEARN!'s research is of an overall high quality and particularly appreciates the societal relevance of LEARN! research as part of this quality. The selected publications the committee received consisted both of research published in prominent peer-reviewed journals, and of articles with clear societal significance (or in many cases, both). A similar combination of high research quality and direct relevance to societal demands and issues is evident in LEARN!'s contribution to the UNESCO International Science and Evidence Based Education (ISEE) Assessment Report, which provides a systematic assessment of the existing knowledge on education and learning worldwide and provides policy-relevant recommendations.

Among the marks of recognition concerning LEARN! research are project-based as well as personal grants for its members, from parties such as ZonMW, the European Committee, NWO, and other funding agencies. Here, too, the committee is pleased to see that high-level research and societal relevance usually go hand in hand. LEARN! researchers also act as board members in a large number of national and international boards and bodies, varying from the Association for Psychological Science and the International Dyslexia Association to the NJi (Dutch Youth Institute) and the Onderwijsraad (National Education Council). Furthermore, LEARN! participates in national and international projects and consortia, through grants from Horizon2020, the National Science Agenda, and the Dutch Growth Fund. A number of its researchers have been awarded such distinctions as the J.C. Ruigrok Award (Royal Academy of Sciences) for outstanding research in the social sciences and humanities, and the Ammodo Science Award for ground-breaking research in educational neuroscience.

Added value and synergy across programmes
The interdisciplinary setup of LEARN! is considered a key strength by its members. On various occasions during the site visit, the committee learnt about research projects, publications, and opportunities that could not have come about without the interfaculty institute, such as a study on motivation and achievement by Learning Sciences and Educational Neuroscience. Nevertheless, the committee noticed that such cooperation is mainly driven by individual researchers themselves rather than programmatic decisions. It learned that LEARN!'s research culture is informal, and that the institute's main role is in creating opportunities for researchers to meet up and freely explore possibilities of collaboration and inspiration.

The committee appreciates the stimulating atmosphere and the networking role LEARN! has in enabling research to take shape across faculty and programme boundaries. However, it feels that the added value of LEARN! would increase further if the collaboration between its five programmes would take place in a more purposeful, systematic fashion. In order to achieve this, focused strategic choices (see above under 'Strategy') could serve as the starting point for successful collaborations between the programmes. The research initiative around the COVID 19-pandemic has shown that a more strategic approach to collaboration can be highly successful. During the pandemic, some of the LEARN! research programmes worked together on investigating the effectiveness of educational measures such as catch-up programmes to repair learning loss in the wake of school closures, and on supporting schools in making evidence-informed decisions. LEARN! collaborated with the Dutch Ministry of Education and other relevant societal stakeholders, but also participated in international activities such as a new 'crisis response to education' network. The committee applauds this project, since it demonstrates how cross-programme interdisciplinary research in LEARN! can span the full cycle, moving between real-world needs and research practice.

Academic culture

The research quality of LEARN! is enhanced and supported by its academic culture. As a network institute operating beyond and between faculties, LEARN! has a naturally open, informal, and welcoming academic culture, inviting researchers from varying disciplines and bringing them together through its events and activities. LEARN!'s researchers and PhD candidatespraised the clear communication they received on all things related to the institute, which succeeds in drawing participants to the events, discussions, and seminars it organises. The annual conference serves as a meeting ground for national and international scholars in the field, and allows PhD candidatesand junior academics to present their research. LEARN! members are offered multiple perspectives and a safe space for cross-disciplinary encounters which is a valuable addition to their in-faculty research groups.

LEARN!'s open and transparent academic culture also extends to its policy on research integrity. Particularly when it comes to the storage, use, and sharing of research data, the institute does not only follow faculty rules and regulations on these matters but sets standards in the international field. The committee was pleased with the example given by the Child Rearing programme in the presentation during the site visit. This programme is working on attachment research, and this field is notable for dealing with highly sensitive individual data. In international collaborations, therefore, this requires careful coordination and collaboration. Child Rearing has initiated such coordination in setting up a global infrastructure around sharing such sensitive data. The committee is impressed with this effort, which contributes both to LEARN!'s visibility and improves the data handling of LEARN! and its partners. According to the committee, LEARN! can and should be more outspoken when it comes to drawing attention to examples such as these, where LEARN! is on the forefront of academic developments.

The committee feels LEARN!'s academic culture could be further enhanced by increasing diversity. Since LEARN! has no say in the faculties' hiring policies, it should attempt doing so in different ways, for instance through actively hosting events around scholars from varied backgrounds. It could also make sure to host events in English where possible, even when the research theme itself is Dutch practice-oriented and/or Dutch-speaking stakeholders are involved. This would allow LEARN!'s international members to contribute more actively to its meet-ups, an opportunity they now feel is lacking and which was highlighted as a point of improvement especially in the PhD interview.

3.4 Societal Relevance

Output

According to the committee, research in VU LEARN! is societally highly relevant. The examples on COVID-19 and the UNESCO project mentioned above form strong examples of this relevance. LEARN! researchers collaborate with various stakeholders on the micro, meso, and macro levels, such as teachers and parents, schools and school boards, the Inspectorate of Education, and the Ministry of Education, sharing their results and insights and impacting policy and practice.

LEARN! actively shares its research output with societal groups through monthly newsletters, presence on social media, and organisation of events. The institute organises an annual conference and monthly research seminars that are open to the public and are published on YouTube. Larger projects have their own dedicated websites which contain accessible factsheets and policy briefs. LEARN! researchers are also actively present in the media and participate in societal committees and practitioner meetings. The committee applauds LEARN! research and output for its relevance to society.

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Open science

The various research programmes in LEARN! collaborate with societal stakeholders each in their own ways and depending on their research topics. A programme such as Educational Neuroscience will be working with individual stakeholders, combining lab work where possible with real-life learning situations; whereas the Educational Governance programme works with partners such as the Ministry and the Inspectorate. This variety in ways of achieving societal relevance and connecting to social partners is inspiring, and LEARN!'s researchers can learn from each other here. LEARN! stimulates open access publication, which the committee appreciates.

The Child Rearing research programme has a formal research-practice partnership or 'academic workshop' called Viveon in place with care facility 's Heeren Loo. This allows for long-term collaboration in research. In addition, LEARN! has several informal long-term collaborations, for instance with the Dutch Inspectorate of Education and EducationLab. This partnership includes projects on inspection as well as projects using the Inspectorate's data. LEARN! also invests in international research-practice partnerships, for instance with UNICEF and the OECD.

Through its unique combination of academic strength and high societal relevance, LEARN! can serve as an example for VU research at large in achieving new and meaningful full-cycle research that connects to needs and questions in society at large. The academic workshop format is a great example of a fruitful collaboration and of open science with stakeholder participation, and the committee would like to see this implemented elsewhere as well. In particular, the Learning Sciences programme could benefit from such a partnership to be able to work permanently with schools and teachers.

In order to further develop this, the committee recommends formulating a clear strategy around societal partnerships and collaborations, including longer-term collaboration in academic workshops. This strategy should formulate how to sustain LEARN!'s current societal impact and promote it as a key distinguishing element of LEARN!. The committee also strongly advises creating extra budget and hiring more personnel for these important strategic collaborations. LEARN! researchers are currently burdened with the contracts and formalities surrounding stakeholder participation and should be supported in this, for instance through a dedicated partnership officer.

3.5 Viability

Governance and management structure

The committee considers LEARN! to be very well positioned for the future. Its research has societal relevance and impact on various levels: that of individuals, that of schools and organisations, and that of governance and policy. LEARN! ties in with urgent needs and current developments in society, and provides its partners with solid scientific insights. It has strong ties to societal partners and is looking to expand and improve these, which the committee supports. According to the committee, LEARN! can be considered leading within the university in how it promotes open science and academic culture. Through its research, it boosts the achievement of faculty policies on these matters.

As mentioned before, the committee feels that LEARN!'s position would be improved by formulating a clearer strategy through deciding which research themes to invest in specifically. This strategy should also include the sustenance and promotion of societal partnerships. However, the way in which LEARN! is embedded in the VU, as a network institute that spans across faculties, provides it with significant challenges in achieving such strategic aims. As a network institute, LEARN! is organised informally. It selects and invites

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its members from among the staff hired by the contributing faculties, based on the content of their work, and there is no formal process for becoming a member. The institute does not control the hiring of staff members; the time they dedicate to LEARN! is voluntary and added onto their work within the faculty where they have been primarily embedded. LEARN!'s governance and management structure is also quite limited: with a team consisting of a director (0,2 FTE), and 0,6 FTE support staff, its operational capabilities are necessarily limited.

The committee applauds the fact that LEARN! has managed to become the vital and growing institute that it is today, providing clear added value to its researchers, in spite of the constraints it has to navigate. LEARN! members appreciate the informality of the network institute, which provides them with research and meeting opportunities without laying claims. For researchers, LEARN! is a fertile meeting ground that they highly appreciate. The downside is that LEARN! depends on active individuals taking the forefront and deciding to invest time here in spite of demands placed on them by the faculties that hire them. It has no back-up plan for when these individuals leave or turn their attention elsewhere.

The committee therefore advises the faculty management to recognise LEARN!'s importance as a research institute whose strengths include stakeholder collaboration and societal impact of research. This recognition should take the shape of providing LEARN! with additional support, time, and resources in order to allow the institute to realise focused growth. The committee points out that LEARN!'s success hinges on individuals, including the director, as was demonstrated in 2019. In that year, a temporary leadership gap was solved by the arrival of the current director, leading to instant increased activity. Recognition through extra resources will therefore have a positive impact on viability.

As mentioned before, LEARN!'s development should not proceed to quickly. Rather, focused development using clear strategic targets allows LEARN! to remain small enough to retain its well-appreciated informal culture. The committee learned from staff and PhD candidatesthat the relatively small size that LEARN! currently has is beneficial to its welcoming academic culture. This warmth and informality should therefore be protected in order to retain the network function of the institute.

HR and PhD policy
Due to the network structure, LEARN! is not involved in the hiring, assessment, and training of its staff and PhD members. These processes and responsibilities lie with the faculties that employ the various staff members. The committee learned from its interviews during the site visits that while this allows LEARN! to focus on its core tasks as a research network, it also provides the institute with challenges.

One of these challenges concerns the PhD community. The committee met with a group of active, enthusiastic, and engaged PhD candidates who organise and participate in many activities, focused either on LEARN! PhD candidates or on LEARN! members in a broader sense. LEARN! PhD candidates have united in a PhD community that participate in a series of informal lunches, workshops, outings, and the annual conference. The PhD candidates are happy with the stimulating and open research environment that LEARN! offers as a welcome addition to the environment in their faculties and research groups that tend to be more discipline-oriented. They receive help and some funding from LEARN! management to realise their activities. However, the PhD candidates did point out that their community depends on individuals willing to participate and that they worry about being followed up by equally enthusiastic candidates. Participating requires additional effort from external PhD candidates, who combine their PhD trajectory with work and other activities. The committee recommends creating a slightly more formalised system of recruiting active PhDs here (and with some overlap time for handing over the baton when they are nearly finished) and providing LEARN! with the means to compensate active members for their efforts (e.g. with grants for

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international conferences or data access), and provide other types of support to stimulate PhD members to become involved.

Another challenge is the fact that it is difficult for LEARN! to be involved in boosting and contributing to the PhD results of its junior members. The committee noticed that the length of a substantial number of PhD trajectories seems worrisome, which was acknowledged by the various delegations including the Faculty Board during the site visit. LEARN! does not have many tools to directly improve these university-wide issues, as PhD supervision is the responsibility of the faculty they belong to. The committee does advise LEARN! to start monitoring the success of their PhD candidates in order to have a clear overview of the difficulties or delays they suffer. It should not continue relying on the information received from the faculties, which is difficult to use due to different registration and monitoring systems. Rather, LEARN! should create a more formalised membership procedure that allows it to track and monitor its PhD candidates from the start of their trajectory. Once LEARN! has the data and an overview of its PhD candidates, it can decide whether it wants to act on this information and if so, how, or to use this information to ask/urge the Faculty Boards to take action.

4. Executive summary

4.1 Conclusion

The committee finds that LEARN! as a research institute has a clear identity: its research focus is on collaborative, societally relevant research on learning and development. Among its strengths are the societal relevance of its research, its open academic culture and its contributions to open science, most notably through a variety of stakeholder collaborations and transparent data management and storage for national and international partners. These strengths should be highlighted in external and internal communication.

The committee recommends clarifying LEARN!'s aims and objectives by pinpointing areas where it wants to be leading, and making explicit what it means by this term. It should also differentiate its goals on the local, national, and international levels, and provide each level with a clear timeline. The committee recommends focusing on being a local and national leader first and foremost. The successes in the local and national levels can then contribute to a faster development in the international level as well. LEARN! should also adapt its strategy by adding more focus concerning the research themes it wants to invest in and the way it intends to sustain and expand its societal collaborations.

The committee applauds LEARN! for its high output of societally relevant high-quality research and its contribution to the field of learning and development. It considers LEARN! is an exemplar when it comes to developing open science (and creating an open, multi-perspective, transparent, and welcoming academic culture). Its informal network structure is appealing to its members and allows them to meet, collaborate and share ideas. To foster inclusion, the committee advices to make meetings on local/national issues more accessible to international PhDs and staff members. LEARN!'s added value as a research institute would be further boosted if the collaboration between its five programmes would take place in a more purposeful, slightly systematic manner. In order to achieve this, strategic choices could serve as the starting point for successful collaborations along the lines of LEARN!'s successful COVID-19 research.

In order for LEARN! to remain viable, the committee recommends allocating more resources to facilitate long-lasting academic workshops and other societal partnerships, including support staff. Its structure and collaboration with the faculties should be strengthened and formalised. According to the committee, LEARN!

can be considered leading within the university in how it promotes open science and academic culture. Through its research, it boosts the achievement of faculty policies on these matters. The faculties should therefore strengthen LEARN! in its focused growth, taking care to retain its strong informal network function.

4.2 Recommendations

- Reformulate aims and strategy to pinpoint focus areas in research and societal collaboration. Include separate targets and timelines for the various levels (international, national, local).
- Support LEARN! as a whole by providing it with extra resources from the participating faculties. Appoint a policy officer dedicated to LEARN! stakeholder collaborations such as academic workshops and seminars.
- Improve collaboration between research programmes through more systematic steering and stimulation, for instance through shared grant writing sessions.
- Stimulate diversity and inclusion by hosting events with speakers and participants of diverse backgrounds, when possible in English.
- Start monitoring PhD success and progress of LEARN! PhDs.
- Compensate and stimulate PhD candidates and other members who are active and involved in LEARN!. They should be able to have more funding for small grants, to present at international conferences, to access relevant research data, etc. Proactively encourage PhD candidates to become active members of LEARN! and grant them additional time for coordinating tasks in the PhD community. The necessary extra resources to achieve this should come from the faculties participating in LEARN!.

Appendix 1: The SEP 2021-2027 Criteria and Categories

The committee was requested to assess the quality of research conducted by the UHS as well as to offer recommendations in order to improve the quality of research and the strategy of the UHS. The committee was requested to carry out the assessment according to the guidelines specified in the Strategy Evaluation Protocol. The evaluation included a backward-looking and a forward-looking component. Specifically, the committee was asked to judge the performance of the unit on the main assessment criteria and offer its written conclusions as well as recommendations based on considerations and arguments. The main assessment criteria are:

1) **Research Quality:** the quality of the unit's research over the past six-year period is assessed in its international, national or – where appropriate – regional context. The assessment committee does so by assessing a research unit in light of its own aims and strategy. Central in this assessment are the contributions to the body of scientific knowledge. The assessment committee reflects on the quality and scientific relevance of the research. Moreover, the academic reputation and leadership within the field is assessed. The committee's assessment is grounded in a narrative argument and supported by evidence of the scientific achievements of the unit in the context of the national or international research field, as appropriate to the specific claims made in the narrative.

2) **Societal Relevance:** the societal relevance of the unit's research in terms of impact, public engagement and uptake of the unit's research is assessed in economic, social, cultural, educational or any other terms that may be relevant. Societal impact may often take longer to become apparent. Societal impact that became evident in the past six years may therefore well be due to research done by the unit long before. The assessment committee reflects on societal relevance by assessing a research unit's accomplishments in light of its own aims and strategy. The assessment committee also reflects, where applicable, on the teaching-research nexus. The assessment is grounded in a narrative argument that describes the key research findings and their implications, while it also includes evidence for the societal relevance in terms of impact and engagement of the research unit.

3) **Viability of the Unit:** the extent to which the research unit's goals for the coming six-year period remain scientifically and societally relevant is assessed. It is also assessed whether its aims and strategy as well as the foresight of its leadership and its overall management are optimal to attain these goals. Finally, it is assessed whether the plans and resources are adequate to implement this strategy. The assessment committee also reflects on the viability of the research unit in relation to the expected developments in the field and societal developments as well as on the wider institutional context of the research unit

During the evaluation of these criteria, the assessment committee was asked to incorporate four specific aspects. These aspects were included, as they are becoming increasingly important in the current scientific context and help to shape the past as well as future quality of the research unit. These four aspects relate to how the unit organises and actually performs its research, how it is composed in terms of leadership and personnel, and how the unit is being run on a daily basis. These aspects are as follows:

4) **Open Science:** availability of research output, reuse of data, involvement of societal stakeholders;
5) **PhD Policy and Training:** supervision and instruction of PhD candidates;
6) **Academic Culture:** openness, (social) safety and inclusivity; and research integrity;
7) **Human Resources Policy:** diversity and talent management.

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Appendix 2: Programme of the site visit

08:45	09:00	Welcome panel at VU by Melanie, Aisha and Ravenna
9.00	10:00	Panel convenes and preparation of the day
10:00	10:45	Panel meets with LEARN! Board
10:45	11:00	Coffee break
11:00	12:30	Panel meets with programme leaders (including presentations Educational Sciences and Child Rearing)
12:30	13:30	Lunch, reflections and preparation for the afternoon
13:30	14:45	Panel meets with PhD-candidates
14:45	15:45	Panel meets with a selection of staff members
15:45	16:00	Short break
16:00	17:00	Secretary and panel discussion
17:00	18:00	Closing session with LEARN! Board and programme leaders

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Appendix 3: Quantitative data

Table 1. Input of research staff (Compulsory Table E2 SEP)

	2015		2016		2017		2018		2019		2020		2021	
	FTE	#	FTE	#	FTE	#	FTE	#	FTE	#	FTE	#	FTE	#
Full professor	2,64	8	2,16	6	2,3	5	2,96	8	3,68	8	2,64	8	2,48	8
Associate professor	1,72	4	2,15	5	2,7	6	2,45	7	3,2	8	2,8	7	3,51	9
Assistant professor	7,2	18	7	20	7,41	19	7,92	22	12,7	26	10,64	28	9,5	24
Post docs	7,98	19	7,4	20	6,84	18	10,56	22	13,9	33	13,16	28	11,7	22
PhD-candidates	8,8	22	9	25	8,16	24	15,6	30	17,9	32	17,98	31	13,77	31
Total number of unique research staff	28,34	71	27,71	76	27,41	72	39,49	89	51,4	107	47,22	102	40,96	94
Support staff										2		2		2
Visiting fellows		4		1				2		2		2		8
Total number of unique staff	28,34	75	27,71	77	27,41	72	39,49	91	51,4	111	47,22	106	40,96	104

Note:

The breakdown of staff according to fte was made by combining data from PURE and LEARN! annual reports. PURE was implemented in 2017 to record research output of staff who are working at the VU (not VUmc). Affiliation to research institute is not registered automatically and colleagues from VUmc (LEARN! programme 'motivation for lifelong learning') are not included; both have been added manually from information in the annual reports.

The number of fte in the table represents the research time for LEARN! which will vary per person according to their specific roles and responsibilities and whether someone is a member of one or more research institutes. We were however unable to correct for potential errors caused by how PURE reports research FTE, specifically:

- If an affiliation was added or ended with a start/end time in the middle of the year, PURE takes this into account when calculating the sum of FTE, rather than the actual start or end date of someone's contract.
- Research time for PhD-candidates and postdoctoral scholars in PURE is not consistently registered in PURE in terms of amount of research FTE for employment contract.
- FTE's of external PhD-candidates are not registered in PURE , this distorts the average research time for our total number of PhD-candidates
- Guest contracts are not included, except for PhD-candidates. This means that the total number of LEARN! members is somewhat higher.

Given these caveats, the data in the table should be read as a best estimate of the average research time for LEARN! according to staff category.

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Table 4. Funding (compulsory Table E3 SEP)

Funding and expenditures LEARN!	2019		2020		2021	
Income (FGB contribution)	116.736		114.000		115.406	
Expenditure	€	% of total funding	€	% of total funding	€	% of total funding
Personnel costs	70.514,36	60,40	51.113,08	44,84	28.859,27	25,01
Material costs	95,25	0,08	53.757,13	47,16	59.200,08	51,30
Other costs	12.759,71	10,93				
Total expenditure	83.369,32	71,42	104.870,21	91,99	88.059,35	76,30

Funding (LEARN! members)	2015		2016		2017		2018		2019		2020		2021	
	#	FTE	#	FTE	#	FTE	#	FTE	#	FTE	#	FTE	#	FTE
Direct funding	24	9,60	26	9,36	23	8,74	26	11,44	28	13,44	34	15,64	26	11,44
Research grants	13	5,20	14	5,04	13	4,94	24	10,56	41	19,68	48	22,08	42	18,48
Contract research	6	2,40	7	2,52	15	5,70	27	11,88	36	17,28	33	15,18	24	10,56
Total	43	17,20	47	16,92	51	19,38	77	33,88	105	50,40	115	52,90	92	40,48

Note:
The first table is drawn from annual reports and provides an overview of how the faculty contribution for the research institute was spent.
The second table includes data from PURE with similar caveats and recalculations as noted under table 1 . The difference in number of fte in table 1 and 4 is caused by the fact that for some staff members there is no registration of how their research is funded and data from funding of research time for VUmc colleagues is missing. We have estimated the split of fte across funding categories in this table on the basis of available data –extrapolating the split across funding streams to staff members with missing data, but without including VUmc colleagues.

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Table 10. PhD-candidates (compulsory Table E4 SEP)

Enrolment		Success rates					
Starting year	Total	Graduated in year 4 or earlier	Graduated in year 5 or earlier	Graduated in year 6 or earlier	Graduated in year 7 or earlier	Not yet finished	Discontinued
2015	8	3	2	1		2	
2016	9	1	4			3	1
2017	13		2			11	
2018	13	1				12	
2019	6					5	1
2020	8					8	
2021	4					4	
Total	**52**	**5**	**8**	**1**	**0**	**45**	**2**

* These numbers are generated by Hora Finita in which PhD-candidates are registered. These numbers do not correspond with the data generated by PURE (as shown in table 1). Table 1 indicates a higher number of PhD-candidates per year and provides a more accurate number. The divergence can be explained by the fact that Hora Finita only registers PhD-candidates by their supervisor at the department level instead of research institute. Several PhD-candidates are therefore not connected to the institute, although their work is affiliated to the institute. As PURE does not include start and end dates of PhD work we can only draw on Hora Finita data for this table.