

Panel Recommendation to the FIBAA Accreditation and Certification Committee



21st Meeting on March 27, 2026

CERTIFICATION „EXCELLENCE IN DIGITAL EDUCATION“®

Project Number: 24/083
Continuing Education Institution: European School of Neonatology (ESN) within the European Society for Paediatric Research (ESPR)
Course: Master of Advanced Studies in Neonatology (MAS)

The FIBAA Accreditation and Certification Committee has taken the following decision:

According to § 7 (2) in conjunction with § 10 (1) of the “Special Conditions for awarding the FIBAA Quality Seal for „Excellence in Digital Education”®”, the continuing education course is certified.

Period of Certification: March 27, 2026 – March 26, 2031

The FIBAA Quality Seal is awarded



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**Report for the European School of Neonatology
(ESN) within the European Society for Paediatric
Research (ESPR) –
Master of Advanced Studies in Neonatology (MAS)**

General Information on the Institution

Short description of the institution and the continuing education programme:

The European School of Neonatology (ESN) represents the educational arm of the European Society for Paediatric Research (ESPR). It is a not-for-profit organisation.

The Master of Advanced Studies (MAS) in Neonatology is a clinically-integrated continuing education programme that equips medical professionals with the necessary knowledge, skills, competences, and attitudes required to practise high-quality neonatal medicine tailored to their local clinical setting. The programme follows a digital-by-design philosophy for educational content and delivery that is accompanied by individual performance assessments (“Transfer-into-Practice” tasks) which take place at the trainees’ local institutions, supported by their local supervisors.

Certification level:

Continuing Education Programme

Type of certification:

Initial certification

Date of the Digital Assessment Conference:

November 21, 2025 (Zoom)

Course of procedure

The Master of Advanced Studies (MAS) in Neonatology offered by the European School of Neonatology (ESN) within the European Society for Paediatric Research (ESPR) is participating in the FIBAA certification „Excellence in Digital Education“® and submitted a self-documentation and attachments based on the assessment catalogue on August 25, 2025.

FIBAA has appointed the following panel members:

Prof. Dr.-Ing. Jörg M. Haake

Fern-University Hagen

Professor of Cooperative Systems

(Knowledge-based Virtual Collaboration Environments, Technology Enhanced Learning and E-Education, Distributed Systems, Computer-Supported Cooperative Learning and Working, Distance Learning Expert)

Dr. Anne Strauch

German Institute for Adult Education

Deputy Head of the Research Department

(Adult Education/Continuing Education in: Competence Assessment and Validation, Competence Orientation in the Context of New Learning Technologies, Digital Educational Credentials, Microcredentials)

Koen Wijsman MD, MSc

Leiden University Medical Center

Physician-researcher/PhD Candidate in Artificial Intelligence MSc: Health Care Management
Erasmus University Rotterdam MSc: Medicine Leiden University

FIBAA Project Manager:

Christiane Butler

The following assessment is based on the self-documentation and the discussion during the digital conference on November 21, 2025 (via Zoom). During the digital conference, the ESN representatives shared the following presentations:

- Presentation of the ESPR/ESN

This report was made available to the ESPR for review on February 13, 2026. The ESPR submitted the feedback on March 6, 2026 and highlighted minor inaccuracies, the report was amended accordingly.

Summary

The Master of Advanced Studies (MAS) in Neonatology offered by the European School of Neonatology (ESN) within the European Society for Paediatric Research (ESPR) meets the quality requirements on which the FIBAA Quality Seal „Excellence in Digital Education“® is based and exceeds them in seven criteria. The institution can be certified by the Foundation for International Business Administration Accreditation (FIBAA) with the FIBAA Quality Seal „Excellence in Digital Education“®.

The panel members highlight the high level of commitment to educational innovation. They believe that the ESN provides valuable work in European (and global in the future) neonatal care education and particularly highlight the digital didactic concept with the Transfer-into-Practice activities, represented in standard 4 of the certification. Recommendations for further improvement primarily concern quality assurance mechanisms, especially in consideration of the potential for future growth of the programme. Against this background, the panel members suggest the following recommendations:

- **Standard 3: Technology**, Criterion 3.3:
The panel members recommend integrating the complementary applications (video conferencing, assessments and also analytic measures) directly into the LMS, so that trainees and tutors don't need to navigate in between various applications.
- **Standard 5: Quality Assurance**, Criterion 5.1:
The panel members recommend creating a process diagram for the Quality Handbook for better overview and transparency of QA processes.
- **Standard 5: Quality Assurance**, Criterion 5.2:
The panel members recommend completing the documentation of QA processes and procedures.
- **Standard 5: Quality Assurance**, Criterion 5.3:
The panel members recommend supporting tutors with a learning analytics dashboard when scaling up the programme.

Examples that can be highlighted as good practice are represented in the following set of criteria, which exceed the quality requirements:

- Objectives (see chapter 1.1),
- Staffing (see chapter 2.1),
- Teaching and learning platform (see chapter 3.3),
- Teaching methods (see chapter 4.2),
- Learning materials (see chapter 4.3),
- Forms of examination (see chapter 4.4), and
- Academic support for students (see chapter 4.5).

Further positive aspects the panel members would like to highlight although they do not lead to a formal “exceed” or “exceptional” rating within the respective chapter:

- The panel members highlight the strong positioning of the ESN MAS (see chapter 1.2).

- The panel members highlight the forward-looking objectives of the ESN (see chapter 1.4).
- The panel members highlight the opportunities the ESPR provides for tutors to network, present abstracts of their publications, and to engage with the neonatology community (see chapter 2.4).
- The panel members highlight the very effective collaboration with ISYFLOW (see chapter 3.1).
- The panel members highlight that combining individual e-learning (case-based learning) with online tutor sessions and supervisor guided Entrustable Professional Activities (EPAs) is a sound didactic approach which looks promising for allowing practitioners to achieve theoretical and practical mastery (see chapter 4.1).

The quality profile for the ESPR can be found at the end of this report (see p. 32).

Presentation and evaluation in detail

Standard 1: Strategy for the digitalisation of the teaching and learning portfolio

1.1 Criterion: Objectives

The ESN's digitalisation strategy is built on a 'digital-by-design' philosophy, meaning that all educational content and delivery formats in the Master of Advanced Studies (MAS) in Neonatology are developed for online learning. This strategy relies on the use of a purpose-built Learning Management System (LMS), integration of synchronous and asynchronous teaching formats, interactive case-based units, and digital simulations. Importantly, the strategy is not only about transferring traditional content online, but about making best use of the opportunities linked to digital learning: flexibility, interactivity, scalability, and learner-centred design. The ESN also pursues continuous development to ensure digital teaching excellence and alignment with European quality standards for higher education.¹

For trainees, the digital strategy creates a more flexible, inclusive, and personalised learning experience. It allows them to access content from any location and engage with peers across borders. For the ESN, this new approach enhances competitiveness, enabling the school to reach a broader, more diverse trainee body while maintaining academic excellence. For faculty and staff, digitalisation helps foster innovation in teaching practices, streamlines administrative tasks, and opens new avenues for scholarly work in medical education. Collectively, the strategy facilitates a dynamic online learning ecosystem called the ESN Campus (and its derivatives such as the ESN Tutorial or ESPR Community Platforms) that is adaptive to both learner needs and broader shifts in the global education landscape.

As a new initiative, in the short term (1–2 years), the focus is on consolidating core infrastructure: further refining the ESN LMS and finalising core modules. In the medium term (3–5 years), the ESN aims to deepen interactivity, refine course offerings, and making the ESN 'the place to be' for neonatal education in Europe. In the long term (5+ years), the ESN envisions itself as a truly global provider of digital neonatology education, catering not only to the needs of medical professionals in western countries, but also offering education opportunities for healthcare workers in the global South.

The European Curriculum & Evaluation Grid for Training and Assessment in Neonatology - the ESN MAS Curriculum - based on the European Training Requirements (ETR) Neonatology, strengthens the ESN's position in the global education market by enabling it to offer a unique and flexible programme tailored to the needs of a specialised clinical audience. By embracing digitalisation, the ESN differentiates itself from traditional, location-bound programmes and meets the demand for accessible postgraduate education in medicine. It also seeks to enhance the ESN's visibility and appeal to international partners and institutions, enabling the formation of new collaborations. Ultimately, the curriculum

¹ See Publication: *European Training Requirements in Neonatology 2021: The ESPR, EAP, and UEMS Accredited European Syllabus for Neonatal Training and European training requirements in Neonatology 2021—towards a unified training standard for Neonatologists*

positions the ESN as an innovative, credible, and responsive institution in the field of neonatal education.

The ESN MAS programme opens access to new learner populations who previously faced logistical, financial, or institutional barriers to specialising in Neonatology. By removing the need for physical presence or travel, the programme aims to become viable for clinicians working in regions without easy access to advanced academic centres, including those in lower resource settings, such as Eastern Europe. It also supports inclusivity by accommodating trainees with challenging professional or personal responsibilities, such as shift-working healthcare professionals or parents. The programme's main strength is that it aims to educate trainees without removing them from clinical duties. In fact, for the ESN MAS, the integration of learning and clinical practice is a core principle: each trainee is expected to complete 'Transfer into Practice Tasks' in collaboration with a local supervisor. These assignments ensure that learning is directly applied in the trainee's clinical setting, reinforcing the relevance of the curriculum while strengthening local neonatal care capacity. Through this model, digitalisation not only broadens access but actively supports decentralised capacity-building in neonatal care across Europe (and in the future beyond).

Digitalisation is a key driver of long-term sustainability for the European Society for Paediatric Research (ESPR) and its educational arm, the ESN. It allows ESPR to scale its offerings without proportional increases in infrastructure or travel-related costs, thereby optimising resource use. Likewise, it facilitates collaboration with organisations from Europe and beyond that share the same mission. The digital model is also more resilient to external disruptions such as pandemics or geopolitical limitations. For faculty, digital teaching reduces repetitive tasks through recorded content and digital assessments, freeing time for mentoring and exchange with trainees. Moreover, the production of digital learning materials and research in digital education contributes to academic visibility and professional growth.

Evaluation

The quality requirement is exceeded. The panel members highlight that the digital strategy provides distributed practitioners with an opportunity of specialising in Neonatology and that achieving a European standardised curriculum is a worthwhile objective. The digital strategy includes short-, medium- and long-term goals and is coherent.

In addition, the ESPR has analysed the education market and the target group in detail. The digital concept perfectly suits the target group who are trainees dispersed across Europe. The digital strategy underlines ESPR's overall strategy to make neonatal education standardised across Europe and beyond. Clearly, the ESPR has taken the results of this market analysis into account in the development of the strategy for digital teaching.

The institution has clearly described how the "digital-by-design" format makes ESN reach a broader target group of students (especially for populations who previously faced logistical, financial, institutional barriers to specialise in neonatology), what the digital format offers to staff and how the digital format is a key driver of long-term sustainability for ESPR.

During the assessment conference, the panel members also learned that all ESPR members were consulted and had the opportunity to play an active role in developing the digital strategy. Moreover, ESPR members have published on the need for unified European

training requirements in Neonatology, involving the scientific community in ESPR's aim and mission.

1.2 Criterion: Implementation of the strategy

The strategy for digital teaching is embedded in the overall institutional strategy of the ESN, which prioritises accessibility and quality in postgraduate education. Digitalisation is not a parallel or optional initiative but a central element that supports the ESN's mission to deliver neonatal education across borders. The adoption of a digital-by-design model is aligned with the ESN's goal to serve a diverse learner base while remaining responsive to the realities of clinical work in neonatology. It enables the ESN to scale its impact, extend its reach, and ensure that learners can apply academic knowledge in clinical practice through transfer into practice tasks. Digital education also supports the ESN's emphasis on lifelong learning and interprofessional collaboration, allowing it to function as a flexible and sustainable educational system.

The implementation of the digitalisation strategy follows a collaborative process. Responsibilities are divided between defined roles:

- ESN Chairperson: Holds overall organisational responsibility.
- ESN MAS Programme Director: Oversees the day-to-day implementation of the programme, coordinates faculty and trainees, and ensures the proper functioning of technical systems, amongst others.
- Curriculum Development Group: Includes neonatologists, educators, and digital learning experts. They develop and adapt teaching materials for digital delivery based on the ESN MAS Curriculum.
- Faculty Members: Provide feedback on content and deliver teaching through the LMS.
- IT and Digital Support Team: Ensure technical functionality and manage/develop the LMS.
- ESN Quality Assurance Team: Monitor and evaluate progress through regular reviews.

This framework seeks to ensure that the ESN operates effectively and is able to develop in response to learner needs, technological advances, and educational practice.

ESPR's didactical considerations and concept for the ESN MAS have been published in 2022.²

In addition to the MAS, the ESN offers further educational opportunities (not part of the certification procedure):

² <https://www.frontiersin.org/journals/pediatrics/articles/10.3389/fped.2022.899160/full>, also available via ESPR's website: <https://esn-education.org/mas/>, last accessed on December 2, 2025

1. Master of Science (MSc) in Neonatology (NOTE): An academically focused programme delivered in collaboration with the University of Southampton, emphasising theoretical and academic aspects of neonatal medicine.
2. Special Courses and Training: These include online and in-person courses, such as pre-congress workshops on topics like mechanical ventilation and neonatal echocardiography, which can contribute ECTS credits/equivalents towards the MAS.
3. The Lecture Series 'Perspectives on Effective Neonatology': A free 16-part series comprising pre-recorded presentations followed by live discussions, offering insights into various topics in Neonatology.
4. The podcast “Neonatology Now”, featuring a specific topic in Neonatology each month, presented by a world-renowned expert in the field.

Collectively, these programmes and courses position the MAS (along with the MSc) as a central component of the ESN's educational offerings, providing a structured pathway for medical professionals seeking advanced training in neonatal care.

Evaluation

The quality requirement is fulfilled. The strategy for digital teaching has been implemented in the (overall) strategy of the ESN/ESPR. The ESN has defined decision-making processes, competences and responsibilities for the implementation of digital teaching. It informs the public about its concept for digital teaching.

The strategic orientation is also reflected in the ESN's further educational portfolio, its resources and the learning environment. The panel members highlight that the ESN has created a distinct profile for the MAS programme in differentiation to the ESN NOTE, which is much more focused on theory while the MAS programme provides a very practical oriented, clinically integrated training programme catering to the specific needs of the dispersed trainees and their institutions. The ESN MAS' practical training component is a unique quality that leads to a strong position in the labour and educational market.

1.3 Criterion: Review and measures

The implementation of the ESN's digitalisation strategy is evaluated through a quality assurance process that integrates quantitative metrics, qualitative feedback, and internal reviews.

Trainee feedback and faculty perspectives are collected via online surveys, module evaluations, interviews, and structured debriefs. If monitoring indicates that desired outcomes are not being met, such as reduced learner engagement, unsatisfactory learning outcomes, or technical barriers, the ESN initiates corrective measures. Root cause analysis is conducted using the collected data, leading to targeted interventions. These may include:

- Redesigning modules to enhance usability, interactivity, or pedagogical alignment.

- Providing additional faculty support or targeted training.
- Upgrading or replacing underperforming digital tools.
- Adjusting the mix between synchronous and asynchronous learning formats.

If systemic issues are identified, the ESN Board may adjust the digitalisation strategy itself, including revising organisational priorities. This process functions as an adaptive feedback loop, ensuring that digitalisation remains a responsive, evolving component of ESN education, continuously aligned with learner needs, technological developments, and educational effectiveness.

Evaluation

The quality requirement is fulfilled. The ESN has described processes and measures to evaluate the effectiveness of the strategy for digital teaching in a systematic way. If deviations are detected, the ESN has described measures to ensure that the goals are achieved.

During the assessment conference, the panel members learned that the description is not laid down in the ESN Quality Handbook or other relevant documents. Hence, the panel members suggest that the ESN anchors the process of how they evaluate indicators and formulate measures in the Quality Handbook.

In order to measure and continuously verify its unique positioning on the market (see chapter 1.1), the panel members believe that the programme could further benefit from defining specific KPIs. Therefore, the panel members suggest introducing key performance indicators (KPIs) for the market positioning.

1.4 Criterion: Future orientation

According to the ESN, they have adopted a forward-looking digital strategy that positions it as a pioneer in neonatal education.³ Its digital vision is defined by continuous innovation, learner-centred design, and global accessibility. The aim is to progress from a digital-first model to a fully integrated digital ecosystem, incorporating personalised learning pathways, adaptive learning technologies, and advanced tools. In this vision, digital education is not merely a delivery method but a core enabler of the ESN's mission to strengthen neonatal care through transnational education, decentralised training, and real-time knowledge exchange between academia and clinical practice.

Collaboration is central to the ESN's digital strategy. The organisation maintains active partnerships with academic institutions, clinical training sites, and digital learning experts to co-develop content, share infrastructure, ensure pedagogical quality, and enable cross-institutional teaching and supervision. Technical implementation and learner support are further strengthened through collaboration with technology providers and e-learning consultants, particularly ISYFLOW (www.isyflow.ch), the company behind the ESN LMS.

Scientific publications from the ESN board underline its orientation beyond the ESN. The ESN Chairperson published dedicated peer-reviewed articles together with ESN board

³ See self-report p. 8

members to provide the ground for ESN MAS programme pedagogical/didactical framework:

- Santoro D, Zibulsky DA, Roehr CC, Langhammer F, Vento M, Szczapa T, Fauchère JC, Dimitriou G, Rabe H, Mader S, Zimmermann LJI, Murray DM, Smith S, Hall M, Künzel M, Wellmann S. “Meeting the need for effective and standardized neonatology training: a pan-European Master’s Curriculum.” *Pediatr Res.* 2024 Oct;96(5):1195-1200. doi: 10.1038/s41390-024-03182-8. Epub 2024 May 3. PMID: 38702380; PMCID: PMC11521982.
- Wellmann S, Künzel M, Fentsch P, Fauchère JC, Rabe H, Szczapa T, Dimitriou G, Vento M, Roehr CC. Opinion Paper: “Rationale for Supra-National Training in Neonatology.” *Front Pediatr.* 2022 Jul 1;10:899160. doi: 10.3389/fped.2022.899160. PMID: 35844736; PMCID: PMC9283761.

Evaluation

The quality requirement is fulfilled. The panel members highlight the forward-looking objectives of the ESN. The institution operates in a future-oriented manner with regard to digital teaching. Cooperations are formed to ensure that trends in digital teaching and technical innovations are observed.

Standard 2: Staff

2.1 Criterion: Staffing

The ESN MAS currently has five tutors, each supervising a group of five to six trainees. These tutor groups operate entirely online. Beyond their subject-matter knowledge, all instructors are experienced educators and active researchers who employ established pedagogical methods to enhance learning outcomes. Many of them regularly participate in or lead teaching sessions at international forums such as the ESPR congresses (including jENS⁴ and CEPAS⁵), and they frequently hold academic and leadership positions at university and research institute levels. They possess understanding of the characteristics of the programme's target audience and tailor their teaching to accommodate the diverse clinical settings, varying prior knowledge, and demanding work schedules of the trainees, ensuring that the educational experience is both relevant and accessible.

The tutor-group model is a cornerstone of the competency-based framework of the ESN MAS programme. Tutors are experienced paediatricians and neonatologists, carefully selected for their expertise in both online and in-person teaching. Within the groups, they act as mentors and facilitators, guiding trainees in applying theoretical knowledge to practical contexts through case discussions, problem-solving exercises, and reflection on Entrustable Professional Activities (EPAs⁶). In parallel, peer-to-peer interaction supports the development of transferable skills such as teamwork, communication, and critical appraisal of evidence.

This structured yet flexible format aims to ensure continuity of supervision and personalised feedback, but also connects trainees to an international professional network, mirroring the collaborative nature of modern neonatal medicine.

Evaluation

The quality requirement is exceeded. The ESPR has established standardised processes with regards to didactic initial qualification in digital teaching and defines prerequisites and standards that teaching staff must fulfil in order to teach in digital form.

On the basis of the CVs provided by the ESPR and the discussions with the tutors during the assessment conference, the panel members underline that the ESPR has highly qualified staff with media competence related to digital teaching. The panel members particularly highlight the tutors' qualifications and their engagement within the programme. They play a key role realising the teaching-learning objectives and they do this in the best possible way. Moreover, the ESN has established special roles (ESN Medical Didactics Officer, see chapter 2.2) for supporting tutors in digital teaching.

⁴ Congress of "joint European Neonatal Societies"

⁵ Congress of European Paediatric Academic Societies

⁶ See chapter 4 and specifically section 4.4

2.2 Criterion: Further qualification

The ESN MAS Programme Director holds formal responsibility for the professional development and pedagogical support of the teaching staff, consisting of five part-time tutors at the moment.

While no dedicated budget for training is available yet, time resources are allocated for staff development through at least twice-yearly online meetings and ongoing individual support. These structured online meetings, attended by all tutors, the ESN MAS Programme Director, and the ESN Chairperson, address digital teaching practices, exchange of experiences, and identification of training needs. Additionally, regular evaluations as outlined in the ESN MAS Quality Handbook collect tutor feedback on online teaching, with respective follow-up actions including tutor training as needed.

Additional professional development opportunities are also fostered through peer exchange. Relevant external training opportunities identified by tutors are shared via the tutor workspace, ensuring all faculty members have access to up-to-date resources on digital education, clinical pedagogy, and emerging neonatal topics. In this way, the tutor network functions not only as a supervisory structure but also as a professional learning community, committed to the ongoing improvement of teaching quality within the ESN MAS.

Tutors are also encouraged to use freely available MOOCs and online tutorials to enhance their skills.

Evaluation

The quality requirement is fulfilled. Training is provided for staff involved and expected to be involved in digital teaching. Staff working as tutors and in other support functions for students are appropriately instructed and trained in the use of relevant digital elements. Concrete measures for the further qualification of teaching staff are implemented.

In the future, the ESN would benefit from a structured development plan for the further training and support for tutors. The twice-yearly online meetings are a good occasion for tutors to exchange experiences and support each other. With further growth of the ESN MAS, a structured development plan or formal induction and training concept based on the tutor's or other staff's needs would strengthen consistency (e.g., tutor handbook, digital-didactic workshops). Hence, the panel members suggest institutionalising tutor support and further development (e.g., by adding a staff development plan to the ESN MAS Quality Handbook).

2.3 Criterion: Support

All media content needed for teaching is pre-produced by module authors and made available within the learning modules. As a result, tutors are not required to produce videos or audio recordings themselves, nor to record lectures. Tutors use the core learning resources developed by ESN module authors but adapt their delivery for live tutor sessions (based on trainees' submissions on the LMS during self-study phases). These sessions

address the provided content, engage with trainee submissions, and ensure learning activities remain aligned with programme objectives.

The ESN MAS Programme Director holds overall responsibility for supporting tutors. Tutors receive clear information and structural guidance from the ESN Programme Director, who also creates tutor guidelines. The ongoing and further pedagogical/didactical qualification of the staff is guided by a professor who is the ESN Medical Didactics Officer and a doctor who is the ESN expert of pedagogical/didactical implementation. Both have an exceptional track record of postgraduate education in academic and medical fields in Europe and the USA.

Tutor workload is defined in the official tutor guidelines and monitored through post-module evaluations. Regular meetings with the ESN MAS Programme Director and ESN Chairperson allow for structured feedback, enabling adjustments and ensuring that the impact of digital teaching is actively considered in programme management.

The programme material is developed by the ESN module developers (authors) who are experts and professors in Neonatology. They are responsible for creating the core digital learning resources for the ESN MAS. The content is then didactically prepared by the ESN Production Officer and the ESN Medical Didactics Officer to ensure alignment with the digital-by-design approach. For the ESN module developers, the ESN Production Officer is the contact point for support and guidance in producing the learning materials.

The ESN Chairperson maintains regular contact with the development team to ensure that technical capabilities and pedagogical requirements remain aligned. Technical or digital needs arising from developing or teaching practice are communicated directly to the platform developers at ISYFLOW, who implement enhancements in the LMS. Examples of implemented features include a 'Story' format for progressive case studies, releasing clinical information step-by-step or integrated tools to enter and store trainee assessments directly on the platform.

All ESN module material requires regular content update due to ongoing medical knowledge advancement and continuous revision of international medical guidelines. In addition, the digital format may require adjustment based on feedback from teaching staff. Thus, ESN modules are checked at regular intervals by the ESN Production Officer supported by the ESN Medical Expert for content update and by the ESN Medical Didactics Officer for digital teaching update.

Evaluation

The quality requirement is fulfilled. Teaching staff are supported in the didactic use of digital technologies, especially in the creation of teaching materials. The ESPR ensures that the workload of academic staff and any other effects of participation in digital teaching are taken into account in the management of the programme.

2.4 Criterion: Knowledge management

Tutors have access to a shared digital workspace for collaboration and peer support. They exchange knowledge and experience both informally (via the digital workspace) and

through regular meetings convened by the ESN. Each meeting includes a standing agenda item dedicated to the exchange of good practices in digital teaching. Minutes are recorded and archived in the dedicated tutor workspace on the LMS. This secure digital environment enables file sharing, commenting, and threaded discussions, serving as the central repository for meeting minutes, shared resources, and examples of effective teaching methods. The ESN MAS Programme Director also contributes to these meetings by introducing new didactic or technical insights, as well as updates on internal developments.

Beyond the programme's internal structures, tutors are encouraged to engage in broader inter-institutional exchange. The ESPR's annual conferences, including jENS and CEPAS, provide opportunities to present abstracts, attend sessions, and join the in-person ESN tutor meeting traditionally held alongside these events. These gatherings further strengthen the community of practice, facilitate networking, and promote alignment of the ESN MAS with wider European neonatology initiatives.

Evaluation

The quality requirement is fulfilled. Staff are encouraged to support each other in the development of digital teaching materials and further development of digital teaching, and to exchange expertise across disciplines on teaching and learning techniques in digital teaching. The ESN has provided an online platform accessible to all those involved in digital teaching where experiences can be submitted, commented on and shared.

In terms of subject-matter expertise, the panel members highlight the opportunities the ESPR provides for tutors to network, present abstracts of their publications, and to engage with the neonatology community.

Standard 3: Technology

3.1 Criterion: Technical organisational unit

The ESN MAS operates entirely in a digital teaching environment, with the ESN office serving as the technical and organisational unit. Institutional responsibilities are distributed between defined roles. The ESN Production Officer is responsible for preparing online learning materials for didactic use and is supported by the ESN Medical Didactics Officer, who is part of the ISYFLOW team that hosts and develops the ESN Campus Learning Management System (LMS). The ESN MAS Programme Director works closely with this team to coordinate both the implementation and the ongoing development of the programme's digital teaching infrastructure.

Technical support for the teaching staff as well as the trainees is managed through a two-level ticket system within the ESN Campus:

- Level 1: Handled by the ESN MAS Programme Director, with responses typically within one working day.
- Level 2: Complex issues requiring coding or platform development are referred to ISYFLOW.

Tutors also have direct access to the ESN MAS Programme Director for advisory support, including guidance on technology use and solutions to digital teaching challenges.

At present, there is no formal institutional plan for technical training of tutors or for regular, structured courses on the use of digital teaching tools. However, informal guidance and on-demand support are provided by the MAS Programme Director. The ESN places emphasis on continuous improvement of the digital learning environment, working in close collaboration with platform developers (ISYFLOW) to add new features in response to emerging pedagogical needs.

Evaluation

The quality requirement is fulfilled. The ESN office enables and supports the implementation of digital teaching. Tutors have sufficient resources at their disposal for the technical processing of learning aids and materials. There are also sufficient advisory and support services available.

Furthermore, the panel members highlight the very effective collaboration with ISYFLOW. The interviews with different stakeholders during the assessment conference confirmed that ISYFLOW quickly reacts to new arising needs of the ESN. Furthermore, the panel members learned during the interviews that all ISYFLOW clients benefit from each other's feedback to ISYFLOW, because innovations and enhancements of the functionality of the platform based on client feedback are automatically offered to all other clients as well.

3.2 Criterion: Technical infrastructure

The ESN MAS operates entirely online, with all modules developed and delivered remotely. There are no on-site lecture halls or seminar rooms. Tutors and module authors use their

own equipment, with minimum requirements for tutors including a laptop or desktop computer with a camera and microphone, and a stable, high-speed internet connection. The ESN MAS Programme Director works from a dedicated office equipped with reliable LAN and WiFi connectivity. To date, internet capacity and reliability have not presented any issues.

Although there are no specialised studios or media workspaces, the ESN provides technical support to teaching staff, including services such as video editing and voiceover production, ensuring that modules and learning materials meet professional standards. Online teaching and events are delivered using a suite of established software platforms, including Zoom, Microsoft Teams, Google Meet, and the gamified meeting tool Workadventure. These platforms enable both synchronous and asynchronous teaching, as well as interactive group activities.

Evaluation

The quality requirement is fulfilled. The ESPR has a technical infrastructure that enables the ESN office to produce the learning material for the digital modules.⁷ Appropriate software platforms are available to and sufficient hardware for digital teaching is ensured by the tutors. As the ESN MAS is a fully online programme and tutors work fully remotely, the technical equipment of the teaching rooms is not relevant.⁸

3.3 Criterion: Teaching and learning platform

The ESN Campus platform is hosted externally by ISYFLOW, providing reliable server capacity, sufficient bandwidth, and responsive technical support. The platform provides a core set of tools used for teaching and learning. These include content and data management systems, blogs, forums, chats, quizzes, media displays, and evaluation tools. Complementary applications such as Zoom, Workadventure, Microsoft Teams, Power-Point, Canva, Audacity, and Clipchamp are used to prepare learning materials and support interactive teaching methods.

The features and use of the platform are:

- Course design: Dedicated workspaces for individual tutor groups, multimedia content support (audio, video, interactive elements), annotation tools, and integration with external applications.
- Teaching engagement: A variety of e-learning activities, interactive blogs, and real-time chat functions to facilitate communication between faculty and participants.
- Institutional tools: Centralised news updates, internal messaging, shared calendars, enrolment management, evaluation tools, and automated notifications via SMS or email.

⁷ See also chapter 3.1

⁸ Full criterion description also reads: “The lecture halls and seminar rooms are equipped with functional and modern media technology.”

- Mobile access: Full compatibility with iOS and Android devices to support learning on the move.
- Data and privacy: Analytics for performance monitoring, strict user data control, and policies designed in line with privacy and data protection requirements.
- Helpdesk: A two-tier ticketing system for resolving technical or administrative issues efficiently.
- Scalability: Tiered subscription options, additional storage capacity, and priority support available as needed.

The platform was selected as it could be customised for the ESN MAS programme and will continue to be developed to meet its evolving requirements. The subscription can be upgraded at any time to increase capacity or to introduce new functionalities developed by ISYFLOW based on the ESN's requirements.

Evaluation

The quality requirement is exceeded. The teaching platform is clearly structured and designed to be user-friendly. It is stable and scalable and there are no disruptive impulses when using it. It offers sufficient possibilities for embedding text, audio, images, graphics, animation, multimedia files and social media. Trainees can navigate smoothly through the teaching units. The ESN has established data protection regulations.⁹

Furthermore, complementary applications are offered to support collaborative learning and interaction both among students and between students and teachers.¹⁰ However, the panel members **recommend** integrating the complementary applications (video conferencing, assessments and also analytic measures) directly into the LMS, so that trainees and tutors don't need to navigate in between various applications.

3.4 Criterion: Data analysis system

Trainee data is primarily collected, stored, and managed on the ESN LMS. The platform supports the assignment of user roles, such as Guest, Trainee, Admin, and Faculty, to regulate access permissions and ensure compliance with the programme's privacy policy and applicable data protection regulations, including GDPR. Consent for data collection and usage is obtained from all trainees during the online application process, and no personal data is shared with third parties.

The programme relies on structured evaluation and assessment strategies like module-based self-evaluations completed by trainees, post-module evaluations, and clinical supervisor feedback based on Entrustable Professional Activities (EPA) scales.

For module-specific progress tracking, tutors maintain individual Google Sheets for their assigned trainee groups. These records capture progress through each module and live online session using the categories "not started," "in progress," "complete," and "on hold."

⁹ See also chapter 3.4

¹⁰ See also chapter 4.2

Tutors can also flag cases requiring additional support for follow-up. Access to these sheets is restricted to the respective tutor and the ESN MAS Programme Director, ensuring strict control. The sheets are not linked to or exported into ESN Campus. A planned system upgrade will integrate these tracking features directly into ESN Campus, streamlining analytics and progress monitoring.

Data collected through progress tracking and surveys inform tutors about trainee's needs and support their communication with trainees (e.g., targeted reminders and clarification of instructions). This contributes to curriculum reviews and pedagogical planning, as outlined in the ESN MAS Quality Handbook. Early use of this data has already supported adjustments to learning tasks and module instructions, enhancing the overall teaching and learning experience.

Qnome, an online platform for clinical studies and trials, is used to conduct a Europe-wide bench-marking survey of paediatricians and early-career neonatologists, including ESN MAS trainees. Survey data are collected anonymously and are not linked to ESN Campus or any identifiable trainee records. The survey is designed to collect Europe-wide core data on education in Neonatology with respect to a variety of items aiming to establish a reference data set and bench marking, e.g., self-assessment of knowledge, levels of confidence with Entrustable Professional Activities (EPAs) and numbers of procedures/examinations performed. Based on this, regular surveys are planned to help improve the ESN teaching platform and digital content delivery.

Currently, ESN Campus does not offer automated dashboards, customisable analytics views, or integration with external tools. Future platform developments will introduce native analytics features, providing progress dashboards, trend identification, and early detection of at-risk trainees.

Evaluation

The quality requirement is fulfilled. Due to the recent programme start and the manageable number of trainees, an automated data analysis system with dashboards is not yet implemented but planned to be integrated.¹¹ The ESN tutors use a (manual) data analysis system and the ESN Campus/platform offers sufficient technology or resources to process large amounts of data. The ESN ensures that the legal framework governing data protection is communicated and adhered to.

3.5 Criterion: Technical support for students

Trainees have access to technical support for all aspects of digital teaching and learning via multiple channels, including e-mail, the ESN Campus communication tools (chat, blog, forum), and an integrated two-level ticket system.¹² Support requests are handled as quickly as possible, with the informal target of responding within one working day.

¹¹ See also recommendation in chapter 5.3

¹² See chapter 3.1

The ESN MAS Programme Director provides assistance both for platform use and for general digital competencies, such as video-conferencing tools, file formats, and troubleshooting on the trainee's own device. If an issue cannot be resolved directly, it is escalated to platform developers via the two-level ticket process.

Although no formal trainee pre-assessment of digital skills is conducted, the fully online nature of the programme presumes a baseline proficiency. Any skill gaps become apparent through routine online activities (e.g., uploading assignments, participating in live sessions). Where difficulties arise, targeted support is provided through written step-by-step guides and one-to-one consultations.

Onboarding for new trainees includes both written materials and an introductory online meeting within each tutor group, ensuring that all participants can navigate the platform and use its core functions. Additional resources include written platform instructions and FAQs. A formal programme-wide kick-off event, which will also address technical topics, is in preparation for future trainee cohorts.

Evaluation

The quality requirement is fulfilled. Trainees can reach the technical support of the ESN via the ticket process or by email. Questions regarding digital teaching and the teaching platform are answered quickly. During the online assessment conference, trainees confirmed that they got quick help with technical issues. The ESN ensures that trainees are able to handle the technologies and tools.

Standard 4: Didactic design

4.1 Criterion: Digital didactic concept

The didactic concept of the MAS in Neonatology is grounded in its programme objectives and tailored to the specific needs of basic and advanced learners in neonatology. It aims for both pedagogical coherence and adaptability through a structured, evidence-informed educational design. The ESN Chairperson has co-authored and published several complementary scientific papers on content and education (in 2022, 2024, and 2025).

The programme is aligned with its overarching goals, which are defined as Entrustable Professional Activities (EPAs). These EPAs form the backbone of the curriculum and serve to operationalise competency-based learning. They place clinical decision-making at the centre of training and are accompanied by evaluation criteria for autonomy and responsibility in professional practice. Each module is structured around these objectives, ensuring that all learning content, activities, and assessments directly support the achievement of targeted professional competencies.

The programme is designed to meet the learning needs and clinical backgrounds of its target group. Each online module is guided by its own set of goals and learning outcomes, and the structure allows for adaptation based on regional and institutional contexts. The tutors, who are all practicing neonatologists, facilitate the contextual transfer of knowledge by considering local healthcare systems, organisational culture, and clinical environments.

Individual performance assessment is a key feature: each trainee works with an appointed clinical supervisor in their workplace, who supports not only the assessment of progress but also the improvement of clinical standards and internal training.

A mix of teaching and learning methodologies is employed to match the curricular content and competencies required as outlined in the scientific publication by the ESN board. These include:

- E-learning through the ESN Campus, with multimedia content and reading materials comprising latest knowledge in the field, including step-by-step clinical cases that simulate real-time decision-making in dynamic clinical scenarios and emphasise interprofessional collaboration.
- Small-group tutoring, with a strong emphasis on microteaching, cognitive task analysis, scaffolding, and transfer strategies.
- Peer learning in reflective or reciprocal formats, fostering attitude change, socialisation, and collaborative clinical reasoning.
- Webinars with moderated discussions, used for targeted expert knowledge transfer.
- Interprofessional training modules, promoting shared learning between physicians, mid-wives, nurses, and parents.

Through this methodologically diverse approach, teaching aligns with adult learning principles and the realities of complex clinical environments.

Evaluation

The quality requirement is fulfilled. The documentation of selected examples of digital teaching provides exemplary evidence that the ESN is capable of developing adequate concepts for digital teaching. The didactic concept with its high flexibility takes into account learner-centredness, addresses different learning types and takes into account the use of different digital methods that are aligned with the intended learning outcomes of the learning unit.

The panel members highlight that combining individual e-learning (case-based learning) with online tutor sessions and supervisor guided Entrustable Professional Activities (EPAs) is a sound didactic approach which looks promising for allowing practitioners to achieve theoretical as well as practical mastery. Specifically, the focus on workplace-learning is a strength of the programme. In addition, the panel members are impressed by the programme management's scientific publications about the programme's concept.

4.2 Criterion: Teaching methods

The ESN MAS programme employs a combination of synchronous and asynchronous teaching methods designed to align closely with its didactic concept and promote active learner engagement.

A representative module typically follows this sequence: Trainees are first informed about the up-coming topic for the tutor session. They then independently work through the asynchronous online module at their own pace, submitting their reflections, knowledge, experiences, and answers within designated fields on the ESN Campus platform.

Medical case stories unfold progressively within the modules, triggering the continuation of the scenario only after trainees submit responses, though the case trajectory is fixed. Practical clinical tasks incorporate simulated conversations, such as difficult parental consultations, with peer and supervisor feedback encouraged to foster reflective learning. Virtual patient cases and quizzes are integral parts of every module.

Tutors review and comment on these inputs to prepare for the live sessions. Meetings are scheduled via tools such as Doodle or WhatsApp polls, and held on videoconferencing platforms including Zoom, Microsoft Teams, or Google Meet. This structure makes it possible to form pan-European learning communities in which no two members, tutor or trainee, are based in the same country. The deliberate mix of national backgrounds fosters diverse perspectives, encourages cross-cultural exchange, and reflects the international spirit of neonatal care and research within the wider ESPR community.

In the synchronous tutor-led videoconferences approximately two units of the module (each module comprises three to seven learning units) are discussed interactively. These live meetings are designed to be interactive, and attendance as well as active participation is mandatory. Through encouraging social and peer learning trainees are enabled to deepen their understanding by sharing clinical experiences, discussing module content, and engaging with additional resources provided by the tutor.

The exchange of localised Standard Operating Procedures, practices, and guidelines forms a core part of tutor group activities, fostering an interactive and international learning

community. Group discussions, peer reviews, and shared reflections are regularly utilised, reinforcing critical thinking and collaborative skills.

Evaluation

The quality requirement is exceeded. The ESN uses innovative and creative methods in line with the didactic concept that enrich the learning experience and promote engagement and competence development.

The panel members highlight that the blended methodology perfectly suits the achievement of the learning objectives and the trainees' needs. Trainees are encouraged to take an active role in the learning process.

4.3 Criterion: Learning materials

The ESN MAS programme integrates a variety of digital media within its modules, including texts, videos, PDFs, and web links to external resources. Interactive elements such as quizzes, evolving medical case studies, checklists, and options for media uploads enrich the learning experience and promote independent study.

To ensure quality and coherence, every learning unit follows a standardised structure comprising learning objectives, knowledge content, case studies, practical tasks, and self-assessment components. Authors receive guidelines on content development, which are strictly aligned with the European Training Requirements (ETR) in Neonatology and the European Curriculum & Evaluation Grid for Training and Assessment in Neonatology. A dedicated ESN team (consisting of ESN Chairperson, ESN Production Officer, ESN Medical Didactics Officer, and ESN MAS Programme Director) thoroughly reviews and adjusts each module before release, with ongoing updates driven by feedback from trainees, tutors, and external experts.

The didactic alignment is carefully managed through frequent evaluations and content revisions, ensuring materials are complete, up-to-date, and tailored to the specific needs and the daily work of residents and early-career physicians. Accessibility checks and adjustments to digital formats are conducted systematically by the ESN team to accommodate diverse user needs.

Innovative components include gamified elements such as progressive case scenarios that unfold step-by-step and interactive practical tasks that simulate real clinical situations, fostering active engagement. The learning materials are designed with explicit consideration of the target group's professional context and learning preferences.

Trainees gain access to supplementary literature primarily through integrated PDFs of freely available articles and curated links to external databases and websites. These resources are accessible within the ESN Campus platform's modules and workspaces, providing seamless integration with core content.

Wherever feasible, the programme incorporates open-license or public-domain educational materials in order to promote free use and sharing.

Evaluation

For the learning materials that are finished and that the panel members had access to, the quality requirement is exceeded. Digital media are used in text, video and audio formats. The learning materials are technically well designed and reproduced. They are prepared in a user-friendly manner and encourage students to continue studying on their own. The learning materials are up-to-date and complete and correspond with the didactic concept. The study material is created centrally by module authors who are supported by clearly defined guidelines and information as to which teaching materials are to be created and in which digital form as content for a module. The tutors are provided with guidelines on how to use the LMS and on how to use and individualise the materials for their session. Tutors make regular use of the freedom to individualise materials by judging on their own if and when to use materials in class based on the needs of their trainee group.

Moreover, the learning materials contain innovative components and are oriented towards the didactic preferences of the trainees. The ESN provides appropriate online access to literature. The institution partially produces educational materials that appear under an open licence and can be used freely (e.g., the podcast “Neonatology Now” mentioned in chapter 1.2 and the Lecture Series “Perspectives on Effective Neonatology”).

4.4 Criterion: Forms of examination

Examination formats in the ESN MAS programme are aligned with the European Training Requirements (ETR) in Neonatology and the European Curriculum & Evaluation Grid for Training and Assessment in Neonatology. These frameworks specify competencies, skills, and assessment methods for neonatology training. The curriculum is organised into 13 modules corresponding to 13 Entrustable Professional Activities (EPAs) enabling competence-oriented, practice-based evaluation throughout the programme.¹³

The EPA framework does currently not take competences as a starting point, but rather a task or action from everyday medical practice. This allows the EPA system to assess not one, but several competences that make up a situation and consequently, is even closer to real-life scenarios.

The EPA scaling framework:

- Level 1: Trusted to observe only
- Level 2: Trusted to execute with direct supervision and coaching
- Level 3: Trusted to execute with indirect supervision and discussion of information conveyed for most simple and some complex cases
- Level 4: Trusted to execute with indirect supervision and may require discussion of information conveyed but only for selected complex cases
- Level 5: Trusted to execute without supervision

Assessment does not rely on classical exams. Instead, trainees complete diverse tasks embedded in the online modules, including knowledge questions, authentic clinical case analyses, practical hospital-based assignments, discussion topics, and questions on local

¹³ See Parker, T. A., Guiton, G. & Jones, M. D. Choosing entrustable professional activities for neonatology: a Delphi study. *J. Perinat.* 37, 1335–1340 (2017).

guidelines. Submission is typically via the ESN Campus platform through written texts and media uploads. Trainee progress and proficiency are measured by the quality of submitted work, active participation during live online tutor sessions (including online presentations), and ongoing engagement with reflective tasks and digital learning diaries.

In addition, at the end of the programme, trainees must complete a master's thesis based on a clinical transfer task or an independent quality enhancement project within their clinical setting. The master's thesis must be submitted within six months of completing the last ESN MAS module and shall be assessed by the tutor and another reviewer appointed by the examination board.

Plagiarism rules are defined as part of the ESN MAS Study and Examination regulations, which trainees receive via the ESN Campus workspace or the programme website. These guidelines are communicated transparently to all trainees from the outset, ensuring awareness of academic standards and responsible conduct for digital work.

Examination formats are subject to ongoing review and refinement, with tutors providing structured feedback after each module and contributing to programme development. Plans for future innovation include a continent-wide hybrid final examination with both online and in-person components such as “Objective Structured Clinical Examination” (OSCE-exams).

Authenticity and integrity are assured through continuous tutor feedback, live interaction in online sessions, the submission of personal work, and direct oversight from clinical supervisors at trainees' local hospitals.

Evaluation

The quality requirement is exceeded. The forms of examination are based on the didactic concept and are suitable for determining the achievement of the learning outcomes as well as the identity of the examinees. The ESN uses competence-oriented online and offline examination formats (e.g., questions, case analyses, practical assignments, discussion topics, and questions on local guidelines). The ESN has established plagiarism rules and regulations regarding the conduct of digital examinations. Students are given transparent information about these regulations. The panel members also discussed the availability of AI tools with the programme management with regards to the Master thesis. The ESN representatives are aware of those tools and have investigated AI detection software. However, as the programme is highly practice-oriented and trainees are required to hand in tasks and demonstrate their competencies throughout the programme, the risk of trainees plagiarising or misusing AI tools in the programme is considerably low.

Furthermore, the ESN applies different forms of digital examination and uses these in the further development of established examination scenarios. The panel members note that proctoring is not applicable for the programme,¹⁴ because as described above, online assignments throughout the programme are very practical and case-oriented (embedded in the local contexts of the trainees' respective hospitals), which naturally prevents cheating. Other assignments (EPAs) trainees need to pass in each module are facilitated at the trainees' residency hospital, supervised and evaluated by their local supervisor.

¹⁴ Criterion 4.4 also states “and employs modern proctoring.”

4.5 Criterion: Academic support for students

Academic support for trainees in the ESN MAS programme is provided primarily through dedicated tutors, with each tutor responsible for a small group (typically five to six trainees). Group sizes are currently limited to ensure optimal support; as the programme expands, additional tutors will be recruited or groups subdivided to maintain this standard. Support is delivered via the ESN Campus, where each tutor group maintains a private workspace with blog, content management, and both group and individual chat functions. Communication can also occur through email, phone, and video conferencing (Zoom, MS Teams, Google Meet), according to participant preference. At least once annually, trainees and tutors can meet in person at the ESPR congress (jENS or CEPAS) for networking and academic exchange.

Clear guidelines for respectful behaviour, professional communication, and academic integrity – including netiquette – are defined in Section 9 of the ESN MAS Study Regulation and are accessible to all trainees. Response times for questions and support are targeted at one working day wherever possible.

Formative assessment occurs throughout each module: trainees receive ongoing feedback via the chat function and direct comments from tutors on submitted answers. Live online tutor sessions also provide opportunities for discussion, clarification, and peer learning. Summative evaluation is provided at the end of each module, with overall assessment communicated to trainees upon completion.

Beyond regular tutor sessions, trainees can receive individualised feedback on their assignments directly through the platform’s chat function. All communication and assessment records are retained on ESN Campus for transparency and future reference. Trainees at risk of falling behind are proactively contacted by tutors or the ESN MAS Programme Director and offered targeted support.

Additional academic advice is available from the Programme Director, who can refer students to external specialists (e.g., the ESPR Early Career Investigators Section) or arrange access to live sessions with clinical experts on specific topics, as planned for future program development.

Evaluation

The quality requirement is exceeded. The ESN supports communication between trainees and tutors and draws up regulations for this purpose (e.g., guidelines for respectful behaviour, professional communication, and academic integrity including netiquette, feedback times). The panel members highlight the extensive attention trainees get from their various contact persons, primarily their tutors, but also their local supervisors, and the ESN Programme Director.

Standard 5: Quality assurance

5.1 Criterion: Integration into the quality management system

The ESN MAS programme integrates digital teaching firmly into its comprehensive quality assurance (QA) system, as outlined in the ESN MAS Quality Handbook. The QA system defines roles, responsibilities, and processes to ensure systematic review and continuous improvement of teaching and administration.

The quality assurance (QA) cycle operates as follows: Feedback is collected continuously from trainees, tutors, and, in planned future cycles, from external stakeholders such as alumni and employers. This feedback is analysed by the Quality Group (Q-Group), which coordinates QA activities, formulates improvement measures, and involves representatives from all stakeholder groups. The ESN MAS Programme Director oversees the implementation and monitoring of corrective actions in consultation with the ESN Board, which holds strategic decision-making authority. Outcomes and changes are communicated transparently back to all stakeholders, maintaining a closed, effective feedback loop.

All teaching, feedback, and administrative processes are digitally documented, including module evaluations, ticket system reports, and unstructured feedback. While there is currently no centralised digital QA dashboard, the QA team ensures coherent documentation and linkage between teaching quality assurance and administrative quality processes.

Trainee and tutor participation is central: after each module, all trainees and tutors complete detailed feedback questionnaires that inform analysis and enhancement activities. Formal involvement of external stakeholders like alumni, employers and patient organisations (e.g., Global Foundation For The Care Of Newborn Infants (GFCNI)) is still in development; plans include alumni surveys, employer feedback mechanisms, and stakeholder interviews to be embedded in future QA cycles.

The QA system pursues overarching quality objectives such as learner success, platform usability and acceptance, feedback response rates, and technical system availability. Key performance indicators primarily include module evaluation results and support ticket analytics. The QA process follows a structured cycle of data collection, analysis, prioritisation, implementation of improvements, and effectiveness monitoring, with the ESN MAS Programme Director responsible for operational and strategic execution.

Evaluation

The quality requirement is fulfilled. The quality management system includes instruments and procedures for the systematic review of teaching. Findings from target/actual comparisons are implemented consistently. The processes for quality assurance in teaching and administration are digitalised and linked.

The ESN Quality Handbook anchors QA policies and processes. However, the users of this Handbook would benefit from additional process diagrams and flow charts that exhibit a closed loop QA cycle. Therefore, the panel members **recommend** creating a process diagram for the Quality Handbook for better overview and transparency of QA processes.

5.2 Criterion: Quality assurance of teaching

The MAS in Neonatology maintains a quality assurance system that aims for continuous improvement and programme effectiveness. At its core, the system focuses on using resources efficiently, while identifying and addressing areas for development. Key features include systematic evaluation of the

- Curriculum (structure, content relevance, academic depth),
- Teaching quality (tutor engagement, learning effectiveness, pedagogical methods),
- Training resources (learning platform, materials, workload balance),
- Training outcomes (competency development, clinical applicability, learner satisfaction).

Regular feedback is gathered through structured evaluations from:

- Trainees (at module-end and at graduation),
- Tutors (via reflective practice and debriefings),
- In the future: external stakeholders such as alumni and employers.

The surveys for trainees and graduates assess:

- Clarity and relevance of content,
- Learning effectiveness,
- Tutor support,
- Usability of the learning platform,
- Workload balance.

A dedicated Quality Group (Q-Group) comprising trainees, tutors, authors, and administrators coordinates the quality processes. They analyse evaluation data, identify problems, and recommend actions. The ESN MAS Programme Director and ESN Board hold decision-making authority and ensure implementation of changes. Tutors also play a proactive role in quality assurance as both educators and evaluators.

Tutors reflect on their experience and participate in structured feedback processes, including:

- Functionality of modules,
- Usability of resources,
- Group dynamics,
- Educational outcomes.

At the end of each module, tutors join meta-evaluation debriefings, led by the MAS Programme Director, integrating their insights with survey data.

Additional elements:

- Direct observation by the MAS Programme Director,
- Ongoing mentoring and feedback from the ESN Chairperson and senior officers,
- Tutor selection and training processes are reviewed if evaluation identifies performance gaps.

As the programme is in its early stages, no formal graduate or alumni feedback mechanisms currently exist as no trainees have completed the programme yet. The quality

assurance process and workflows, including feedback gathering and implementation of improvements, are documented in the ESN MAS Quality Handbook.

Transparency is key to the quality assurance system, where all processes remain open, inclusive, and accountable. Evaluation results, along with any subsequent actions taken, are communicated through internal newsletters and other established channels. Stakeholders are kept informed about both planned and implemented changes. In addition, opportunities for informal feedback are actively encouraged, creating a culture in which open dialogue and continuous improvement are welcomed.

Evaluation

The quality requirement is fulfilled. The special features of digital teaching have been defined and taken into account accordingly in the quality management system. The processes and procedures used are capable of systematically ensuring the quality of digital teaching. However, besides a QA process diagram,¹⁵ the panel members additionally expect the Quality Handbook to include: processes of hiring and onboarding new staff, requirements for staff's digital competencies, a description of the role of authors as producers of the learning material, and the description of processes to keep learning material up-to-date etc.). Therefore, the panel members **recommend** completing the documentation of QA processes and procedures.

The media competence of the teachers and the didactic design are subject to continuous monitoring. Quality assurance includes feedback from trainees. In the future, the ESN could benefit from a regular pedagogical quality report summarising evaluation data, tutor feedback and follow-up measures to enhance transparency and improvement. The focus on pedagogy in such a report would underline the programme's unique educational model¹⁶ and the benefits for trainees, in turn highlighting the contribution to the field of neonatology.

5.3 Criterion: Learning Analytics

The ESN MAS in Neonatology employs a structured and transparent approach to learning analytics to continuously monitor student learning outcomes, including progress, performance, and potential risks. The learning objectives are defined and communicated to trainees in the curriculum, examination regulations and study regulations. Data is collected systematically at multiple points, including module-end evaluations, graduation assessments, and tutor reflections. The scope includes all trainees enrolled in the programme, with measures in place to maximise participation and completeness of data.

Collected data are analysed using scientific methods aligned with current research in medical education and adult learning. The Q-Group coordinates the evaluation process, using standardised, institution-wide instruments for analysis, including surveys, structured debriefings, and direct observations. Trends from both current and historical data will be

¹⁵ See panel members' recommendation in chapter 5.1

¹⁶ See also chapters 1.1 and 4.1

examined to identify areas for programme enhancement, monitor learning progression, and mitigate risks such as knowledge gaps or incomplete competencies.

Findings from learning analytics will be interpreted and actively used to guide decision-making at multiple levels:

- Personalising learning experiences for trainees where possible.
- Initiating targeted interventions to improve module content, teaching methods, and resource allocation.
- Supporting decisions regarding tutor development and programme refinements.
- Contributing to broader research questions and advancing the quality of neonatal education.

The ESN processes learning analytics in a scientifically rigorous manner, with results feeding back into the continuous quality assurance cycle. Data insights will be used not only to enhance the programme internally but also to contribute to the broader evidence base in neonatal education through publications and dissemination of best practices.

Evaluation

The quality requirement is fulfilled considering the current scope of the programme. Learning analytics objectives, scope and processes of data collection, analysis and evaluation are clearly defined and communicated transparently to trainees. The analysis method takes into account relevant and current research on learning analytics and is scientifically plausible. Data is analysed manually by the tutors using transparent, coordinated instruments. Findings are not only interpreted but used to react to problems (e.g., with regards to learning progress, dropout rates). To prepare for future growth the panel members underline the ESN's aspiration to introduce tutor dashboards with advanced learning analytics that substitute the manual analysis of tutor sheets.¹⁷ In support of ESN's plans, the panel members **recommend** supporting tutors with a learning analytics dashboard when scaling up the programme.

5.4 Criterion: Quality assurance of technology

The technical infrastructure supporting the ESN MAS is continuously monitored and maintained primarily by the external platform developers at ISYFLOW, who implement system adjustments and improvements. While specific monitoring processes such as health checks or performance metrics are managed by the developer team, ultimate responsibility for quality assurance of the technical infrastructure lies with the ESN MAS Programme Director.

Formal quality assurance includes structured feedback cycles conducted after the completion of each module. Both trainees and tutors complete detailed questionnaires assessing usability, functionality, and overall satisfaction with the platform and digital tools. This feedback, combined with issue reports submitted via the two-level ticket system, informs continuous improvements.

¹⁷ See also chapter 3.4

Quality assurance is further supported by collaboration among key personnel including the ESN Chairperson (Professor, Head of Neonatology Department), ESN Production Officer (Senior Physician, PD Dr. med.), ESN Medical Didactics Officer (Professor, IT in Education Specialist, medical background), the ESN MAS Programme Director (M.A. in communication and adult education), and the platform developers. This multidisciplinary team regularly reviews learning materials and the technical learning environment for optimisation potential. Some modules have additionally been evaluated by external domain experts to ensure content and technical quality.

Evaluation

The quality requirement is fulfilled. The technical infrastructure in this case is the learning platform¹⁸ that is externally developed and continuously monitored by ISYFLOW. The cooperation runs smoothly. Furthermore, the learning platform is also subject to continuous monitoring at the ESN. Quality assurance includes feedback from trainees and the teaching staff.

5.5 Criterion: Continuous improvement

The ESN MAS in Neonatology maintains a structured and proactive approach to continuous improvement, including digital teaching and learning resources. Regular measures will be implemented evolving the programme in line with technical, pedagogical, and clinical developments. This includes systematic evaluation of the digital platform and online learning materials through trainee surveys, tutor feedback, and direct observation by programme management.

Internal stakeholders, including trainees, tutors, administrative staff, and the ESN Board, are actively encouraged to propose improvements. Suggestions will be collected through structured feedback channels, informal dialogue, and debriefings, and will be analysed by the Q-Group. Identified improvements will be prioritised and implemented by the ESN MAS Programme Director, with outcomes communicated back to stakeholders.

Evaluation

The quality requirement is fulfilled. The panel members acknowledge that the programme only started recently. However, interviews with trainees and tutors confirmed that regular feedback mechanisms exist and issues reported lead to quick reactions and effective measures by the responsible persons. This way, problems identified have been dealt with and solved quickly. The continuous improvement measures have built trust in the well-functioning of the programme and its QA mechanisms. Internal stakeholders have a good opportunity to proactively contribute potential for improvement.

¹⁸ See chapter 3.2

Quality Profile

Institution: European School of Neonatology (ESN) within the European Society for Paediatric Research (ESPR)

Continuing Education Programme: Master of Advanced Studies (MAS) in Neonatology

	Quality requirement exceeded:	Quality requirement fulfilled:
1. Standard: Strategy for the digitalisation of the teaching and learning portfolio		
1.1	Criterion: Objectives	X
1.2	Criterion: Implementation of the strategy	X
1.3	Criterion: Review and measures	X
1.4	Criterion: Future orientation	X
2. Standard: Staff		
2.1	Criterion: Staffing	X
2.2	Criterion: Further qualification	X
2.3	Criterion: Support	X
2.4	Criterion: Knowledge management	X
3. Standard: Technology		
3.1	Criterion: Technical organisational unit	X
3.2	Criterion: Technical infrastructure	X
3.3	Criterion: Teaching and learning platform	X
3.4	Criterion: Data analysis system	X
3.5	Criterion: Technical support for students	X
4. Standard: Didactic design		
4.1	Criterion: Digital didactic concept	X
4.2	Criterion: Teaching methods	X
4.3	Criterion: Learning materials	X
4.4	Criterion: Forms of examination	X
4.5	Criterion: Academic support for students	X
5. Standard: Quality assurance		
5.1	Criterion: Integration into the quality management system	X
5.2	Criterion: Quality assurance of teaching	X
5.3	Criterion: Learning Analytics	X
5.4	Criterion: Quality assurance of technology	X
5.5	Criterion: Continuous improvement	X