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**Erasmus+ programme "Reforming teacher education towards
green and digital transition in Mongolia" project - RETEACH**

STRATEGIC DIRECTIONS FOR TRANSITIONING TEACHER EDUCATION TOWARDS GREEN AND DIGITAL COMPETENCIES (2027-2032)

MEDIUM TERM POLICY DOCUMENT CONCEPT

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LIST OF ABBREVIATIONS

GAE	General Authority for Education
TDC	Teacher Development Center
MNCEA	Mongolian National Center for Education Accreditation
ME	Ministry of Education
HE	Higher Education
HEI	Higher Education Institution
GES	General Education School
U	University
ICT	Information and Communication Technology
MNUE	Mongolian National University of Education
NUM	National University of Mongolia
UN	United Nations
OU	Otgontenger University
NSO	National Statistics Office
ESD	Education for Sustainable Development
MEDLE	Mongolian Education Digital Learning Environment (Medle.mn)
STE(A)M	Science, Technology, Engineering, (Arts), and Mathematics
GreenComp	EU Green Competence Framework
DigCompEdu	Digital Competence Framework for Educators



GLOSSARY

GLOSSARY		EXPLANATION	
Accreditation of an education or training programme	Боловсрол болон сургалтын хөтөлбөрийн магадлан итгэмжлэл	Process of quality assurance through which a programme of education or training is officially recognised and approved by the relevant legislative or professional authorities following assessment against predetermined standards. [Ed: the same definition applies for accreditation of education or training providers, learning outcomes, etc.]	Боловсрол, сургалтын хөтөлбөрийг урьдчилан тогтоосон стандартын дагуу үнэлсний дараа холбогдох хууль тогтоомж, мэргэжлийн байгууллага албан ёсоор хүлээн зөвшөөрч, баталгаажуулах чанарын баталгаажуулалтын үйл явц. (Боловсролын магадлан итгэмжлэлд ижил тодорхойлолт хамаарна. Сургалт зохион байгуулагч, сургалтын үр дүн гэх мэт)
Climate Literacy	Уур амьсгалын тухай мэдлэг	The knowledge, skills, and attitudes needed to understand climate change and its implications for the environment and society.	Ирээдүйн багш нарыг боловсролын тодорхой түвшинд албан ёсоор мэргэшүүлэхэд сургах зорилготой хүлээн зөвшөөрөгдсөн, зохион байгуулагдсан, хувийн болон төрийн боловсролын сургалтын хөтөлбөрүүд. Төгсөгчид төрөөс хүлээн зөвшөөрөгдсөн багшийн мэргэшлийг эзэмшдэг. Албан ёсоор хүлээн зөвшөөрөгдсөн сургалтын стандартыг хангаагүй, багшийн мэргэжилтэй зэрэгцэн магадлан итгэмжлэл авахын тулд багш бэлтгэх курст хамрагдсан багш нарыг урьдчилсан сургалтад хамруулахгүй.
Digital Pedagogy	Дижитал сурган хүмүүжүүлэх ухаан	The use of digital tools and technologies to enhance teaching, learning, and assessment.	Боловсрол, сургалтын явцад суралцагч бүрийн хэрэгцээнд тохирсон нөөц, үйл ажиллагаа явуулах замаар бүх суралцагчдад шударга хандах, тэгш боломжийг хангах
Digital Citizenship	Дижитал иргэншил	The responsible and ethical use of digital technology, including the understanding of issues like privacy, security, and digital rights.	Багш нарын мэргэшил, ур чадварыг дээшлүүлэх албан ёсны багшлах үүрэгтэй зэрэгцсэн сургалт юм. Мэргэжил дээшлүүлэх сургалт нь мэргэжлийн ур чадвараа хадгалах, дээшлүүлэх, албан ёсны мэргэжил дээшлүүлэх үйл ажиллагаатай холбоотой заавал байх эсвэл ур чадвараа дээшлүүлэх зорилгоор заавал хийх боломжтой.



Digital Competence	Дижитал чадамж	A set of skills, knowledge, and attitudes related to using digital technology to solve problems, communicate, collaborate, and produce content.	Боловсрол, сургалтын хөтөлбөрийг урьдчилан тогтоосон стандартын дагуу үнэлсний дараа холбогдох хууль тогтоомж, мэргэжлийн байгууллага албан ёсоор хүлээн зөвшөөрч, баталгаажуулах чанарын баталгаажуулалтын үйл явц. (Боловсролын магадлан итгэмжлэлд ижил тодорхойлолт хамаарна. Сургалт зохион байгуулагч, сургалтын үр дүн гэх мэт)
DigCompete	Багшийн дижитал чадамжийн хүрээ	The European Framework for Digital Competence of Educators, which outlines digital skills required for effective teaching and learning in the digital era.	Боловсрол, сургалтын салбарт сургалт нь (хөтөлбөрийн агуулга, сургалтын төлөвлөгөө, сургалтын үр дүнг үнэлэх, баталгаажуулах гэх мэт) оролцогч талуудын хүлээгдэж буй чанарын шаардлагад нийцэж байгаа эсэхийг баталгаажуулах аливаа үйл ажиллагаа
Equity	Эрх тэгш байдал	In education and training, fair treatment of all learners through provision of resources and actions adapted to individual learner needs, to ensure equal opportunities.	Боловсрол, сургалтын явцад суралцагч бүрийн хэрэгцээнд тохирсон нөөц, үйл ажиллагаа явуулах замаар бүх суралцагчдад шударга хандах, тэгш боломжийг хангах
Green Education	Ногоон боловсрол	Teaching and learning focused on sustainability, climate change, and environmental responsibility.	Боловсрол, сургалтын салбарт сургалт нь (хөтөлбөрийн агуулга, сургалтын төлөвлөгөө, сургалтын үр дүнг үнэлэх, баталгаажуулах гэх мэт) оролцогч талуудын хүлээгдэж буй чанарын шаардлагад нийцэж байгаа эсэхийг баталгаажуулах аливаа үйл ажиллагаа
GreenComp	Тогтвортой хөгжлийн чадамжийн greencomp хүрээ	The European sustainability competence framework that defines competences for addressing climate change and sustainability in various educational contexts.	Эдийн засагт ур чадварыг хөгжүүлэх, ашиглахад чиглэсэн институт, оролцогч талууд, төрийн бодлого, хууль тогтоомж, заалтуудын багц
Inquiry-Based Learning	Судалгаанд суурилсан сургалт	A student-centered approach where learners investigate real-world problems through questioning, research, and collaborative solutions.	Мэргэшсэн багш, сургагч багшаар эсвэл тухайн чиглэлээр суралцагчдыг ажлын орчинд дагалдан ажилладаг (заавал багш, сургагч багш) мэргэжлээр дадлага хийдэг багш, сургалтын боловсон хүчинд зориулсан онол болон практик сургалт



In-service [teacher] training	Мэргэжил дээшлүүлэх (багш) сургалт	Training that is concurrent to official teaching responsibilities to improve teachers' qualifications and skills. In-service training can be compulsory relating to official professional development activities to maintain or upgrade professional qualifications or it can also be optional with the sole purpose to improve skills.	Багш нарын мэргэшил, ур чадварыг дээшлүүлэх албан ёсны багшлах үүрэгтэй зэрэгцсэн сургалт юм. Мэргэжил дээшлүүлэх сургалт нь мэргэжлийн ур чадвараа хадгалах, дээшлүүлэх, албан ёсны мэргэжил дээшлүүлэх үйл ажиллагаатай холбоотой заавал байх эсвэл ур чадвараа дээшлүүлэх зорилгоор заавал хийх боломжтой.
Pre-service teacher training	Багшийн бэлтгэлийн өмнөх сургалт	Recognised and organised, private and public educational programmes designed to train future teachers to formally enter the profession at a specified level of education. Graduates receive a government recognised teaching qualification. Pre-service training does not cover teachers who do not meet officially recognised training standards and are enrolled in a teacher training course to earn accreditation concurrent to their work as a teacher.	Ирээдүйн багш нарыг боловсролын тодорхой түвшинд албан ёсоор мэргэшүүлэхэд сургах зорилготой хүлээн зөвшөөрөгдсөн, зохион байгуулагдсан, хувийн болон төрийн боловсролын сургалтын хөтөлбөрүүд. Төгсөгчид төрөөс хүлээн зөвшөөрөгдсөн багшийн мэргэшлийг эзэмшдэг. Албан ёсоор хүлээн зөвшөөрөгдсөн сургалтын стандартыг хангаагүй, багшийн мэргэжилтэй зэрэгцэн магадлан итгэмжлэл авахын тулд багш бэлтгэх курст хамрагдсан багш нарыг урьдчилсан сургалтад хамруулахгүй.
Sustainability Competence	Тогтвортой хөгжлийн чадамж	The ability to understand, evaluate, and act on environmental, social, and economic challenges related to sustainability.	Боловсролын үйл ажиллагааны эрх зүйн бүтэц, санхүүгийн эх үүсвэрийг тодорхойлох хууль боловсруулах журам
Skills management system / competence management system	Ур чадварын удирдлагын систем / чадамжийн удирдлагын систем	Set of institutions and stakeholders, public policies, laws and provisions that work for the development and use of skills in the economy.	Эдийн засагт ур чадварыг хөгжүүлэх, ашиглахад чиглэсэн институт, оролцогч талууд, төрийн бодлого, хууль тогтоомж, заалтуудын багц ¹
Teacher education policy	Багшийн боловсролын бодлого	Law-making procedure of defining the legal structure and provision of financial resources of how education functions	Боловсролын үйл ажиллагааны эрх зүйн бүтэц, санхүүгийн эх үүсвэрийг тодорхойлох хууль боловсруулах журам
Training of		Theoretical or practical	Мэргэшсэн багш, сургагч багшаар

1 G. Biesta et al. (2021). Teacher education policy: part of the solution or part of the problem?. Taylor & Francis, <https://doi.org/10.1080/1359866X.2021.1992926>, https://www.researchgate.net/publication/356549617_Teacher_education_policy_part_of_the_solution_or_part_of_the_problem



teachers and trainers	Багш болон сургагч багш нарын сургалт	training for teaching and training personnel, either practising as professional teachers or trainers or as professionals in a given field who accompany trainees in their work environment (occasional teachers or trainers).	эсвэл тухайн чиглэлээр суралцагчдыг ажлын орчинд дагалдан ажилладаг (заавал багш, сургагч багш) мэргэжлээр дадлага хийдэг багш, сургалтын боловсон хүчинд зориулсан онол болон практик сургалт
Quality assurance	Чанарын баталгаажуулалт	In education and training, any activity implemented to ensure that education and training (content of programmes, curricula, assessment and validation of learning outcomes, etc.) meet the quality requirements expected by stakeholders.	Боловсрол, сургалтын салбарт сургалт нь (хөтөлбөрийн агуулга, сургалтын төлөвлөгөө, сургалтын үр дүнг үнэлэх, баталгаажуулах гэх мэт) оролцогч талуудын хүлээгдэж буй чанарын шаардлагад нийцэж байгаа эсэхийг баталгаажуулах аливаа үйл ажиллагаа



INTRODUCTION

The teacher education system in Mongolia needs to be reformed in response to rapid social, technological, and economic changes, as well as the global green and digital transitions. This transformation, occurring across all levels including curriculum content, teaching methodologies, the learning environment, and professional development for teachers requires a comprehensive policy renewal to enhance the quality, accessibility, and coherence of teacher education.

The RETEACH project, supported by the European Union's Erasmus+ programme, aims to define new directions for teacher education in Mongolia, design a model of teacher education based on green and digital competences, and advance related national-level policy documents.

Within the project, the primary objective of this document is to adapt the European Union's green and digital oriented teacher education policy directions, best practices, and innovative approaches to the Mongolian context, and to develop a vision and example of new policies to be implemented during 2027–2032.

The green and digital transformation in education is not merely a technological change; it is a strategic objective to cultivate foundational competences, values, and attitudes in future citizens. Therefore, teacher education must shift toward a new paradigm that prepares educators who understand and apply sustainable development values, work effectively in digital environments, employ modern teaching methodologies, and drive innovation.

This policy document outlines the main directions for professional development of teachers, curriculum reform, governance systems, quality of learning environments, and collaboration between schools and universities in Mongolia. It also sets out medium and long-term objectives and action plans to strengthen teacher preparation and professional development systems, as well as to enhance the green and digital competences of educational institutions.

Based on the collaboration of the European Union, national partner organizations, and education policymakers, this document seeks to elevate Mongolia's teacher education system to a new level, serving as a bridge for sustainable, inclusive, and innovation-driven development.



SECTION I. EUROPEAN UNION'S POLICIES ON GREEN AND DIGITAL TRANSITION IN TEACHER EDUCATION

In the European Union (EU), teacher education is regarded as a strategic sector for fostering sustainable development, digital transformation, and a knowledge-based society. The two main transitions shaping the EU's development agenda on green transition and digital transition are embedded in main policy documents such as the European Green Deal, the Digital Education Action Plan (2021–2027), the European Education Area 2030, and the European Skills Agenda.

Teacher education institutions (TEIs) play a central role in successfully implementing these transitions, as teachers are responsible for developing future citizens' knowledge of sustainable development, digital competence, problem-solving skills, values, and attitudes. Therefore, reforming and enhancing the EU's teacher education system is considered fundamental to achieving successful green and digital transitions.

This section integrates the EU's green and digital transition policy framework and draws on information from the RETEACH project's "European Teacher Education Policy and Practices" training package to provide a comprehensive understanding of emerging trends in teacher education.

The European Green Transition and Its Impact on Teacher Education

The European Green Deal and Education: The European Green Deal (2019) is a strategic foundational document aiming for carbon neutrality in the EU by 2050. While promoting wide-ranging changes across environmental, economic, and social sectors, it emphasizes the crucial role of education in integrating knowledge, skills, and attitudes for sustainable development at all levels of education.² Related policies, such as the Biodiversity Strategy, the "Fit for 55" package, and the Circular Economy Action Plan, reinforce the need to embed green knowledge, environmental education, and climate change awareness into the education system.

Council Recommendation on "Learning for the Green Transition and Sustainable Development" (2022)³

This recommendation is the most important policy document for the EU-wide integration of education for sustainable development. It outlines the following key points:

- **Incorporating Sustainable Development Competences into Teacher Education Programs:** Sustainable development knowledge, attitudes, and skills should be integrated into both initial teacher education and continuous professional development through learning objectives, practical activities, lesson coherence, and assessment systems.

² European Commission, The European Green Deal, Brussels, 11.12.2019, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN>

³ GreenComp: the European sustainability competence framework, https://joint-research-centre.ec.europa.eu/greencomp-european-sustainability-competence-framework_en



- **Enhancing Teacher Educators' Competences:** Many teacher educators lack the necessary knowledge in sustainable development; the recommendation emphasizes the need for systematic support for their professional development.
- **Becoming an “Institutional Model” for Sustainable Development:** Educational institutions should serve as examples of sustainable development through their campus management, policies, and collaborative practices.
- **Improving Professional Development Programs:** Sustainable development goals and knowledge should be delivered to teachers in a sustainable and accessible manner through continuous professional development in teacher education.
- **Methodological Innovation:** The EU identifies inquiry-based learning, experiential learning, and outdoor learning as foundational pedagogical approaches for education for sustainable development, aimed at enhancing learners' problem-solving skills, hands-on experience, and environmental understanding.⁴

GreenComp – EU Framework for Sustainable Development Competences

GreenComp (2022) is a common standard that defines “what to teach and which competences to develop” in education for sustainable development. The framework categorizes 12 competences into four areas:

- Valuing sustainable development
- Systems thinking
- Futures thinking
- Taking action⁵

GreenComp is widely used in teacher education for curriculum development, assessment, organizing continuous professional development, and designing short-term certification programs.

European Digital Transition and Teacher Education

The Digital Education Action Plan (DEAP) 2021–2027 sets two main objectives:

1. **Creating a high-quality digital education ecosystem:**
 - Digital infrastructure
 - Connectivity, platforms, and resources
 - Quality assurance for online education
2. **Developing teachers' and learners' digital competences:**
 - Foundations of digital knowledge
 - Digital pedagogy
 - Digital assessment methods

⁴ EU, Council Recommendation of 16 June 2022 on Learning for the green Transition and Sustainable Development 2022/C 243/01, [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022H0627\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022H0627(01))

⁵ Bianchi Guida, Pisiotis Ulrike, Cabrera Giraldez Marcelino, GreenComp: The European sustainability competence framework, 2022, <https://publications.jrc.ec.europa.eu/repository/handle/JRC128040>



- AI, VR/AR, and robotics
- Cybersecurity and data ethics⁶

This framework highlights the need for digital accessibility and equity, particularly in light of lessons learned from the COVID-19 pandemic.

DigCompEdu – EU Framework for Teachers’ Digital Competences

This framework defines teachers’ digital competences across six areas and 22 specific competences:

1. Professional engagement
2. Digital resources
3. Teaching and learning with digital technologies
4. Assessment with digital tools
5. Supporting learners
6. Developing learners’ digital competences⁷

DigCompEdu is widely applied in teacher education program reforms, continuous professional development, assessment, and evaluating teacher educators’ digital competences.

SELFIE and SELFIE for TEACHERS

SELFIE assesses an institution’s digital readiness, while SELFIE for TEACHERS evaluates teachers’ digital competences. Both are extensively used in continuous professional development for teachers.

Digital Decade 2030

The Digital Decade 2030 is the EU’s official digital strategy and policy framework, adopted by the European Commission in 2021, setting legally binding targets and indicators for digital development across Europe by 2030.⁸

Teacher education programs are expected to contribute to:

- AI and data literacy
- Cybersecurity
- Digital citizenship education
- National strategies for digital skills

“Twin Transition”: Integrating Green and Digital Competences

⁶European Commission, Digital Education Action Plan 2021-2027, https://education.ec.europa.eu/sites/default/files/document-library-docs/deap-communication-sept2020_en.pdf

⁷ European Commission, Christine Redecker, Digital Competence Framework for Educators (DigCompEdu), 2017, EUR 28775 EN, doi:10.2760/159770, <https://publications.jrc.ec.europa.eu/repository/handle/JRC107466>

⁸ European Commission, Digital Decade 2030, 2021, <https://digital-strategy.ec.europa.eu/en/policies/europes-digital-decade>



The concept of the “Combined Transition” combines the European Green Deal, DEAP 2021–2027, Digital Decade Policy Programme 2030, the Council Recommendation on the Green Transition (2022), and various EU reports and strategic policy directions. It emphasizes the integration of green and digital competences in teacher education, including:⁹

- Climate simulations
- Environmental research using data
- AI-supported inquiry-based learning
- International virtual projects
- Digital assessment of green competences

Pedagogical Approaches Highlighted in the EU Training Package

- **Inquiry-Based Learning:** Learners explore questions and problems, guided by their interests. Example: National Technical University of Athens uses AI-supported dialogue and avatars to facilitate inquiry-based learning in school settings.
- **Experiential Learning:** Learning through real tasks, research, and laboratory work. Example: University of Lorraine in France uses simulation-based role-playing for professional problem-solving.
- **Outdoor Learning:** Learning in real-world contexts, connecting with nature and local environments. Example: Udeskole in Denmark uses tablets and sensors for field-based environmental studies.
- **Project-Based Learning:** Developing skills through comprehensive projects. Example: Transilvania University of Braşov in Romania uses IoT sensors and 3D scanning in smart environmental monitoring projects.
- **Community-Engaged Learning:** Collaborating with local communities and organizations on real issues. Example: Eco-Schools in Turkey combines school-community partnerships with digital monitoring.
- **Serious Games & Simulation:** Simulated games for learning complex scenarios. Example: National Consortium for Serious Games in France models urban planning, energy, water, and green policy challenges.
- **AI-Integrated Pedagogy:** Using AI tools like ChatGPT in teacher training for question generation, feedback, and personalized guidance. Example: University of Lisbon, Portugal.
- **Place-Based Learning:** Using local contexts and environments as central learning resources.

Required Changes in Teacher Education Institutions

1. Curriculum Reform

- Integrate GreenComp and DigCompEdu across all levels
- Interdisciplinary content
- Problem-based learning
- Real-life practice

⁹https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/twin-green-digital-transition-how-sustainable-digital-technologies-could-enable-carbon-neutral-eu-2022-06-29_en



2. Professional Development for Teacher Educators

- Sustainable development methodologies
- Digital pedagogy
- Research capacity
- Collaboration in European networks

3. Practice and Partnerships

- Green internships
- Digital teaching experience
- Collaboration with schools and NGOs

4. Institutional Capacity

- Digital infrastructure
- Green campuses
- Partnerships with external organizations
- Quality assurance

5. Lifelong Learning and Continuous Professional Development

- Short-term certificate programs
- Online and blended learning
- Erasmus+ Teacher Academies

EU green and digital transition policies require a holistic reform of teacher education institutions. These institutions are responsible for preparing teachers who understand sustainable development, work effectively in digital environments, employ problem-solving approaches, and act as innovators.

The RETEACH project aims to localize these EU strategic directions within Mongolia's teacher education system, and this first part provides an overview of the EU policy framework.



SECTION II. CONTEXT AND CHALLENGES OF GREEN AND DIGITAL-ORIENTED TEACHER EDUCATION IN MONGOLIA

2.1. Green and Digital-Oriented Teacher Education Policy and Governance

The “Vision-2050” Long-Term Development Policy of Mongolia, the comprehensive measures under the “Three-Pillar Teacher Policy” approved by the Government of Mongolia through Resolution No. 192, the “Action Plan for Implementing the Green Development Policy (2016–2030)” approved by Resolution No. 35, the “Framework for Universal Digital Competence” approved by Resolution No. 141, and the Mongolian Education Declaration-2024, all emphasize integrating sustainable development and green development principles into curricula at all levels of education. These policy documents aim to cultivate a culture of environmentally responsible behavior consistent with contemporary lifestyles, develop efficient and resource-conscious usage practices, and ensure that students’ developmental needs are met. They also aim to build a creative and competent teaching workforce and enhance universal digital literacy, promoting the vision of a “Digital Nation.”

The “Vision-2050” Long-Term Development Policy, adopted by the parliament in 2020, specifies the goal of providing a creative and competent teaching workforce capable of meeting students’ developmental needs.¹⁰ In line with the Government’s 2024 Three-Pillar Teacher Policy, measures have been outlined to support teachers’ continuous professional development, reduce workload through digital content and systems, equip every teacher with virtual assistants, establish professional standards, and implement professional development training and activities. Furthermore, the Government of Mongolia’s Action Plan for Implementing the Green Development Policy (2016–2030), approved in 2021 under Resolution No. 35, sets out Strategic Goal 5.1.2: integrating sustainable development and green development principles into curricula at all education levels, preserving traditional environmental practices, and fostering efficient and resource-conscious usage behaviors appropriate for modern lifestyles.¹¹

The National Curriculum for Sustainable Development Education, under Section¹² 3.1.1, outlines activities to enrich curricula and teaching methodologies to instill the essential knowledge, skills, values, and attitudes that support sustainable development in students.¹³

Additionally, Mongolia’s long- and medium-term development policy documents, the 2020 and 2022 resolutions of the Standing Committee on Innovation and Digital Policy of the

¹⁰ Монгол Улсын Засгийн Газар, “Алсын хараа-2050” урт хугацааны бодлогын баримт бичиг, <https://www.vision2050.gov.mn>

¹¹ Монгол Улсын Засгийн Газар, “Ногоон хөгжлийн бодлогыг хэрэгжүүлэх үйл ажиллагааны төлөвлөгөө (2016-2030), <https://legalinfo.mn/mn/detail?lawId=207279&showType=1>

¹² Монгол Улсын Засгийн Газар, Тогтвортой хөгжлийн боловсрол үндэсний хөтөлбөр, <https://legalinfo.mn/mn/detail?lawId=208620&showType=1>

¹³ Монгол Улсын Засгийн Газар, Тогтвортой хөгжлийн боловсрол үндэсний хөтөлбөр, <https://legalinfo.mn/mn/detail?lawId=208620>



Parliament providing directions to the Government, and the Government of Mongolia's 2024–2028 Action Program all include specific provisions regarding the digital transformation of education.

2.2. Educational content, curriculum, and planning

Across Mongolia, 32 universities and higher education institutions offer teacher education programs. However, in the 2023–2024 academic year, only 16 of them produced graduates, as the other institutions did not have final-year students, mainly due to a decrease in enrolment in teacher education programmes. In the 2024–2025 academic year, a total of 14,773 students are enrolled in teacher education programs (Pre-school teacher education – 3,163; Primary teacher education – 2,684; teacher education – 8,926), of which 13,971 are at the bachelor's level.¹⁴

In integrating green and digital competencies into teacher education programs, the curricula comply with national education legislation and general requirements for higher education programs, ensuring coherence with overall education policy. The learning outcomes are aligned with the teacher competency framework and the national digital literacy framework, meeting the standards for both novice and in-service teachers in terms of digital and green skills.

I. Under the framework of the digital transition in education:

The content includes training every teacher in digitally-based teaching methodologies, improving the format of e-learning, establishing a system for teachers' professional development, and supporting digital competencies of administrators at all levels.

II. Under the framework of the green transition in education:

The content includes training teachers in green teaching methodologies to enhance climate literacy, education for sustainable development, and environmentally friendly attitudes. It also incorporates support for green and digital competencies into professional development programs.

In line with the UN-recommended Greening the Curriculum guidelines and the Action Plan for Implementing the Green Development Policy (2016–2030), the teacher education curriculum and programmes shall integrate content aligned with the European Union's GreenComp (Sustainability Competence Framework) and DigCompEdu (Digital Competence Framework for Educators). The following core content areas shall be included:

Green competences (GreenComp):

- climate change and sustainability fundamentals
- environmental systems thinking
- resource efficiency, circular economy, and sustainable consumption
- environmentally responsible behaviour, participation, and agency

¹⁴ “Монгол Улсад багш бэлтгэх бодлого, хөтөлбөрийн нөхцөл байдлын судалгаа”, 2025, <https://reteach.mn/storage/outcomes/June2025/PtoYluyIjZE1mSR750AS.pdf>

**Digital competences (DigCompEdu):**

- digital pedagogy and e-learning design
- digital learning environments and platforms
- digital assessment and feedback
- development and use of digital learning resources
- methods for developing learners' digital competences

Integrated green and digital competences:

- environmental data collection and analysis using digital tools
- use of artificial intelligence, simulations, and modelling for sustainability education
- digital citizenship, data protection, and digital ethics

2.3 Teaching and Learning Methodology

The learning outcomes, teaching methods, and program content of teacher education programs will be developed and implemented to include knowledge, skills, and attitudes related to green and digital competencies.

To ensure the effective development of green and digital competences in teacher education, learning outcomes aligned with GreenComp and DigCompEdu shall account for at least 20–30 percent of the total learning outcomes of teacher education programmes.

Within this proportion:

- 10–15 percent shall be delivered through dedicated green and digital competence courses, and
- the remaining proportion shall be integrated through professional subject courses, teaching methodologies, teaching practice, and assessment activities.

This approach ensures that green and digital competences are not treated as isolated subjects, but are systematically embedded across the entire teacher education curriculum, including subject knowledge, pedagogy, practicum, and evaluation.

The teaching methods of courses included in teacher education programs will integrate green and digital transition principles, applying contemporary, innovative, and student-centered approaches such as inquiry-based, experiential, outdoor, project-based, community-engaged, serious games, AI-integrated pedagogy, and place-based learning.

Materials and learning resources used in teacher education programmes shall meet common standards for green and digital formats, ensuring that learning materials supporting at least 20–30 percent of programme learning outcomes aligned with GreenComp and DigCompEdu are developed and delivered in environmentally friendly and digital forms.

Practicum in Teacher Education Programs

1. The practicum component of teacher education programmes shall be designed in alignment with GreenComp and DigCompEdu, contributing to the achievement of



- 20–30 percent of programme learning outcomes related to green and digital competences.
2. During teaching practice, trainees shall be provided with structured opportunities to develop green and digital competences, and at least one-third of practicum lessons shall integrate green and digital approaches into the teaching and learning process.
 3. For advanced students, research projects, assignments, and practicum activities shall systematically incorporate green and digital content, with learning outcomes explicitly reflecting the demonstration of these competences in practice
 4. Course curricula focused on teaching methods and the preparation of instructional materials may include additional specialised requirements to ensure that green and digital competences are acquired and demonstrated through teaching resources, digital tools, and environmentally responsible practices.

Digital and Green Transitions in Teacher Education

Although Mongolia has made considerable progress in introducing digital technologies into the education sector, this transition has not yet been systematically embedded in the teacher education system in a competence-based manner. Platforms such as Eduten, Mozaik, Learnetic, Google for Education, and Bagsh.edu.mn are used in general education schools, but their integration into teacher education programmes, teaching practice, and learning outcomes remains limited and inconsistent.

Programmes such as the Gemini Academy have begun training teachers to use artificial intelligence and digital tools, which is a positive development. However, these initiatives are mainly short-term and are not structurally linked to initial teacher education programmes, nor are they aligned with international competence frameworks such as DigCompEdu. As a result, there is no stable system for assessing or certifying teachers' digital pedagogical competences.

The MEDLE.MN platform and its digital content repository provide teachers and student teachers with access to a wide range of learning materials. However, the RETEACH situational analysis shows that digital pedagogy, digital assessment, and online learning design are only weakly reflected in teacher education programmes, accounting for just 2–12 percent of bachelor's programmes and 6–18 percent of master's programmes. This indicates that digitalisation in teacher education remains focused on technology use rather than on teaching and learning quality.

The green transition in teacher education is even less developed. While Mongolia has national policies on sustainable development and green growth, these have not yet been translated into a systematic approach within teacher education.¹⁵ Green-related content represents 3.3–17.6 percent of master's programmes and 17.5–30 percent of bachelor's programmes. Although these figures may appear sufficient, in practice they are largely limited to curriculum documents and stand-alone courses, and are not effectively embedded in teaching methods, practicum, or assessment. As a result, key GreenComp competences such as systems thinking, futures thinking, and agency for

¹⁵ Монгол Улсын багш бэлтгэх бодлого хөтөлбөрийн нөхцөл байдлын судалгаа, <https://reteach.mn/storage/outcomes/June2025/PtoYluyIjZE1mSR750AS.pdf>



sustainability are not adequately developed among future teachers. Therefore, while digital and green initiatives exist in Mongolia, they have not yet been integrated into a coherent teacher education system based on learning outcomes, standards, and quality assurance. This demonstrates the clear need for the RETEACH project to support the transformation of teacher education into a system that equips teachers to lead both the sustainability and digital transitions in schools.

Within this framework, teacher-related policies place strong emphasis on ICT-based teaching, digital learning, professional standards, and continuous professional development. However, while the digital transition is explicitly addressed, the green transition is mostly embedded indirectly through broader sustainability and education policies. Teacher-specific green competence standards and implementation mechanisms are not yet clearly defined.

Green and sustainable development competences in teacher education

A situational analysis conducted under the RETEACH project examined 34 teacher education programmes across five universities using UNESCO's Greening Curriculum Guidance (2024). The results show that only two of the four greening principles are currently reflected in Mongolian teacher education programmes, indicating that a fully integrated green curriculum system has not yet been established.

The proportion of green-oriented content in teacher education programmes ranges from 3.3 to 17.6 percent at master's level and from 17.5 to 30 percent at bachelor's level. While programmes include courses such as Environmental Education, Education for Sustainable Development, Ecological Culture and Resource Efficiency, and Basic Concepts of Climate Change, these are mostly delivered as stand-alone courses and are not systematically integrated into professional and pedagogical subjects or aligned with programme-level learning outcomes.

To address this gap, the RETEACH analysis recommends aligning green competences in teacher education with the European Union's GreenComp framework, which defines four key competence areas: valuing sustainability, systems thinking, futures thinking, and taking action.

Digital competences in teacher education

The same situational analysis shows that digital competence content accounts for 2 to 12 percent of bachelor's programmes and 6 to 18 percent of master's programmes.¹⁶ Most digital-related courses focus on basic ICT skills and the use of digital tools, while key DigCompEdu areas such as digital pedagogy, digital assessment, and online course design are weakly represented. This indicates that digitalisation in teacher education remains largely technical rather than pedagogical.

¹⁶ Монгол Улсын багш бэлтгэх бодлого хөтөлбөрийн нөхцөл байдлын судалгаа, <https://reteach.mn/storage/outcomes/June2025/PtoYluyIjZE1mSR750AS.pdf>



Teacher shortage

Teacher shortages remain a significant challenge in Mongolia's education system. In the 2024–2025 academic year, general secondary schools reported a need for 1,280 teachers, including 140 primary teachers and 1,140 subject teachers. Technical and vocational education institutions reported a need for 181 teachers, while preschool institutions reported a shortage of 726 teachers. For higher education institutions that train teachers, staffing requirements are regulated by law, but no consolidated national data on lecturer shortages is currently available. This limits the ability to assess capacity gaps within teacher education institutions.

Teacher education institutions and programme coverage

Across Mongolia, 32 universities and colleges offer teacher education programmes. In the 2023–2024 academic year, 16 of these institutions trained and graduated new teachers. The remaining institutions continued to operate teacher education programmes but did not have graduating cohorts in that year, reflecting declining enrolment in certain institutions and specialisations.

Overall challenges

Despite strong policy commitments, the implementation of green and digital transitions in teacher education remains fragmented. Green competences are not yet aligned with international standards such as GreenComp, and digital competences are not aligned with DigCompEdu. Teacher education programmes lack systematic integration of these competences into learning outcomes, pedagogy, and assessment. Institutional capacity, professional development systems, and quality assurance mechanisms are not yet sufficiently developed to support a coherent and effective green and digital transition.

2.4 Management System, Scope of Activities, and Responsibilities

The system for supporting teachers' green and digital competencies will be optimally established in accordance with international experience and national context. Regulations will incorporate partnerships with higher education institutions that prepare teachers, teacher professional development systems, and both state and civil society organizations to support green and digital competencies. Criteria will be established to measure the alignment of teacher education program learning outcomes with green and digital competencies.

Teachers' green and digital competencies will be developed through formal and non-formal education systems.

Professional development training and activities will be organized in both formal and non-formal forms, applying lifelong learning principles and flexible opportunities for teachers to develop in their workplaces.



- Within the formal system, higher education institutions preparing teachers will equip pre-service teachers with green and digital competencies, integrating these into curricula and activities.
- The continuous professional development of in-service teachers in green and digital competencies will be overseen by the General Authority for Education and incorporated into core training content.
- The National Center for Teacher Development will provide selected courses for in-service teachers to strengthen green and digital competencies.
- Teacher Development Centers in schools will support the enhancement of teachers' green and digital skills.
- In the non-formal system, training to develop green and digital competencies will be organized through partnerships between government and private sector organizations.
- Government agencies responsible for education, local education authorities, and educational institutions will be equipped to monitor, evaluate, and provide methodological guidance for integrating green and digital competencies into professional development activities.

Scope of Work:

- Develop teacher competency standards and define the scope of green and digital skills for teachers.
- Revise pre-service teacher education curricula, learning outcomes, program planning, and teaching methodologies to align with green and digital competencies.
- Establish benchmark criteria for green and digital competencies at the entry level (pre-service teachers), approved and implemented by the central government authority for education. This standard defines the baseline indicators for green and digital skills in novice teachers.
- Integrate green and digital competencies into teacher performance evaluation activities.

Supporting Green and Digital Competencies of Educational Leaders and Teacher Development Centers:

- The management of educational institutions and teacher development centers will support activities that promote and develop teachers' digital competencies and green education, focusing on creating green and digital learning environments.
- The General Authority for Education will annually organize training and discussions to strengthen leaders' and teacher development centers' green and digital competencies.
- Educational institution management will include green and digital competency support in their teacher development plans and implement them.
- Government education authorities (standardized as "General Authority for Education") will monitor the professional development status, performance, and quality improvement of training, and provide necessary support and



advisory services in collaboration with teacher development centers and local education offices.

2.5 Teacher and Teaching Workforce Professional Development

Continuous Professional Development Program for Teachers

- In developing the program for supporting teachers' continuous professional development, the following directions will be followed.
- Assessment of teachers' green and digital competencies will be conducted by the General Authority for Education, using data collected from teachers participating in core professional development programs, to identify the level and needs of teachers' green and digital skills.
- The content addressing teachers' green and digital competency needs will constitute no less than a certain percentage of the core professional development modules.
- The enhancement of teachers' green and digital skills will prioritize collaboration with domestic and international experts, as well as partnerships with public and non-governmental organizations in this field.

2.6 2027–2032 Action Plan for Green/Digital-Oriented Teacher Education

The policy document consists of six sections, regulating the relationships and scope as follows:

- I. General Basis **sets** out the principles and directions for transitioning the teacher education system to green and digital competencies.
- II. Education Content, Curriculum, and Training Programs in supporting green and digital competencies within teacher education programs, alignment with the Education Law, general requirements for higher education curricula, and policy coherence will be ensured. Learning outcomes of the programs will correspond to teacher competency frameworks and the national digital literacy framework, reflecting the standards for both novice and in-service teachers' green and digital competencies.
- III. **Management System, Structure, and Responsibilities**
The system for supporting teachers' green and digital skills will be optimally designed, considering international experience and national context. Regulations will integrate universities, teacher development systems, and partnerships with public and civil society organizations into the support system for teachers' green and digital skills. Standards for measuring alignment of program learning outcomes with green and digital competencies will be established.
- IV. **Digital Transition in Education**
Provide training in digitally-based pedagogical methods for all teachers. Improve the forms of e-learning to support professional development. Include content to enhance digital literacy for administrators at all levels.
- V. **Green Transition in Education**



Train teachers in climate knowledge, education for sustainable development, and environmentally friendly practices. Include content that supports both green and digital competencies in professional development programs. Implement the UN-recommended “Greening the Curriculum” guidelines and align with the Government of Mongolia’s “Action Plan for Implementing Green Development Policy (2016–2030)” to integrate green and digital skills into teacher education curricula.

VI. Anticipated Socioeconomic and Legal Outcomes of the Policy

The teacher education system and teacher training programs in Mongolia will transition to environmentally friendly green and digital competencies, aligning with global trends in education development. The teacher education system will help achieve the long-term goals outlined in Mongolia’s national development strategy and government decrees. Management of secondary schools, teacher development centers, and in-service teachers will have a system to provide and support green and digital competencies. Citizens’ green and digital literacy will improve, and participation and partnership with non-governmental organizations in this sector will increase.



SECTION III. DIRECTIONS FOR ACTION TO ADJUST GREEN AND DIGITAL COMPETENCIES IN THE TEACHER EDUCATION SYSTEM (2027-2032)

3.1. Policy and Regulatory Framework for Transitioning Teacher Education to Green and Digital Directions: General rationale

- Mongolia's long-term development policy "Vision-2050" approved by the Mongolian Parliament in 2020, "Provide creative and competent teachers and human resources that meet the needs and requirements of student development", ¹⁷, and the "Three Pillars of Teacher Policy" comprehensive measures approved by the Government in 2024, include supporting teachers in their continuous development in their workplaces, introducing electronic content and systems to reduce workload, providing each teacher with a virtual assistant, establishing professional standards for teachers, implementing qualification levels, professional development training, and activities, and Strategic Objective 5.1.2 of the "Action Plan for Implementing the Green Development Policy (2016-2030)" approved by Resolution No. 35 of the Government of Mongolia in 2021. This direction will be followed in implementing the activities of "Incorporating the ideas of sustainable development and green development into the curriculum at all levels, inheriting traditional customs of nature conservation, and cultivating a culture of economical and efficient consumption that is in line with the rhythm of modern life", and "National Program for Education for Sustainable Development" 3.1.1. "Enriching and implementing the content and methodology of the curriculum in order to cultivate the knowledge, skills, values, and attitudes necessary for students to support sustainable development." ¹⁸
- The principles of this action are to introduce green and dig comp into the national teacher education system, to ensure a unified teacher policy¹⁹, and to ensure the integrity of the teacher education system.
- The principle of public-private partnership will be adopted to enhance teachers' green and dig comp and support their continuous development within the framework of the Universal Dig comp Framework,²⁰ the Teacher Education Concept, the General Education Teacher Standards, and the Comprehensive Teacher Competency Framework.
- The provisions of the General Education Law, which states that teacher professional development activities shall be organized at the national and local levels, based on educational institutions of the respective level and higher

¹⁷ Монгол Улсын Их Хурал, "Алсын хараа-2050" урт хугацааны бодлогын баримт бичиг, <https://www.vision2050.gov.mn>

¹⁸ Монгол Улсын Засгийн газрын 2021 оны 35 дугаар тогтоолоор батлагдсан "Ногоон хөгжлийн бодлогыг хэрэгжүүлэх үйл ажиллагааны төлөвлөгөө (2016-2030)"

¹⁹ Монгол Улсын Засгийн Газар, Тогтвортой хөгжлийн боловсрол үндэсний хөтөлбөр, <https://legalinfo.mn/mn/detail?lawId=208620&showType=1>

²⁰ Монгол Улсын Засгийн Газар, Тогтвортой хөгжлийн боловсрол үндэсний хөтөлбөр, <https://legalinfo.mn/mn/detail?lawId=208620>



education institutions for teacher education, in collaboration with stakeholders in educational relations, will guide this activity.

3.2 Provision of Teachers' Green and Digital Competencies through Formal and Non-Formal Training Systems

3.2.1 Teacher education curriculum and programs

In line with the implementation of the “Guidelines for Greening the Curriculum” proposed by the United Nations and the “Action Plan for the Implementation of Green Development Policies (2016-2030)”, the following content for providing green and dig comps will be included in the teacher education curriculum:

- The learning outcomes, teaching methodologies, and program content of teacher education curricula are related to green and dig comps develop and implement knowledge, skills, and attitudes.
- Include green and dig comps courses in the content of teacher education programs for at least 40 credits, and in addition to specialized courses, green and dig comps should be taught through professional courses and teaching methodologies.
- Implement green and digital transitions in the teaching methods of the subjects included in the content of the teacher education curriculum
- Develop common criteria for green and electronic materials and teaching aids used in teacher education curricula, and convert a total of at least 40 credit hours of teaching aids to green and digital formats.

3.2.2 Teacher education program internships

- The teacher education program will develop a student internship program in line with green and dig comp.
- During the teaching internship, the teaching methodology will provide opportunities for practicing green and dig comp, and one-third of the internship lessons will be designed to incorporate dig and green comps into the teaching-learning process.
- The learning outcomes are determined by incorporating the content and concepts of green and dig comp into the research, project, and internship performance of advanced students.
- Curriculums focused on teaching methodologies and the preparation of learning materials may include specific additional requirements for providing green and dig comp through learning materials and other content.



3.2.3 Policy, Regulatory and Executive Functions

3.2.3.1 Provision of Teachers' Green and Digital Competencies through Formal and Non-Formal Training Systems

- When organizing formal and non-formal training and activities to support teacher development, the principle of lifelong learning will be applied, emphasizing flexibility and opportunities for teachers to develop their skills in the workplace.
- Within the formal system, higher education institutions responsible for teacher preparation will provide pre-service teachers with digital and green competencies, incorporating these skills into their curricula and activities.
- The continuous development of in-service teachers' digital and green competencies will be implemented by the General Department of Education, integrating it into the core curriculum.
- The continuous development of in-service teachers' digital and green competencies will also be included in the elective training content provided by the National Center for Teacher Development.
- The activities of Teacher Development Support Centers in general education schools will provide support for enhancing teachers' green and digital competencies.
- In the non-formal training system, training for green and digital competencies will be organized based on partnerships between public and private sector institutions.
- The General Department of Education, local government authorities responsible for education, and educational institutions shall possess professional and methodological expertise to provide guidance, monitor, and evaluate the inclusion and implementation of digital competencies and green development content in teacher professional development and skills enhancement programs within their scope of responsibilities

3.2.3.2 Scope of work

- Revise teacher standards to define the scope of teachers' green and dig comp.
- The learning outcomes, program planning, and teaching methodologies of the Teacher education curriculum implemented at higher education institutions that train teachers will be updated in line with the green and dig comps framework of teachers.
- The state administrative central organization in charge of education will adopt and implement the standard criteria for determining the green and dig comps of teachers at the initial teacher level. This initial teacher standard reflects the basic criteria for the green and dig comps of teachers.
- Teachers' green and dig comp are assessed in teacher evaluation activities.

3.2.3.3 Program to support continuous teacher development

- The following guidelines shall be followed when developing a program to support continuous teacher development.



- The assessment of teachers' green and dig comps is conducted by the National Center for Teacher Development from teachers who have been teaching for 5 years and identifies the teachers' green and dig comps needs.
- Content based on teachers' green and dig comps needs will be planned and organized to account for at least 10 percent of the core teacher professional development training modules.
- To improve teachers' green and dig comp, cooperation with foreign and domestic experts, professional training centers, and civil society organizations will be prioritized.

3.2.3.4 Green and dig comp for managers and teacher development centers support ability

- Supporting teacher dig comps and green development education, educational institution management and teacher development centers provide support for development activities, and focus on creating a green and digital environment.
- The Ministry of Education will provide training and discussions on green and dig comps development for managers and teacher development centers. The general office will organize it every year.
- The management of educational institutions shall include and implement content and programs that support teacher dig comps and green development education in their long-, medium- and short-term plans to support teacher development.
- The government authority responsible for education (standardized here as the "General Authority for Education") will monitor teachers' professional development, performance, and progress in the quality of teaching, conduct research, and, if necessary, provide support and guidance in collaboration with teacher development centers and local education offices.

3.3 Expected results

The implementation of this action line is expected to result in the following tangible results in 2027-2032:

- Mongolia's teacher education system and teacher education curricula will shift toward environmentally friendly green and digital competences, in line with global education development trends.
- By 2032, 60–70 percent of teachers will be fully capable of working in an e-learning environment, developing e-materials, and conducting e-assessment.
- By 2032, 50–60 percent of beginning teachers will demonstrate green competences, and education for sustainable development content will be progressively implemented across all levels of education.
- The content of the curriculum and teacher competence requirements will be aligned with the green and digital transition.



- At least 10–15 percent of the training modules of institutions supporting continuous teacher development and teacher development centres will focus on green and digital competences content.
- By 2032, the green and digital competences of school administrators and teacher development centres will significantly increase, and the school environment will become more environmentally friendly and equipped with e-solutions.
- Citizens' green and digital competences will be improved, and the participation and partnerships of non-governmental organizations in this sector will be strengthened.

This strategy is aligned with the Minister of Education's Order No. A/147 (2024) on the General Requirements for Higher Education Study Programmes and Government Resolution No. 227 on the National Qualifications Framework, and seeks to ensure the systematic integration of green and digital competences into teacher education through programme learning outcomes, practicum, assessment, and quality assurance mechanisms



STRATEGIC DIRECTIONS FOR TRANSITIONING TEACHER EDUCATION TOWARDS GREEN AND DIGITAL COMPETENCIES (2027–2032)

No.	Strategic Direction	Actions	Results / Indicators (measurable)	Organizations in charge	Period
1	Policy and regulatory framework aligned with national HE standards and NQF	1.1 Integrate GreenComp and DigCompEdu into national teacher standards/criteria	By 2027, at least 2 national teacher standard/criterias revised to include green and digital competences	Ministry of Education	2027
		1.2 Establish green and digital competence criteria for beginning teachers	By 2028, the professional development training modules for teachers with five or more years of experience will include green and digital competence criteria.	Ministry of Education, Dept. of Higher Education	2027–2028
		1.3 Integrate green and digital competences into the professional development training modules for in-service teachers.	By 2028, CPD framework includes green and digital competence criteria for teachers with 5+ years of service	General Authority for Education	2027–2028
2	Teacher education programmes aligned with HE curriculum requirements and NQF learning outcomes	2.1 Align programme learning outcomes with GreenComp and DigCompEdu	By 2030, at least 12 teacher education programmes revised with mapped green and digital learning outcomes	Teacher education universities	2027–2030
		2.2 Ensure green and digital learning outcomes form a significant share of programmes	In revised programmes, green and digital learning outcomes account for at least 20–25% of total programme LOs; 4–5 programmes updated per year	Teacher education universities, Ministry of Education	2027–2030
		2.3 Integrate green and digital competences into teaching practicum	By 2027, at least 30% of practicum lessons include green and digital components	Teacher education universities	2027–2028
		2.4 Revise research, project and internship guidelines	By 2027, national guidelines require green and digital competences in student research and internships	Teacher education universities	2027–2028
3	Teaching–learning methodology aligned with HE quality assurance	3.1 Integrate green and digital pedagogy into methods courses	By 2030, all revised programmes include green and digital pedagogy modules	Teacher education universities	2028–2030
		3.2 Establish common criteria for green and digital teaching materials	By 2030, national criteria for green and digital learning materials approved	Teacher Development Centers	2029–2030

MEDIUM TERM POLICY DOCUMENT CONCEPT



4	Governance and institutional capacity	4.1 Develop training modules for managers and TDCs	By 2029, at least 3 national training modules on green and digital transition developed	GAE, Civil Society Orgs	2028–2029
		4.2 Train managers and TDC staff	By 2032, at least 300 managers and TDC staff certified	GAE, Civil Society Orgs	2029–2032
5	Professional development of university lecturers	5.1 Align CPD of teacher educators with green and digital transition	By 2029, a new CPD curriculum for teacher educators approved	GAE, National Center for Teacher Development	2028–2029
		5.2 Strengthen cooperation with experts and partners	By 2032, at least 40 training sessions delivered with domestic and international partners	GAE, Civil Society Orgs	2029–2032
		5.3 Increase green and digital competences of teacher educators	By 2030, at least 600 teacher educators trained; 300 certified in GreenComp and DigCompEdu	TDCs, GAE	2027–2030

Alignment of Green and Digital Competences with Teacher Education Levels

Level (NQF)	NQF requirements	Alignment with this strategy
VII – Bachelor	Systematic knowledge, problem solving, responsibility	Action 2.2: 20–25% Green and Digital learning outcomes, enabling teachers to address sustainable development challenges in their profession
IX – Master	Solving complex problems using advanced and new technologies	Action 2.4: Green and Digital research, projects, and practicum
X – Doctorate	Creating new knowledge and influencing society	Actions 5.1 and 5.2: Green and Digital teacher educators and research-based leadership

Alignment with the “General Requirements for Higher Education Study Programmes A147”

Requirement of the General Framework	How it is reflected in this strategy
Programme objectives and goals must reflect future trends	Green and digital transitions are defined as strategic goals in Directions 1 and 2 of Section IV
Learning outcomes must be aligned with the NQF	Actions 2.1 and 2.2 integrate GreenComp and DigCompEdu into programme learning outcomes
Learning outcomes must be mapped to courses	Actions 2.2 and 2.3 link green and digital learning outcomes to courses and practicum
Teaching and learning must be active, digital, and blended	Actions 3.1 and 3.2 operationalise these requirements through green and digital pedagogy
Programmes must be evaluated and improved through a PDCA cycle	Actions 1.1 and 1.3 link quality assurance to teacher standards and continuous professional development



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Appendix 1: Current status of green competencies in teacher education in Mongolia

Based on the program analysis conducted under the project's situational study, the “greenness” of Mongolia’s teacher education programs was assessed according to UNESCO’s *Greening Curriculum Guidance (2024)* four principles: action-oriented, interdisciplinary, future-oriented, and learner-centered. Among the five universities analyzed, only two principles were observed:

- Quality content
- Alignment with digital transition

This indicates that a fully integrated green curriculum system is not yet established, and only partial integration exists.

Proportion of Green Content in Programs

Master’s Programs:

- 3.3–17.6% of credits are dedicated to green development courses

Bachelor’s Programs:

- 17.5–30% of credits are dedicated to green development courses

Note: While the proportion of green courses is higher at the bachelor’s level, most are offered as standalone courses. Core professional courses show weak or incorrect integration of green competencies.

Types of Green-Competency Courses

Programs analyzed include courses such as:

- Environmental Education
- Education for Sustainable Development
- Ecological Culture and Resource Efficiency
- Basic Concepts of Climate Change

Although 17.5–30% of bachelor-level credits and 3.3–17.6% of master-level credits are formally allocated to green development and sustainability-related courses, this does not necessarily reflect the actual quality or effectiveness of green competence development. In most universities, green content is delivered mainly through stand-alone, theory-based courses, with limited instructional hours devoted to pedagogy, practicum, or professional application in teacher education.

- The situational analysis identified the following weaknesses:
- Teaching and learning materials on climate change, sustainability, and green development are limited, outdated, or not adapted to teacher-education contexts.
- Green topics are rarely integrated into subject didactics (e.g. mathematics, science, primary education methods), meaning future teachers are not prepared to teach sustainability through their disciplines.
- Few practicum activities, projects, or teaching tasks are linked to green competences.
- Sustainability-related learning outcomes are often stated in curricula but weakly reflected in teaching methods, assessment, and learning resources.



- Therefore, even where 10–30% of credits are labelled as “green”, the actual development of GreenComp competences (systems thinking, future-oriented thinking, and agency for sustainability) remains limited and fragmented.

Level of Green Content by University

- MNUE: Every program includes green courses, but gaps exist; standalone courses dominate, poorly integrated with professional courses.
- Otgontenger University (OTIS): Has dedicated green development modules, but with limited instructional hours.
- Khangai University: Some programs (e.g., IT, Primary Education) have weak green content.
- Eastern Branch NUM: Minimal green content in Physical Education, Primary, and Pre-school programs.
- Darkhan Institution: Content is limited to basic concepts, insufficient at program level.

Table: Current Status of Green Content

University	Number of Programs	Proportion of Green Content	Notes
MNUE	39	17.5–30%	Green courses exist but poorly integrated
Otgontenger University	3	10–15%	Dedicated green modules, few hours
Darkhan Institution	5	3.3–17.6%	Green content at basic level only
Eastern Branch NUM	4	Very low	Almost no green content
Khangai University	4	Moderate	Not aligned with professional LOs



APPENDIX 2: Current status of digital competencies in teacher education in Mongolia

Based on the results of the situational study conducted under the project, the integration of digital competencies across universities is inconsistent. Most programs primarily include:

- Courses providing foundational ICT knowledge
- Weak coverage of DigCompEdu areas such as digital pedagogy, digital assessment, and online course design

Proportion of Credits for Digital Competency Courses:

- *Master's Level:* 6–18%
- *Bachelor's Level:* 2–12%

Note: The proportion of digital competency content is higher at the master's level, while at the bachelor's level, digital content is very limited.

Although 6–18% of credits at master's level and 2–12% at bachelor's level are allocated to digital-related courses, these courses mainly focus on basic ICT skills rather than on digital pedagogy. Key DigCompEdu areas such as digital assessment, online course design, learner-centred digital teaching, and blended learning are weakly represented.

In addition:

- Digital teaching materials, virtual laboratories, and practicum-based digital tasks are insufficient.
- Digital competence is not systematically assessed in teacher education programmes.
- Most digital courses are not aligned with the six DigCompEdu competence areas.

As a result, teachers may acquire technical ICT skills, but they are not adequately prepared to integrate digital technologies into effective teaching and learning.

Digital Competency-Related Courses Include:

- Fundamentals of ICT
- Use of Digital Tools
- E-learning Environments (LMS)
- Digital Content Creation
- Online Assessment

However, these courses are not systematically aligned with the six competence areas of DigCompEdu.

University	Credits for Digital Content	Notes
MNUE	3–45 credit	Many courses are related to ICT foundations, but their pedagogical integration is weak.
Otgontenger	Moderate	There are basic ICT courses, but alignment with DigCompEdu competencies is weak."
Darkhan	6–18%	"Digital content is more substantial at the master's level compared to the bachelor's level."
Eastern Branch NUM	Low	Few ICT courses
Khangai	High	"The digital credit in the IT teacher education program is high."



Digital Competence Assessment

According to the RETEACH project's survey on digital capacity:

- Teachers' ability to use digital tools is inversely correlated with their years of experience.
- Most teachers have limited experience in organizing online learning.
- Access to digital platforms is poor in provincial and local areas.
- The main training programs conducted by the General Education Authority (BEE/GED) do not include this content and methodology to a specified extent.

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