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“Fostering Socially Distanced and Inclusive on Campus Education in Armenian HEIs” - eCAMPUS

DigiComArm

Armenian Digital Competence Framework for Educators in Higher Education

(Final draft 4)

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Introduction

The DigiComArm framework provides a structured, contextualised, and future-oriented model for developing the digital and AI competences of higher education educators in Armenia. It results from the integration of the document on DigiComArm Conceptual Foundations and Structural Design [5] with several major European references: DigComEdu - European Framework for the Digital Competence of Educators [7], DigComp 3.0 - Validation Workshop [1], DigCompEdu AI Supplement (AI Pioneering Project) [2], UNESCO AI Competency Framework for Teachers [3], and The Cyber Humanities Manifesto [4].

The framework is organised into five competence areas and fourteen key competences. Compared to the structure of DigCompEdu [7], DigiComArm introduces structural adaptations and simplifications that reflect Armenian higher education priorities [6].

Each competence is expressed through a unified descriptor and a set of achievement indicators per proficiency level (Beginner, Practitioner, Expert). This choice builds upon the DigiComArm's Policy Paper [5] indicator model to explicitly capture the technical, pedagogical, ethical, and cultural dimensions of digital competence.

The descriptors are integrated formulations that merge the DigiComArm Concept [5] with contributions from the five reference frameworks:

1. DigCompEdu - European Framework for the Digital Competence of Educators;
2. DigComp 3.0 - Validation Workshop: transversal AI literacy embedded across Engage, Create, Manage, and Design;
3. DigCompEdu AI Supplement (AI Pioneering Project): explicit AI-related competences for educators;
4. UNESCO AI Competence Framework for Teachers: ethical, inclusive, and professional AI use;
5. The Cyber Humanities Manifesto: principles of human agency, inclusion, cultural commons, and digital sovereignty.

This revised structure of DigiComArm ensures that descriptors and achievement indicators are realistic, feasible, and culturally relevant for Armenian higher education, while remaining aligned with international standards. The fave models guarantee that all dimensions - technical, pedagogical, ethical, and cultural - are explicitly represented, while maintaining clarity and feasibility.

Detailed cross-references to the reference frameworks are provided in the Annexes 1-8 at the end of this report.

The DigiComArm framework ensures:

- International alignment with European and global standards, particularly in relation to AI literacy, ethical use, and inclusion.
- Contextual feasibility, adapting tools and practices to the Armenian academic environment, based on insights from the Needs Analysis Report [6].

- Future readiness, embedding AI-supported teaching and learning practices, while emphasizing human agency, inclusivity, and cultural sustainability.

By integrating international best practices with local needs, DigiComArm serves as both a policy reference and a practical instrument for universities and educators. It positions Armenia within the global digital competence landscape, fostering responsible, equitable, and culturally grounded use of digital and AI technologies in education.

The DigiComArm framework is designed to align closely with Armenia's ongoing higher education reforms, national quality assurance (QA) standards, and the country's digital education strategy. By embedding these national objectives into the competence framework, DigiComArm supports a unified and modern approach to digital capacity-building across Armenian higher education institutions. This alignment not only enhances institutional relevance and adoption but also facilitates integration with national quality monitoring systems, accreditation processes, and strategic planning. Emphasizing this connection strengthens the framework's credibility and positions it as a core tool for achieving Armenia's long-term educational transformation goals.

1 Competence Area 1 – Professional Engagement and Development

This competence area addresses the ability of higher education educators to communicate, collaborate, and engage in continuous professional development using digital and AI-supported technologies.

The descriptors presented here are integrated formulations that merge the DigiComArm Concept and DigiComArm base version with contributions from the above-mentioned documents [1-4]. Detailed framework cross-references are provided in Annex 1 at the end of this report.

1.1 Key Competence 1.1 – Digital Communication and Collaboration

Uses digital technologies for professional communication and collaboration, exchange of knowledge and experiences, as well as pedagogical practice and innovation.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can use widely available, basic digital tools and platforms (email, messaging apps, institutional forums) to communicate with colleagues and students, share essential resources, and participate in simple collaborative activities, while beginning to apply inclusive and ethical practices, and experimenting cautiously with basic AI-supported features (*e.g., captions, translation*).

Achievement Indicators:

1. Sends and replies to professional messages (*e.g., Gmail, Outlook, Telegram, Viber, or other comparable tools*) using clear subject lines and respectful tone.

2. Shares lecture notes, links to open educational videos, or reading materials via accessible platforms or forums (*e.g., Google Drive, OneDrive, Dropbox, Moodle forum, Telegram, or other comparable tools*) or email attachments.

3. Participates in basic online (faculty or department) discussion or messaging groups (*e.g., Moodle forum, Telegram, Viber, or other comparable tools*) to share teaching materials or exchange updates.

4. Applies simple accessibility or AI-supported features (*e.g., captions, translation, alt text, or other comparable tools*) when sharing materials.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can integrate multiple digital tools and platforms to collaborate with peers on teaching projects, co-develop resources, and exchange innovative practices, applying inclusive and ethical practices, and using AI-supported tools to improve accessibility and efficiency with critical oversight.

Achievement Indicators:

1. Sets up and manages collaboration platforms for long-term knowledge exchange (*e.g., Teams, Moodle, Google Workspace, or other comparable tools*).

2. Organises or moderates online meetings (*e.g., Zoom, Google Meet, Microsoft Teams, or other comparable tools*) for sharing examples of innovative teaching or discussing course improvements, and uses AI tools for taking notes of the meetings.

3. Shares teaching tips, examples, or case studies in faculty online communities or departmental groups (*e.g., Google Classroom, Moodle, Telegram, or other comparable tools*).

4. Uses AI-supported tools (*e.g., translation, summarisation, captioning, or other comparable tools*) to widen participation and accessibility.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design and lead digital communication systems for sustained professional collaboration, facilitate cross-university or international knowledge exchange, ensuring inclusivity and accessibility, and positioning communication infrastructures as shared cultural ecosystems.

Achievement Indicators:

1. Sets up and manages long-term online collaboration platforms (*e.g., LinkedIn, Microsoft Teams, Moodle forums, Google Workspace shared drives, or other comparable tools*) for the exchange of knowledge and teaching practices.

2. Leads national and international collaborative teaching or research projects, producing shared resources for open access.

3. Evaluates the effectiveness of communication and collaboration tools (*e.g., Google Forms, Moodle reports, Microsoft Forms, or other comparable tools*) through participant feedback and engagement data, adjusting for accessibility.

4. Establishes institutional guidelines for the responsible use of AI in communication and collaboration.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

1.2 Key Competence 1.2 – Continuous Professional Digital and AI Development

Reflects on, develops and evolves digital and AI-assisted pedagogical practices. Utilises digital and AI-based sources for ongoing professional development.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can find and use basic online/digital learning resources and LLMs (*e.g., ChatGpt, Grok, Gemini, Deepseek, etc.*), including introductory AI tutorials, to identify areas for improvement and improve teaching practices, ensuring sources are credible.

Achievement Indicators:

1. Watches short tutorials or webinars (*e.g., YouTube, Khan Academy, institutional webinar recordings, or other comparable tools*) on digital teaching techniques and notes takeaway for future use.

2. Subscribes to educational newsletters or mailing lists on pedagogy and AI in education or joins a faculty mailing list (*e.g., Google Groups, institutional mailing list, or other comparable tools*) to receive teaching updates.

3. Saves useful teaching links and resources in a simple note-taking app (*e.g., Google Keep, Microsoft OneNote, or other comparable tools*) with basic source details.

4. Experiments with entry-level AI tools (*e.g., automatic summarisation, flashcard generators, or other comparable tools*) and saves useful resources in simple apps.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can engage regularly in structured professional learning using digital platforms, adapt new and AI-supported teaching methods to the local contexts, and document professional growth through self-assessment and feedback from peers.

Achievement Indicators:

1. Completes at least one online training course per academic year (*e.g., Moodle-based, EdX, Coursera, YouTube, or other comparable tools*) and applies the learned technique in class.

2. Participates in professional online communities of teaching practice (*e.g., Telegram, Moodle forum, or other comparable tools*), contributing to topic discussions.

3. Develops a personal teaching portfolio (*e.g., Google Sites, WordPress.com, Google Drive folder, or other comparable tools*) documenting digital teaching practices, reflections, and peer/student feedback.

4. Uses AI tools (*e.g., reflective prompts, adaptive recommendations, or other comparable tools*) to support journaling or self-assessment, critically reviewing outputs.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can lead professional development initiatives in digital and AI-supported pedagogy at the institutional or network level, contribute expertise to public forums, and mentor colleagues on advanced strategies for improving digital pedagogy.

Achievement Indicators:

1. Designs and monitors a yearly personal professional development plan using digital tools and tracks progress with (AI-driven) analytics (*e.g., Google Forms surveys, Moodle reports, Slack, or other comparable tools*).

2. Publishes case studies or guidelines, articles, or video tutorials on digital teaching practices in higher education (*e.g., WordPress, Google Docs, LinkedIn, institutional website, or other comparable tools*).

3. Organises and delivers webinars or workshops for colleagues on effective use of accessible, context-appropriate digital and AI teaching tools (*e.g., Zoom, Google Meet, Moodle, or other comparable tools*).

4. Combines different AI tools to create an appropriate environment and workflow for the improvement of digital pedagogy.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

2 Competence Area 2 – Digital Resources and Content Creation

This competence area addresses the capacity of higher education educators to select, create, adapt, and responsibly share digital and AI-supported resources. It encompasses awareness of quality, accessibility, licensing, and cultural relevance, as well as critical engagement with AI-generated content.

The descriptors presented here are unified formulations that merge the DigiComArm Concept and DigiComArm base version with contributions from the above-mentioned documents [1-4]. Detailed cross-references are provided in Annexes 2 and 3 at the end of this report.

2.1 Key Competence 2.1 – Selecting Digital Resources

Selects digital resources aligned with learning objectives, pedagogical strategies, and learner needs. Uses, creates and shares OER with awareness of licensing.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can search for, write prompts and choose basic open and free digital resources (texts, videos, tutorials) from trusted sources that fit lesson goals and learner needs, demonstrating initial awareness of copyright and licensing requirements when sharing.

Achievement Indicators:

1. Uses Web platforms/services and LLMs (*e.g., Google Search, YouTube, Khan Academy, TED-Ed, or other comparable tools*) to find free learning materials (videos, articles, or tutorials) from recognized repositories or institutional platforms relevant to course topics.

2. Selects open educational resources (OER) from Web platforms/services (*e.g., Wikipedia, OER Commons, OpenStax, Khan Academy, or other comparable tools*), checking for open access and ensuring source credibility.

3. Shares links or files via online services (*e.g., Gmail, Telegram, Viber, Outlook, or faculty Viber groups, or other comparable tools*), mentioning simple licensing details where possible.

4. Experiments with AI-based search or recommendation tools (*e.g., AI-supported search engines, or other comparable tools*), while reflecting on possible bias.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can critically compare, evaluate and select digital resources for teaching to match specific learning goals and strategies, considering licensing, accessibility, and adaptation to the Armenian higher education context.

Achievement Indicators:

1. Selects materials from trusted repositories (*e.g., Coursera free content, EdX audit mode, OpenStax, FutureLearn, or other comparable tools*) and adapts them for local teaching settings.

2. Evaluates and adapts OERs to align with specific learning objectives and the Armenian cultural and educational context, ensuring compliance with licensing requirements (*e.g., Creative Commons, or other comparable tools*) and accessibility standards.

3. Integrates selected resources into Learning Management Systems (LMS) or online learning platforms (*e.g., edtech platforms like Moodle, Google Classroom, Edmodo, Microsoft Teams, or other comparable tools*) for student access.

4. Tests AI-assisted tools (*e.g., summarisation, translation, content curation, or other comparable tools*) and validates outputs before use.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can curate and lead the use of advanced digital resources aligned to complex pedagogical needs, including evaluating AI-generated or AI-recommended content for reliability and licensing, creating high-quality OER with expert knowledge of licensing, while mentoring colleagues in these practices.

Achievement Indicators:

1. Establishes departmental/institutional guidelines for resource selection (*e.g., quality, licensing, accessibility, or other comparable tools*).

2. Leads initiatives to curate collections of open resources (*e.g., institutional OER repositories, or other comparable tools*).

3. Mentors peers and students in the responsible evaluation and selection of digital and AI-supported resources.

4. Critically evaluates and integrates AI-generated or AI-curated content, addressing issues of bias, transparency, and cultural appropriateness.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

2.2 Key Competence 2.2 – Creating and Modifying Digital Resources

Modifies and creates new digital educational resources in multiple formats. Supports learners in developing their own digital content.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can make small changes to existing educational resources or create simple new materials (presentations, documents, images) in common formats by using basic tools, providing step-by-step support for students to do the same.

Achievement Indicators:

1. Modifies and edits existing materials, documents or slides (*e.g., Google Slides, Microsoft PowerPoint, LibreOffice Impress, Canva, or other comparable tools*) by adding captions, images, text, or diagrams or adapts layout to improve clarity and match lesson needs.

2. Creates simple teaching resources (slides, handouts, quizzes or worksheets) using standard tools (*e.g., Google Docs, Microsoft Word, PowerPoint, Moodle, or other comparable tools*).

3. Shows students how to use basic creation tools (*e.g., Paint, Google Drawings, Canva, Microsoft Whiteboard, or other comparable tools*) for assignments.

4. Uses AI-assisted tools (*e.g., automatic captioning, image generation, or other comparable tools*) in basic tasks, reflecting critically on accuracy and appropriateness.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can produce and adapt digital resources in different formats using multiple tools and AI applications, and guide students in creating their own.

Achievement Indicators:

1. Modifies or creates interactive content/materials to include quizzes or videos (*e.g., Canva, Moodle quizzes, H5P, simulations, or other comparable tools*) for active learning.

2. Creates multimedia presentations (*e.g., Prezi, Microsoft Sway, Canva, Google Slides, or other comparable tools*) and video lectures that enhance student engagement.

3. Teaches students to use beginner-friendly tools for videos, infographics, or presentations (*e.g., Biteable, Canva, Animoto, Piktochart, or other comparable tools*).

4. Uses AI-assisted tools (*e.g., text-to-speech, adaptive quiz generation, translation, or other comparable tools*) to personalize resources, while validating their accuracy.

5. Creates simple OER (*e.g., Google Slides, Canva, Microsoft PowerPoint, LibreOffice Impress, or other comparable tools*) and applies Creative Commons licenses before sharing.

6. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design and create innovative, high-quality digital and AI-supported resources in advanced formats, empower students to independently produce complex digital content, and facilitate contribution to shared repositories.

Achievement Indicators:

1. Develops interactive learning modules (*e.g., H5P, Adobe Captivate, Genially, or other comparable tools*) that enhance student engagement, *experimenting with AI-supported enhancements*.

2. Guides students in collaborative content creation using professional-grade tools (*e.g., Figma, Google Docs, Canva, GitHub, or other comparable tools*).

3. Curates student-created resources into shared faculty repositories (*e.g., Google Drive, OneDrive, Moodle, Notion, or other comparable tools*) for reuse.

4. Critically evaluates AI-generated or AI-assisted content for bias, ethical and pedagogical relevance before integration.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

2.3 Key Competence 2.3 – Managing and Protecting Digital Resources

Organises and curates digital materials, makes them available to learners, ensuring copyright compliance, privacy and data protection.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can organise digital educational materials/resources (*e.g., slides, worksheets, etc.*) into simple digital folders, share them with learners, while applying basic copyright and privacy rules.

Achievement Indicators:

1. Saves and organizes files/teaching resources in cloud folders (*e.g., Google Drive, OneDrive, Dropbox, Yandex Disk, or other comparable tools*), organised by course or topic.

2. Shares learning materials/files with colleagues and students via email (*e.g., Gmail, Outlook, Telegram, Viber, WeTransfer, or other comparable tools*) using basic access settings.

3. Chooses resources marked for public use or an Open licensing framework where possible (*e.g., Creative Commons Search, Wikimedia Commons, Pixabay, Unsplash, or other comparable tools*).

4. Applies integrated AI-assisted protective tools when sharing or distributing materials.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can curate and manage resource collections in shared spaces, ensuring correct licensing and applying privacy settings suited to different groups.

Achievement Indicators:

1. Creates and maintains shared folders and course-specific repositories (*e.g., Google Drive, OneDrive, Dropbox, Moodle, institutional repositories, or other comparable tools*) with tagged resources for student access.

2. Uses citation and source-checking tools (*e.g., Google Scholar, Citation Machine, Zotero, Mendeley, or other comparable tools*) to ensure copyright compliance.

3. Uploads resources to learning platforms (*e.g., Moodle, Google Classroom, Edmodo, Microsoft Teams, or other comparable tools*) with appropriate access rights.

4. Uses AI-assisted editing, translation, or classification tools to adapt resources for accessibility and contextual relevance, validating outputs for accuracy and data protection.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design and lead the creation of well-organised, secure, and accessible institutional resource libraries and open educational resources (OER), embedding copyright and privacy best practices, and integrating AI-supported tools (*e.g., tagging, analytics, etc.*) to improve accessibility and resource management with transparency.

Achievement Indicators:

1. Builds and manages large-scale repositories or OER platforms (*e.g., Notion, Omeka, Google Drive shared libraries, Microsoft SharePoint, or other comparable tools*) with search and AI-supported tagging features.

2. Designs institutional guidelines for copyright compliance and data protection (*e.g., Google Docs, Microsoft Word, Canva templates, Moodle pages, or other comparable tools*).

3. Integrates analytics and AI-supported tools to track resource use (*e.g., Google Analytics, Moodle analytics, Microsoft Power BI, Google Data Studio, or other comparable tools*) and improve access.

4. Mentors colleagues and students in managing and sharing resources responsibly, highlighting ethical and cultural implications of AI-supported platforms.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

2.4 Key Competence 2.4 – Responsible Use of Digital Resources

Can promote and ensure the ethical, safe, inclusive, and well-being-oriented use of digital and AI-supported resources and technologies in teaching and learning.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can apply basic principles of source referencing, safe browsing, and the concept of ethical and responsible use and sharing of digital resources, including awareness of copyright and safe use of AI-assisted tools.

Achievement Indicators:

1. Demonstrates how to cite online sources and authors when sharing digital materials (*e.g., Google Scholar, Citation Machine, EasyBib, BibGuru, or other comparable tools*).

2. Applies simple safety practices (*e.g., avoiding suspicious links, checking site credibility via Google Safe Browsing, VirusTotal, or WHOIS lookup, or other comparable tools*).

3. Uses only licensed or open resources for teaching purposes, introduces Creative Commons symbols and their meaning (*e.g., Creative Commons Search, Wikimedia Commons, Flickr CC, or other comparable tools*).

4. Experiments with AI-supported tools (*e.g., chatbots, content suggestions, or other comparable tools*) while reflecting on possible inaccuracies or biases.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can guide students and colleagues in applying proper referencing, understanding digital rights, ethical and safe use of digital and AI-supported resources, and critical evaluation of sources.

Achievement Indicators:

1. Provides students with guidelines for safe and ethical digital resource use and referencing (*e.g., Zotero, Mendeley, EndNote Basic, CiteThisForMe, or other comparable tools*).

2. Teaches students to check source credibility (*e.g., Google Fact Check Tools, Snopes, FactCheck.org, PolitiFact, or other comparable tools*).

3. Discusses with students intellectual property rights and licensing (*e.g., Google Docs, Moodle forums, Padlet, Tricider, Microsoft Teams discussion boards, or other comparable tools*).

4. Evaluates AI-supported content for bias, inclusivity, and relevance before recommending it.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design and lead initiatives that promote institutional awareness of ethical digital practices, including responsible use of digital and AI-supported resources, advanced referencing, and digital well-being.

Achievement Indicators:

1. Develops and implements institutional policies on the advanced referencing techniques and ethical and responsible use of digital and AI-generated resources (*e.g., Moodle, Google Classroom, Microsoft Teams, Schoology, or other comparable tools*).

2. Leads training sessions for staff and students on digital rights, data privacy, and algorithmic transparency (*e.g., Moodle, Google Classroom, Canvas, EdX, or other comparable tools*).

3. Leads campaigns on academic integrity within the university (*e.g., Zoom, Canva, institutional website, social media platforms, or other comparable tools*).

4. Engages in institutional and national initiatives on AI ethics in education, contributing to policy development.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

3 Competence Area 3 – Teaching and Learning

This competence area addresses the ability of higher education educators to design, implement, and reflect on digital and AI-supported teaching and learning processes. It covers planning, orchestrating, and adapting teaching strategies that integrate digital and AI-based tools in pedagogically meaningful, inclusive, and ethically responsible ways.

The descriptors presented here are unified formulations that merge the DigiComArm Concept and DigiComArm base version with contributions from the above-mentioned documents [1-4]. Detailed cross-references are provided in Annexes 4 and 5 at the end of this section.

3.1 Key Competence 3.1 – Instructional Design and Teaching

Designs, plans, and implements effective teaching and learning processes using digital and AI-supported methods, ensuring inclusivity, accessibility, and cultural relevance.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design simple digital teaching and learning activities (*e.g., presentations, basic quizzes*) using basic digital tools, beginning to integrate AI-supported resources with awareness of inclusivity, accessibility, and ethical considerations.

Achievement Indicators:

1. Prepares lesson plans that include at least one digital or open educational resource *(e.g., Google Slides, Microsoft PowerPoint, Canva, LibreOffice Impress, or other comparable tools).*

2. Designs simple learning activities in online environments (*e.g., Moodle quizzes, shared slides, or other comparable tools*).

3. Incorporates simple interactive activities to encourage participation *(e.g., Kahoot, Quizlet, Mentimeter, Wordwall, or other comparable tools).*

4. Uses entry-level AI tools (*e.g., automatic quiz generators, content suggestions*), writes simple prompts to generate short examples or quiz questions *(e.g., ChatGPT free, Google Gemini, Poe, Quizizz, You.com, or other comparable tools)* while reflecting critically on reliability.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design and deliver digital and AI-supported teaching and learning activities that are engaging, adapted to student needs, and support hybrid or blended delivery.

Achievement Indicators:

1. Develops structured teaching units integrating digital platforms (*e.g., Moodle modules, online collaborative spaces, Google Classroom, Microsoft Teams, or other comparable tools)*.

2. Delivers interactive classes using features (*e.g., polls and breakout rooms*) to support inclusivity *(e.g., Zoom, Microsoft Teams, Google Meet, BigBlueButton, or other comparable tools)*.

3. Adapts instructional design to different student needs (*e.g., language support, accessibility features, differentiated pathways, or other comparable tools*).

4. Uses AI-assisted tools (*e.g., adaptive quiz generation, learning analytics dashboards, ChatGPT, Jasper AI trial, Google Gemini, or other comparable tools*), writes complex prompts to refine lesson design and validates outputs.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can lead the design and implementation of innovative digital and AI-supported teaching models at the institutional level, promoting inclusive learning pathways, and mentoring colleagues in practice.

Achievement Indicators:

1. Designs blended or fully online course models that integrate AI-supported systems (*e.g., adaptive learning platforms, or other comparable tools*) responsibly.

2. Designs simulations or role-play scenarios with AI-generated content *(e.g., H5P, Twine, CoSpaces Edu free, ChatGPT, or other comparable tools)*.

3. Optimises virtual environments to improve accessibility and learner engagement *(e.g., Mozilla Hubs, Spatial free tier, FrameVR, Gather Town, or other comparable tools).*

4. Designs and produces innovative digital content, expertly leverages a suite of digital and AI-supported tools to develop interactive learning materials, simulations, and multimedia resources that enhance pedagogy and students engagement.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

3.2 Key Competence 3.2 – Academic Guidance and Support

Uses digital platforms and AI-supported tools to provide academic guidance and support to learners (individually and collectively). Enables learners to navigate and evaluate the credibility of information in digital environments.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can provide basic academic individual and group guidance to students using digital platforms (*e.g., messaging, email, learning management systems*), experimenting with entry-level AI assistants (*e.g., Q&A chatbots*) for information or feedback.

Achievement Indicators:

1. Uses email, messaging apps or institutional platforms for individual student support *(e.g., Gmail, Outlook, Telegram, Viber, or other comparable tools)* in a timely and respectful way.

2. Shares learning resources and guidance documents or FAQs via accessible platforms (*e.g., Moodle, Google Drive, WhatsApp, or other comparable tools*).

3. Teaches basic checks for credibility, such as examining the source and website domain *(e.g., direct browser checks, Google Search, Wikipedia references, or other comparable tools).*

4. Experiments with entry-level AI assistants (*e.g., chatbots, writing aids, or other comparable tools*) for drafting responses, while reviewing accuracy before sharing.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can guide and support students through digital and AI-enhanced platforms, including the use of AI-assisted feedback or recommendation systems, tailoring guidance to individual and group needs.

Achievement Indicators:

1. Provides structured feedback using digital platforms (*e.g., Moodle comments, Google Docs annotations, or other comparable tools*).

2. Offers one-on-one mentoring sessions via video conferencing *(e.g., Zoom, Google Meet, Microsoft Teams, or other comparable tools).*

3. Facilitates group discussions on evaluating sources *(e.g., Moodle forums, Padlet, Google Classroom discussions, or other comparable tools)* and demonstrates the use of online fact-checking tools *(e.g., Google Fact Check Explorer, Snopes, FactCheck.org, or other comparable tools).*

4. Uses AI-assisted tools (*e.g., feedback generators, language support tools, or other comparable tools*) to provide personalized suggestions, while validating results.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design and lead advanced digital and AI-supported academic guidance and support systems that empower learners to independently navigate, critically evaluate, and apply credible information across disciplines.

Achievement Indicators:

1. Builds institutional guidance frameworks (*e.g., online mentoring platforms, academic advising portals*) using LMS analytics *(e.g., Moodle reports, Google Classroom analytics, Microsoft Teams Insights, or other comparable tools)* for student guidance and support.

2. Creates peer-led networks for information literacy exchange *(e.g., LinkedIn Groups, ResearchGate, dedicated Moodle groups, or other comparable tools).*

3. Integrates immersive environments for credibility assessment exercises *(e.g., Mozilla Hubs, Gather Town, Google Arts & Culture VR, or other comparable tools)*, including scenarios with AI-generated content.

4. Integrates AI-supported tools (*e.g., predictive analytics, adaptive feedback systems, or other comparable tools*) responsibly, ensuring transparency and fairness.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

3.3 Key Competence 3.3 – Collaborative Learning

Utilizes digital and AI-supported technologies to promote learners' collaborative learning activities and knowledge sharing both within and beyond the classroom, promoting inclusivity.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can use basic digital platforms (*e.g., forums, shared documents, messaging groups*) to facilitate students' group work, simple collaboration and knowledge sharing within the classroom and extending beyond it, experimenting with basic AI-supported features (*such as translation or captioning*) to facilitate participation.

Achievement Indicators:

1. Organises shared document activities for small groups *(e.g., Google Docs, Microsoft Word Online, OnlyOffice,or other comparable tools).*

2. Sets up class group chats for homework help and reminders *(e.g., Telegram, WhatsApp, Viber groups, or other comparable tools).*

3. Uses simple visual collaboration tools for brainstorming *(e.g., Padlet, Tricider, Lino, or other comparable tools).*

4. Experiments with entry-level AI-supported tools (*e.g., automatic summarisation, translation, captioning, or other comparable tools)* to facilitate group communication.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance..

Competence Descriptor:

Can design and orchestrate structured collaborative learning experiences using digital platforms and AI-supported tools to promote participation, extend interaction beyond the classroom and adapt activities to diverse groups.

Achievement Indicators:

1. Coordinates collaborative or group projects using shared platforms and workspaces *(e.g., Microsoft Teams, Google Workspace, Moodle, or other comparable tools).*

2. Facilitates moderated collaborative activities and knowledge exchange in an LMS *(e.g., Moodle forums, Google Classroom Q&A, Edmodo, or other comparable tools).*

3. Uses visual project-design tools for collaborative tasks *(e.g., Figma free plan, Lucidchart, Canva, or other comparable tools).*

4. Integrates AI-supported functions (*e.g., brainstorming aids, collaborative writing copilots, or other comparable tools*) into group work, reviewing AI outputs critically.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can lead and innovate in using digital technologies and AI-supported platforms for large-scale, inclusive and collaborative learning experiences across courses or institutions, building sustainable networks and promoting inclusivity.

Achievement Indicators:

1. Organises institutional or cross-institution collaborative learning projects using advanced platforms *(e.g., Zoom, Google Meet, Microsoft Teams, or other comparable tools).*

2. Creates ongoing online learning communities for student collaboration *(e.g., LinkedIn Groups, Facebook Groups, dedicated Moodle spaces, or other comparable tools).*

3. Uses student feedback and data analytics from collaboration tools to improve inclusivity and participation *(e.g., Moodle activity reports, Teams Insights, Google Workspace activity logs, or other comparable tools).*

4. Integrates AI-supported collaborative environments (*e.g., intelligent tutoring systems, knowledge-building platforms, or other comparable tools*) while ensuring bias awareness.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

3.4 Key Competence 3.4 – Supporting Autonomous Learning

Fosters learners' metacognitive, autonomous and self-regulated learning using digital and AI-supported environments, ensuring inclusivity and ethics. Empowers learners to monitor their learning through digital and AI-assisted self-assessment and reflection.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can support students to introduce basic tools for learning goal setting, engage in basic autonomous learning, self-assessment, and simple reflection activities by using digital tools, while experimenting cautiously with AI-assisted study aids.

Achievement Indicators:

1. Suggests simple digital resources (*e.g., videos, articles, online exercises, or other comparable tools*) for independent study.

2. Encourages students to use institutional platforms (*e.g., Moodle, library databases, or other comparable tools*) for self-paced learning.

3. Guides students to set short-term learning goals *(e.g., Google Keep, Microsoft To Do, Trello, or other comparable tools)* and creates self-check quizzes for them to track progress *(Google Forms, Kahoot, Quizizz).*

4. Introduces entry-level AI study tools (*e.g., flashcard generators, summarisation apps, or other comparable tools*) with guidance to verify accuracy and limits.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance..

Competence Descriptor:

Can integrate digital and AI-supported tools into the learning process to support learners in actively planning, monitoring, and reflecting on their progress, and to adapt teaching strategies to learners' individual needs.

Achievement Indicators:

1. Supports students in setting personal learning goals *(e.g., Notion free plan, Trello, Microsoft Planner, or other comparable tools)* and monitoring progress with digital dashboards *(Google Sites, Wix free plan, Seesaw)*.

2. Designs self-paced modules in LMS platforms (*e.g., Moodle, Google Classroom, or other comparable tools*) with integrated feedback.

3. Uses LMS analytics to guide learners in adjusting study strategies *(e.g., Moodle reports, Google Classroom analytics, Teams Insights, or other comparable tools)*.

4. Encourages students to use AI-supported tools (*e.g., translation, adaptive quizzes, recommender systems, or other comparable tools*) while reflecting on limitations, biases, and ethical concerns.

5. Guide students to use digital tools and AI platforms to research, synthesize information, and create high-quality, original work for their assignments.

6. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can lead innovative approaches to autonomous and self-regulated learning, designing adaptive systems using digital and AI-supported tools, and fostering metacognitive skills in diverse learners.

Achievement Indicators:

1. Implements adaptive learning platforms for personalised self-regulated study *(e.g.,Moodle with plugins, Khan Academy, Coursera for Campus free trial, or other comparable tools)*.

2. Develops institutional strategies and guidelines for fostering autonomous learning (*e.g., learning pathways, micro-credentials, or other comparable tools*).

3. Creates advanced ePortfolio systems *(e.g.,Mahara, Google Sites, WordPress, or other comparable tools),* publishes case studies or shares open resources to support autonomous learning.

4. Integrates advanced AI systems (*e.g., adaptive tutoring, learning analytics, or other comparable tools*) responsibly into self-learning environments, ensuring fairness and inclusivity.

5. Foster an environment where students independently and critically select and use digital and AI-supported tools to pursue their curiosity, build personal knowledge, and develop lifelong learning skills.

6. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

4 Area 4 – Assessment and Feedback

This competence area addresses the ability of higher education educators to design and implement assessment processes and feedback practices that are transparent, inclusive, and enriched by digital and AI-supported technologies.

In DigiComArm, this area merges the perspectives of assessment and feedback, which in other frameworks (e.g., DigCompEdu) are often addressed separately. This choice reflects: the contextual needs identified in the Needs Analysis Report [7], where improving assessment practices and formative feedback were seen as urgent priorities for Armenian higher education; a simplified structure, reducing the number of areas while maintaining alignment with international standards; the integration of AI-supported approaches, such as learning analytics, adaptive feedback systems, and automated assessment tools, which naturally connect assessment with feedback and continuous improvement; the educational values of inclusion and agency, consistent with the Cyber Humanities Manifesto, which emphasises assessment as a process of co-construction and feedback as a driver of student empowerment.

The descriptors presented here are unified formulations that merge the DigiComArm Concept and DigiComArm base version with contributions from the above-mentioned documents [1-4]. Detailed cross-references are provided in Annex 6 at the end of this section.

4.1 Key Competence 4.1 – Assessment

Uses digital and AI-supported technologies for formative and summative assessments. Enhances diversity and adequacy of assessment formats and methods, ensuring fairness and transparency.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can apply basic digital tools to carry out simple formative and summative assessments (*e.g., quizzes, assignments*), experimenting cautiously with AI-supported features (*e.g., automatic grading suggestions, quizzes*), while ensuring transparency, fairness, and accessibility.

Achievement Indicators:

1. Creates short quizzes or assignments in the LMS (*e.g., Moodle, Google Classroom, or other comparable tools*) to check understanding *(e.g., Google Forms, Kahoot, Quizizz, Microsoft Forms, or other comparable tools).*

2. Conducts summative tests using basic LMS quiz functions *(e.g., Moodle, Google Classroom, Microsoft Forms, Edmodo, or other comparable tools).*

3. Uses polls for quick feedback during lessons *(e.g., Zoom polls, Mentimeter, Google Classroom questions, or other comparable tools).*

4. Uses simple AI features (*e.g., automatic scoring, quizzes, plagiarism checkers, or other comparable tools*) with human verification.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can implement diverse assessment strategies using digital and AI-supported tools, adapting methods based on learner performance and feedback, integrating interactive formats and formative and summative approaches.

Achievement Indicators:

1. Builds interactive quizzes with embedded media *(e.g., Edpuzzle, Nearpod, H5P, Quizizz, or other comparable tools).*

2. Creates mixed-format assessments combining different approaches, like rubrics, essays, projects, simulations *(e.g., Moodle, Google Classroom, Microsoft Teams assignments, or other comparable tools).*

3. Uses project-based and scaffolding tools for creative assessment tasks *(e.g., Padlet, Canva, Genially, or other comparable tools).*

4. Uses AI-supported analytics (*e.g., error pattern detection, adaptive testing, or other comparable tools*) to refine tasks, while validating reliability and transparency.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can lead the development of innovative, adaptive assessment practices (sometimes at the institutional level) using advanced digital and AI-supported tools to maximise validity, fairness and reliability.

Achievement Indicators:

1. Designs adaptive assessments in AI-supported platforms *(e.g., Moodle with AI plugins, Century Tech trial, Smart Sparrow, or other comparable tools)*, ensuring transparency of scoring criteria.

2. Creates simulation-based or immersive assessments *(e.g., H5P, CoSpaces Edu free, Mozilla Hubs, or other comparable tools).*

3. Uses performance dashboards, online reflective learning logs to track performance trends and adjust assessment strategies *(e.g., Google Looker Studio, Power BI free, Microsoft Excel, or other comparable tools).*

4. Establishes and monitors policy-aligned guidelines for AI-supported assessment, ensuring reliability, validity, and fairness.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

4.2 Key Competence 4.2 – Feedback and Improvement

Interprets digital data on learner performance to inform assessments and adapt teaching and learning strategies. Promotes learner engagement through timely, targeted feedback using digital and AI-supported tools while respecting the privacy and security of the information provided.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can interpret simple performance data from digital tools to make basic teaching adjustments. Can provide short, targeted feedback to learners using basic digital platforms, experimenting cautiously with AI-supported tools for formulating comments.

Achievement Indicators:

1. Shares short feedback messages on student work through LMS platforms (*e.g., Moodle comments, Google Docs notes, or other comparable tools*).

2. Reviews quiz results to identify common errors *(e.g., Google Forms, Kahoot, Microsoft Forms, or other comparable tools).*

3. Provides brief feedback through comments or messages (*e.g., Google Docs, Gmail, Telegram, or other comparable tools*) and shares visual summaries to clarify results (*e.g., Google Sheets charts, Excel graphs, Canva infographics, or other comparable tools*).

4. Uses entry-level AI tools (*e.g., grammar suggestions, feedback prompts, or other comparable tools*) with human review before sharing.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance..

Competence Descriptor:

Can analyse and interpret digital performance data to adjust assessment formats and adapt teaching practices. Can integrate digital and AI-supported tools to provide detailed, personalised constructive feedback that promotes learner engagement.

Achievement Indicators:

1. Reviews analytics from LMS tools to identify learning gaps *(e.g., Moodle reports, Google Classroom analytics, Canvas, Microsoft Teams Insights).*

2. Records personalised video or audio feedback *(e.g., Loom, Flipgrid, Vocaroo).*

3. Facilitates interactive feedback activities or sessions and other tools to collect and analyse students' feedback *(e.g., Padlet, Mentimeter, or other comparable tools).*

4. Uses AI-assisted platforms (*e.g., automated feedback on quizzes, learning analytics dashboards, or other comparable tools*) to identify patterns and tailor feedback, validating accuracy.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can design and lead continuous teaching improvement (institutional) strategies using complex data analysis. Can design feedback systems leveraging digital and AI-supported technologies that promote learning and inclusivity.

Achievement Indicators:

1. Uses predictive analytics tools to identify at-risk students *(e.g., Power BI free, Google Looker Studio, Moodle analytics, Blackboard Predict, or other comparable tools),* ensuring transparency of criteria.

2. Develops interactive feedback systems with multimedia elements *(e.g., H5P, Genially, Google Sites, or other comparable tools).*

3. Designs institution-wide feedback and improvement strategies based on aggregated data *(e.g., shared LMS templates, Google Workspace collaboration, Microsoft Teams channels, or other comparable tools).*

4. Leads initiatives to implement AI-generated feedback systems (*e.g., adaptive feedback, sentiment analysis, or other comparable tools*) with human oversight.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

5 Area 5 – Empowering and Engaging Learners

This competence area addresses the educator's ability to foster learner agency, motivation, accessibility, and inclusion through the use of digital and AI-supported technologies.

In DigiComArm, Area 5 brings together two central dimensions: accessibility and inclusion (5.1) and learner engagement (5.2). While in DigCompEdu, these are partly distributed across Areas 5 and 6, the DigiComArm framework integrates them under a single area for three main reasons:

Contextual Relevance: The Needs Analysis Report [7] highlighted accessibility, inclusion, and student engagement as pressing priorities for Armenian higher education, requiring a coherent and focused approach.

Structural Simplification: By merging what DigCompEdu addresses in two separate areas (5. Empowering Learners, 6. Facilitating Learners' Digital Competence), DigiComArm enhances clarity and feasibility for local adoption without omitting content.

AI Integration: Accessibility, inclusion, and engagement are strongly connected to AI-supported tools (adaptive learning, accessibility features, personalised pathways), making their integration under one area both pedagogically and technologically coherent.

The descriptors presented here are unified formulations that merge the DigiComArm Concept and DigiComArm base version with contributions from the above-mentioned documents [1-4]. Cross-references are detailed in Annex 7 at the end of this section.

5.1 Key Competence 5.1 – Accessibility and Inclusion

Ensures digital learning opportunities are accessible and inclusive for all learners, including those with special needs. Adapts digital and AI-supported technologies to accommodate diverse learning needs, allowing learners to follow individual learning paths and learn at their own pace.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance..

Competence Descriptor:

Can add basic accessibility features to digital learning materials and activities using basic digital tools and start to apply AI features (*e.g.*, *captions*, *text-to-speech*, *translation*), and adapt resources to suit different learning paces.

Achievement Indicators:

1. Adds captions or subtitles to video materials *(e.g., YouTube, Microsoft PowerPoint, Zoom live captions, or other comparable tools)*.

2. Uses basic accessibility tools (*e.g., alt text, screen readers, text enlargement*) and designs multimodal materials, adapting font size, layout, and formats to support learners with visual or diverse needs (*e.g., Zoom text enlargement, Microsoft Word accessibility checker, Google Docs voice typing, or other comparable tools*).

3. Shares course materials in multiple accessible formats *(e.g., PDFs with readable fonts, MP3 audio, captioned videos, MP4 video via Google Drive, or other comparable tools)*.

4. Experiments with entry-level AI accessibility tools (*e.g., automatic captioning, text-to-speech, translation, or other comparable tools*).

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can integrate digital and AI-supported accessibility tools and inclusive design standards to create adaptable learning environments and personalised learning paths.

Achievement Indicators:

1. Uses accessibility features in learning platforms *(e.g., Microsoft Immersive Reader, Moodle accessibility block, Google Classroom accessibility settings, or other comparable tools*) in course design and delivery.

2. Designs differentiated inclusive activities with branching options *(e.g., H5P branching scenarios, Google Forms sections, Nearpod interactive lessons, or other comparable tools)* for different learner needs.

3. Offers multilingual and adaptive resources *(e.g., Google Translate integration, Read&Write extension, Quizizz language options, or other comparable tools).*

4. Integrates AI-assisted tools (*e.g., translation, subtitling, adaptive formats, or other comparable tools*) with critical oversight to widen access to resources.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can lead institution-wide initiatives to create accessible and inclusive learning frameworks, using advanced digital and AI-powered technologies to address complex accessibility needs, and to watch out that all students are given the same learning opportunities.

Achievement Indicators:

1. Integrates AI-powered accessibility tools *(e.g., Otter.ai, Seeing AI, Microsoft Accessibility Insights, or other comparable tools)* into teaching and learning, ensuring ethical and transparent use.

2. Designs adaptive learning systems for highly personalised paths, dynamically tracking and managing the learning needs of all students *(e.g., Moodle with AI plugins, Khan Academy custom paths, Smart Sparrow, or other comparable tools)*.

3. Evaluates and implements immersive learning solutions *(e.g., Mozilla Hubs, Spatial free tier, CoSpaces Edu, or other comparable tools)* or assistive technologies.

4. Establishes guidelines and policies on accessible and inclusive digital and AI-supported learning environments, ensuring transparency and fairness.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

5.2 Key Competence 5.2 – Engaging Learners

Uses digital and AI-supported technologies to engage learners through creativity and real-world problem-solving.

Proficiency Level: Foundational (Beginner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can use basic digital tools to create simple creative tasks, experimenting cautiously with AI-based engagement features (*e.g., gamification or adaptive quizzes*) to stimulate learner participation and motivation.

Achievement Indicators:

1. Creates simple visual outputs on real-world topics *(e.g., Canva free, Google Drawings, Microsoft Paint 3D, or other comparable tools)* to encourage learner participation.

2. Uses simple digital tools (*e.g., polls, online quizzes, discussion forums, etc.*) and interactive quizzes to present practical problem scenarios *(e.g., Kahoot, Quizlet, Wordwall, or other comparable tools).*

3. Shows short educational videos to spark discussion *(e.g., TED-Ed, YouTube, National Geographic Education, or other comparable tools).*

4. Experiments cautiously with AI-based engagement tools (*e.g., adaptive quiz generators, gamified platforms, or other comparable tools*), reflecting critically on their effects.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Intermediate (Practitioner)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can integrate digital and AI-supported tools to design engaging and collaborative learning activities, implement creative projects and interactive problem-solving activities.

Achievement Indicators:

1. Runs group video or multimedia projects addressing real-world issues *(e.g., Flipgrid, Genially, Canva video, or other comparable tools).*

2. Implements interactive and applied learning activities (*e.g., simulations, collaborative projects*) using digital platforms *(e.g., Nearpod, Minecraft Education, PhET Simulations, or other comparable tools).*

3. Organises online collaborative tools (*e.g., chats, forums, blogs, social networks*) to local problems *(e.g., Miro, Trello, Google, or other comparable tools).*

4. Uses AI-supported tools (*e.g., adaptive quizzes, chatbots for FAQs, recommender systems, or other comparable tools*) with human oversight to personalise engagement.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Proficiency Level: Advanced (Expert)

Proficiency at this level is deemed attained when the competence descriptor is met through demonstration of at least two achievement indicators via documented evidence or observable performance.

Competence Descriptor:

Can lead large-scale creative learning initiatives that connect learners to complex real-world challenges by leveraging digital and AI-supported ecosystems to foster innovation and critical thinking.

Achievement Indicators:

1. Develops (institutional) strategies for digital and AI-supported learner engagement (*e.g., gamified curricula, adaptive pathways, or other comparable tools*).

2. Designs immersive learning simulations for problem-solving *(e.g., CoSpaces Edu, Spatial, Mozilla Hubs, or other comparable tools).*

3. Leads interdisciplinary innovation projects and implements a blended learning environments *(e.g., Figma free, Miro, Google Workspace collaborative docs, or other comparable tools)*.

4. Integrates advanced AI-generated scenarios for complex case studies *(e.g., ChatGPT, Google Gemini, Canva Magic Write, or other comparable tools),* ensuring ethical and transparent use.

5. Engages in similar activities or practices that demonstrably fulfill the competence descriptor's requirements.

Concluding Notes

The DigiComArm framework provides a coherent, contextualised, and future-oriented model for developing the digital and AI competences of higher education educators in Armenia. The following points highlight the rationale behind its structure and its integration of international references:

1. Framework Structure and Simplification

- The DigiComArm framework is organised into five competence areas, with a total of fourteen key competences, ensuring coverage of the core dimensions of educators' digital competence.
- Compared to DigCompEdu [7], DigiComArm introduces several structural adaptations, e.g. learners' empowerment and engagement are unified in Area 5. The separate DigCompEdu's Area 6 (Facilitating Learners' Digital Competence) is not maintained as a standalone domain - instead, its content is embedded across DigiComArm's Areas 3, 4, and 5.
- This simplification reflects the findings of the DigiComArm Policy Paper/Concept [5], which emphasized the importance of practical usability, institutional feasibility, and prioritisation of assessment, feedback, and inclusion in Armenian higher education.

2. Integration of International Frameworks

- DigCompEdu - European Framework for the Digital Competence of Educators: served as a main basis for the structure, content and level characteristics of DigiComArm.
- DigComp 3.0 - Validation Workshop: provided transversal AI literacy dimensions (Engage, Create, Manage, Design), ensuring that AI awareness, critical use, and governance are explicitly integrated into descriptors and indicators.
- DigCompEdu AI Supplement (AI Pioneering Project): contributed explicit competences for educators regarding AI-supported pedagogy, adaptive systems, and ethical classroom integration, ensuring relevance for teaching and learning contexts.
- UNESCO AI Competence Framework for Teachers: offered principles of ethical, inclusive, and professional AI use, with an emphasis on fairness, accessibility, and cultural diversity. These elements reinforce DigiComArm's commitment to equity.
- The Cyber Humanities Manifesto: grounded the framework in values of human agency, cultural commons, inclusivity, and digital sovereignty, ensuring that the Armenian framework is not only technologically aligned but also socially and culturally rooted.

3. Contextual Relevance and Feasibility

- While grounded in international standards, the descriptors and indicators were carefully rephrased to reflect tools, practices, and conditions familiar in Armenian higher education, ensuring the feasibility of implementation.
- Five achievement indicators are defined per level, to explicitly represent technical, pedagogical, ethical/cultural and AI-support dimensions, ensuring a holistic and balanced approach.
- The framework is designed as both a guiding tool for policy and a practical instrument for educators and institutions, enabling phased adoption and alignment with national priorities in higher education modernisation.

4. Positioning and Future Directions

- DigiComArm positions Armenia within the broader European and global digital competence landscape, while recognising the need for contextual adaptation.
- It establishes a platform for future updates, particularly regarding the rapid evolution of generative AI, ethical challenges, and the ongoing development of digital education policy in Europe and globally.

To further highlight the distinctive contribution of DigiComArm within the international landscape, Annex 8 provides a comparative overview of the framework and its main references. This synoptic view illustrates how DigiComArm ensures alignment with established standards while introducing structural simplifications, expanded achievement indicators (five dimensions: technical, pedagogical, ethical/cultural and AI-support), and explicit AI integration across all areas. Moreover, DigiComArm is explicitly grounded in cultural and contextual relevance for Armenian higher education [6], ensuring feasibility and sustainability, while embracing the values of agency, inclusivity, and the digital commons.

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Annexes

Annex 1.

Table 1: Alignment of DigiComArm's Area 1 key competences 1.1 and 1.2 with DigComp 3.0 - Validation Workshop, DigCompEdu AI Supplement (AI Pioneering Project), UNESCO AI Competency Framework for Teachers, and The Cyber Humanities Manifesto.

Key Competence	Level	DigiComArm	DigComp 3.0	DigCompEdu+AI Pioneering	UNESCO AI-CF	Cyber Humanities Manifesto
1.1 Communication and Collaboration	**Beginner**	Professional messaging & basic resource sharing in locally used platforms; forum/group participation; basic accessibility.	**Engage** (transversal AI awareness): safe, inclusive participation; human oversight when using AI-mediated channels; provenance awareness.	Awareness of conversational AI for communication support; do not rely exclusively on AI; basic data/ privacy hygiene.	AI in professional practice (entry): use AI assistants cautiously; inclusivity in AI-mediated comms.	Shared agency; treat digital exchanges as cultural commons; inclusivity by design.
	Practitioner	Co-creation on shared docs; organise online meetings; share cases in communities; review sources/licensing.	**Create/Manage**: collaborative content creation with AI support; accessibility & UDL; manage contributions and data responsibly.	AI-assisted co-editing/ translation/subtitling to widen access; documented decision-making.	Applying AI in communities of practice; accessibility features; reflective use.	Democratise knowledge production; critical reflection on tool mediation.
	Expert	Design/govern collaboration systems across institutions; evaluate effectiveness with analytics; publish OER.	**Design/Manage**: governance of collaboration infrastructures; evaluation frameworks; accountability, transparency, data stewardship.	Lead AI-integrated networks (knowledge bases, copilots); assess bias, privacy, overdependence.	AI governance in professional practice; policy-aware leadership.	Digital sovereignty; ethical governance of cultural-technical ecosystems.
1.2 Continuous Professional Digital Development	**Beginner**	Follow tutorials/webinars; subscribe to PD updates; keep structured notes; set small improvement goals; experiment with entry-level AI tools; reflect on AI's influence on professional identity.	**Engage**: baseline AI awareness; risks/benefits; reflective stance on AI's impact on practice.	Intro AI literacy for teachers; recognise opportunities/limits of AI in PD.	Teacher professional learning with AI (entry); understand basic AI concepts.	Critical self-reflection; cultural relevance of sources.
	Practitioner	Structured CPD via online courses; ad- apt methods to local context; portfolio + peer feedback; periodic self-assessment.	**Create/Manage**: design CPD pathways; use AI-enabled analytics/portfolios; evidence-informed improvement cycles.	Include AI modules in CPD; implement at least one AI-supported activity; build evidence-based portfolio.	Participate in AI-related training; apply AI in lesson design/evaluation.	Reflexivity, peer exchange; plural knowledge practices.
	Expert	Lead PD initiatives; mentor colleagues; publish/share practice; organise workshops/ webinars.	**Design**: plan & govern PD ecosystems; policy alignment; quality assurance for AI in PD; sustainability.	Lead ethical AI PD; micro-credentials; institutional capacity building on AI.	Promote systemic, responsible AI use in teacher PD; contribute publicly.	Human-centred leadership; commons-oriented dissemination.

Annex 2.

Table 2: Alignment of DigiComArm's Area 2 key competences 2.1 and 2.2 with DigComp 3.0 - Validation Workshop, DigCompEdu AI Supplement (AI Pioneering Project), UNESCO AI Competency Framework for Teachers, and The Cyber Humanities Manifesto.

Key Competence	Level	DigiComArm	DigComp 3.0	DigCompEdu+AI Pioneering	UNESCO AI-CF	Cyber Humanities Manifesto
2.1 Selecting Digital Resources	**Beginner**	Search and select basic resources (texts, videos) from trusted sources; initial checks on relevance, credibility, accessibility.	**Engage**: baseline AI awareness; provenance and reliability; safe, inclusive participation in AI- mediated search.	Entry use of AI-supported search/recommendation; do not rely exclusively on AI; basic data/privacy hygiene.	Professional practice (entry): identify credible sources; understand basic AI tool limits in selection.	Cultural relevance and inclusivity as selection criteria; commons-oriented view of resources.
	Practitioner	Critically compare and select multi-format resources; apply quality and licensing criteria; use institutional repositories.	**Create/Manage**: apply quality, licensing, accessibility, UDL; manage datasets/metadata responsibly.	Validate AI-curated/translated/ summarised items before use; adapt to local context and students' needs.	Apply AI in teaching/ learning with reflective evaluation; accessibility features.	Critical appraisal of tool mediation; plural knowledge practices.
	Expert	Lead selection and curation processes; set guidelines; mentor peers; curate OER collections.	**Design/Manage**: governance of curation workflows; evaluation frameworks; transparency/ accountability.	Lead AI-augmented curation (knowledge bases, copilots); assess bias and over-dependence risks.	AI governance in resource curation; policy-aware leadership.	Digital sovereignty; ethical governance of cultural-technical eco- systems.
2.2 Creating and Modifying Digital Resources	**Beginner**	Create/adapt simple materials (slides, docs); initial attention to accessibility and copyright.	**Engage**: awareness of inclusive formats; basic accessibility (captions/alt text).	Entry use of AI generators/ captioners with human oversight and source acknowledgement.	Ethical/responsible use of AI in content creation (entry).	Recognition of resources as cultural artefacts; inclusivity by design.
	Practitioner	Design interactive materials; adapt formats to needs; apply open licences.	**Create/Manage**: design for accessibility and UDL; manage versions/metadata.	Use AI for personalisation (TTS, adaptive quizzes, translation); validate accuracy and equity.	Apply AI for T&L innovation with safeguards; address inclusion.	Democratise production of knowledge; critical reflection on generative tools.
	Expert	Lead high-quality digital object creation; set institutional standards; mentor peers.	**Design**: institutional guidelines (accessibility, IP, open licensing); quality assurance.	Integrate AI responsibly in advanced objects (adaptive feedback, generative with oversight).	Policy-aligned, responsible AI use; capacity building.	Commons-oriented dissemination; stewardship of cultural infrastructures.

Annex 3.

Table 3: Alignment of DigiComArm's Area 2 key competences 2.3 and 2.4 with DigComp 3.0 - Validation Workshop, DigCompEdu AI Supplement (AI Pioneering Project), UNESCO AI Competency Framework for Teachers, and The Cyber Humanities Manifesto.

Key Competence	Level	DigiComArm	DigComp 3.0	DigCompEdu+AI Pioneering	UNESCO AI-CF	Cyber Humanities Manifesto
2.3 Managing, Protecting and Sharing Digital Resources	**Beginner**	Store/share with simple foldering and permissions; basic protective measures.	**Engage**: awareness of privacy, security, provenance in sharing.	Entry use of AI-enhanced organisation (auto-tagging); check privacy/accuracy.	Entry understanding of data protection and safe sharing.	Care for common goods; initial sensitivity to data as cultural asset.
	Practitioner	Manage course repositories; apply versioning, metadata, naming; ensure licensing compliance.	**Create/Manage**: systematic organisation; data minimisation; accessibility-by-default.	Use AI classifiers/search to organise/retrieve; validate outputs and respect data protection.	Responsible AI-supported management; equity and access.	Sustainable practices; transparency in organisational choices.
	Expert	Design institutional systems and policies; lead OER platforms; ensure compliance and sustain- ability.	**Design/Manage**: governance, stewardship, auditability; longterm sustainability.	Lead AI-enhanced repositories (semantic search, recs) with risk assessment.	Policy leadership on AI, IP, data privacy, accessibility.	Digital sovereignty; governance of commons and cultural infrastructures.
2.4 Responsible Use of Digital Resources	**Beginner**	Apply basic responsibility: cite sources, use licensed/open materials, simple safety practices.	**Engage**: recognise risks/benefits; basic ethics and inclusion.	Experiment with AI (chatbots/ suggestions) with critical reflection and human oversight.	Ethical, safe, inclusive use (entry); understand AI limits.	Agency and inclusion; respect cultural context.
	Practitioner	Guide students/colleagues on ethics, inclusion, licensing; evaluate AI content before use.	**Create/Manage**: embed accessibility, licensing, and fairness in practice.	Teach critical evaluation of AI outputs; discuss risks (bias, opacity) and opportunities.	Apply ethical AI in pedagogy; promote digital rights and well-being.	Plural knowledge, reflective dialogue on tool mediation.
	Expert	Design and lead institutional strategies/ policies on ethical use; train staff/students; engage nationally.	**Design**: policy alignment; accountability, transparency; sustainability.	Institutional capacity building; micro-credentials; oversight of AI use.	Promote systemic, responsible AI use in HE; public contribution.	Human-centred leadership; commons oriented policy.

Annex 4.

Table 4: Alignment of DigiComArm's Area 3 key competences 3.1 and 3.2 with DigComp 3.0 - Validation Workshop, DigCompEdu AI Supplement (AI Pioneering Project), UNESCO AI Competency Framework for Teachers, and The Cyber Humanities Manifesto.

Key Competence	Level	DigiComArm	DigComp 3.0	DigCompEdu+AI Pioneering	UNESCO AI-CF	Cyber Humanities Manifesto
3.1 Instructional Design and Teaching	**Beginner**	Design simple digital activities (slides, basic quizzes); include OER; basic accessibility; cautious entry AI use.	**Engage**: baseline AI awareness; inclusive and accessible planning; provenance of materials.	Entry AI for planning/quiz drafting with human oversight; basic risk awareness.	Ethical, inclusive design (entry); understand limits of AI in teaching.	Cultural relevance; inclusivity-by-design in lesson planning.
	Practitioner	Design and orchestrate sequences in LMS; adapt to diversity; share practices.	**Create/Manage**: UDL, learning analytics to refine design; responsible data handling.	Use AI for adaptive quizzes/ dashboards; validate outputs and alignment.	Apply AI for T&L with reflective evaluation; accessibility features.	Co-creation and critical reflection on tool mediation.
	Expert	Lead innovative digital/ AI teaching models; set guidelines; evaluate AI models; mentor peers.	**Design/Manage**: governance of instructional models; transparency, accountability, QA.	Lead AI integration and policy; bias/privacy risk assessment.	AI governance in pedagogy; policy-aware leadership.	Cultural sustainability; commons-oriented instructional ecosystems.
3.2 Academic Guidance and Support	**Beginner**	Provide basic support via email/LMS; share FAQs; cautious AI draft- ing; promote reliable re-sources.	**Engage**: safe, respectful, inclusive communication; privacy awareness.	Entry AI assistants for drafting with human verification.	Professional practice (entry); ethical support habits.	Respectful dialogue; initial agency and inclusion.
	Practitioner	Structured feedback on platforms; language/ accessibility support; foster autonomy and critical AI awareness.	**Create/Manage**: feedback workflows; accessibility-by-default.	Personalised suggestions with AI; validate and document decisions.	Ethical AI in academic support; well-being and inclusion.	Support student agency; plural pathways.
	Expert	Design advising systems; responsibly integrate analytics; train staff/ students; promote agency.	**Design/Manage**: governance, fairness, transparency of support systems.	Oversight of predictive analytics; mentoring on responsible AI use.	Policy-aware leadership on AI in guidance; rights and equity.	Commons-oriented support; digital sovereignty.

Annex 5.

Table 5: Alignment of DigiComArm's Area 3 key competences 3.3 and 3.4 with DigComp 3.0 - Validation Workshop, DigComp Edu AI Supplement (AI Pioneering Project), UNESCO AI Competency Framework for Teachers, and The Cyber Humanities Manifesto.

Key Competence	Level	DigiComArm	DigComp 3.0	DigCompEdu+AI Pioneering	UNESCO AI-CF	Cyber Humanities Manifesto
3.3 Collaborative Learning	**Beginner**	Introduce simple online group tasks; share notes/ links; entry AI for summarisation/ translation; set respectful norms.	**Engage**: inclusive participation; safe collaboration.	Entry AI to facilitate communication with human review.	Inclusive, ethical collaboration (entry).	Commons mindset; shared responsibility.
	Practitioner	Orchestrate collaborative projects on shared platforms; peer feedback/ co-assessment; adapt to diversity.	**Create/Manage**: co-construction workflows; assessment integration.	Use copilots/brainstorming aids with critical review; document roles.	Reflective AI use in group learning; accessibility.	Plural knowledge practices; critical mediation.
	Expert	Lead cross-institutional projects; integrate intelligent environments; evaluate with analytics; mentor peers.	**Design/Manage**: governance of collaborative ecosystems; evidence-informed improvement.	Assess bias/transparency in AI- supported collaboration; capacity building.	AI governance for collaboration; policy contribution.	Cultural-educational commons; sustainable collaboration.
3.4 Supporting Autonomous Learning	**Beginner**	Suggest resources; encourage LMS use; introduce AI study aids; simple selfmonitoring.	**Engage**: awareness of AI limits/benefits; basic self-regulation.	Entry AI tools for study with guidance and verification.	Independent learning (entry) with basic AI literacy.	Student agency; responsible tool use.
	Practitioner	Design self-paced LMS modules; goals and progress via dashboards; peer exchange.	**Create/Manage**: learning pathways; analytics for reflection.	Support self-regulation with AI (translation, adaptive quizzes, recs) and validation.	Apply AI for personalisation with safeguards; inclusion.	Autonomy with reflective dialogue; plural routes.
	Expert	Design institutional approaches; responsibly integrate tutoring/ analytics; publish; mentor.	**Design/Manage**: governance of pathways; QA and sustainability.	Capacity building, micro-credentials; oversight of AI in SRL.	Systemic, responsible AI in lifelong learning; public contribution.	Digital sovereignty; lifelong learning as commons.

Annex 6.

Table 6: Alignment of DigiComArm's Area 4 key competences 4.1 and 4.2 with DigComp 3.0 - Validation Workshop, DigCompEdu AI Supplement (AI Pioneering Project), UNESCO AI Competency Framework for Teachers, and The Cyber Humanities Manifesto.

Key Competence	Level	DigiComArm	DigComp 3.0	DigCompEdu+AI Pioneering	UNESCO AI-CF	Cyber Humanities Manifesto
4.1 Assessment	**Beginner**	Create quizzes/ assignments in LMS; basic criteria; cautious AI features; accessibility.	**Engage**: awareness of fairness, inclusivity, provenance of AI-assisted scoring.	Entry AI grading/plagiarism tools with human oversight.	Fair, ethical, transparent assessment (entry level).	Assessment as cultural practice; inclusivity from start.
	Practitioner	Design mixed-mode assessments; adapt to diversity; integrate analytics; share rubrics.	**Create/Manage**: formative + summative balance; responsible data use; adaptive methods.	Use adaptive testing, analytics dashboards; validate reliability.	Equity, inclusion, formative assessment with AI.	Reflexivity and plurality in evaluation practices.
	Expert	Lead institutional digital/AI assessment policies; integrate advanced systems; publish case studies; mentor peers.	**Design/Manage**: governance of assessment ecosystems; accountability, transparency.	Lead AI adoption for assessment; risk analysis (bias, over- reliance).	Systemic AI governance in assessment; policy contribution.	Assessment as commons; sovereignty, ethical governance.
4.2 Feedback and Improvement	**Beginner**	Provide simple feedback via LMS; entry AI drafting with human review; promote reflection.	**Engage**: transparent, respectful, inclusive feedback.	Entry AI prompts for drafting comments; human validation.	Feedback as ethical practice (entry); student-centred.	Feedback as dialogic practice; inclusivity by design.
	Practitioner	Structured, personalised feedback; integrate analytics; encourage peer/ self-assessment; adapt teaching.	**Create/Manage**: integrate AI-assisted feedback; use evidence to improve teaching.	Adaptive feedback tools; documented decision-making.	Formative AI use in evaluation; responsible personalisation.	Feedback as co-construction; peer dialogue.
	Expert	Institutional strategies; integrate AI systems (adaptive, sentiment); publish/share practices; mentor peers.	**Design/Manage**: governance of feedback ecosystems; QA, sustain-ability.	Lead ethical use of AI in feedback; micro-credentials.	Policy-aware systemic AI feedback practices; inclusivity.	Commons-oriented improvement; ethical-cultural sustainability.

Annex 7.

Table 7: Alignment of DigiComArm's Area 5 key competences 5.1 and 5.2 with DigComp 3.0, DigCompEdu+AI Pioneers, UNESCO AI-CF, and the Cyber Humanities Manifesto.

Note: DigiComArm Area 5 combines elements of DigCompEdu Area 5 (Empowering Learners) and Area 6 (Facilitating Learners' Digital Competence). This structural adaptation reflects the Armenian higher education context, where accessibility, inclusion, and engagement are treated as a unified competence area rather than separate domains.

Key Competence	Level	DigiComArm	DigComp 3.0	DigCompEdu+AI Pioneering	UNESCO AI-CF	Cyber Humanities Manifesto
5.1 Accessibility and Inclusion	**Beginner**	Provide resources in accessible formats; use basic accessibility functions; entry AI features (captions, TTS).	**Engage**: baseline inclusivity; apply accessibility features; AI awareness for equity.	Entry AI tools for accessibility (captions, translation) with human oversight.	Inclusion and diversity (entry); equity principles.	Commons as inclusive spaces; respect for diversity.
	Practitioner	Design inclusive activities; integrate AI tools (translation, subtitling, adaptive formats); peer sharing.	**Create/Manage**: inclusive activity design; critical evaluation of AI fairness.	Adaptive formats and AI personalisation to widen access.	Equity and fairness in AI-supported learning; cultural diversity.	Plural knowledge practices; inclusivity by design.
	Expert	Lead institutional initiatives; set guidelines/ policies; integrate advanced AI responsibly; publish.	**Design/Manage**: governance of inclusive ecosystems; QA; sustain-ability.	Institutional adoption of AI for accessibility; risk mitigation.	Policy-level leadership; systemic equity and inclusion.	Digital sovereignty; accessibility as cultural commons.
5.2 Engaging Learners	**Beginner**	Use simple digital tools (polls, quizzes, forums); cautious entry AI gamification; foster respectful interaction.	**Engage**: motivate learners; ensure safe, inclusive participation.	Basic AI engagement tools (quiz generators, chatbots) with oversight.	Learner motivation and participation (entry); ethical engagement.	Learner agency; inclusivity by design.
	Practitioner	Design interactive/ collaborative activities; use AI for personalisation; peer learning; reflection on AI.	**Create/Manage**: design engaging activities; adapt with analytics and AI.	Use recommender systems, adaptive quizzes, copilots with critical reflection.	AI-supported learner engagement; reflective practice.	Agency through co-construction; critical mediation.
	Expert	Lead institutional strategies for engagement; integrate advanced AI systems; publish and mentor.	**Design/Manage**: governance of engagement ecosystems; accountability and transparency.	Advanced AI integration (analytics, gamification) with ethics; capacity building.	Policy-aware systemic strategies for engagement; equity.	Learner agency as commons; sustainable cultural engagement.

Annex 8.

Table 8: Comparative overview of DigiComArm and its main reference frameworks.

Note: DigiComArm Area 5 is the result of merging DigCompEdu Areas 5 and 6 into a single domain. This adaptation ensures feasibility and prioritises accessibility, inclusion, and engagement as integrated competences in Armenian higher education.

Dimension	DigiComArm	DigCompEdu + AI Pioneering	DigComp 3.0	UNESCO AI-CFT	Cyber Humanities Manifesto
Structure	5 Areas, 14 Key Competences. Simplified for Armenian HE.	6 Areas, 22 Competences. AI Pioneers adds explicit AI.	5 Areas, 21 Competences. Citizenfocused.	3 Dimensions, 10 Competences. Global teacher focus.	5 Principles. Normative framework.
Assessment & Feedback	Unified in Area 4 (Assessment + Feedback).	Area 4 = Assessment only.	Covered in *Manage* + *Design*.	Ethical, transparent AI in evaluation.	Reflexivity; feedback as co-construction.
Learner Empowerment	Area 5 = Accessibility + Inclusion + Engagement (no Area 6).	Area 5 Empowering Learners; Area 6 Facilitating Learners' DC.	*Engage / Design* → empowerment.	AI for inclusion, diversity, participation.	Agency, inclusivity, digital commons.
AI Integration	Transversal across all areas; explicit tools + ethics.	AI dimension added in Pioneers extension.	AI literacy in Engage, Create, Manage, Design.	AI ethics, inclusivity, pedagogy.	Human-centred, sovereignty, cultural grounding.
Achievement Indicators	5-6 per descriptor: technical, pedagogical, ethical, cultural.	3 per descriptor, practice-oriented.	No indicators; broad descriptors.	General indicators for teacher competences.	Values and principles, no indicators.
Contextual Adaptation	Armenian HE focus; simplified, feasible.	EU educator focus.	General digital literacy model.	Global teacher competence focus.	Universal normative values.
Innovation	Accorpamenti; 5-6 indicators; AI embedded; cultural relevance.	Pedagogical AI competences emerging.	Generic digital literacy baseline.	Ethics, inclusion, diversity.	Commons, agency, cultural sovereignty.

Annex 9.

Main Competence Areas and Key Competences of DigiComArm - Armenian Digital Competence Framework for Educators in Higher Education

Educator's Digital, Transversal and Pedagogic/Didactic Competences (The competences educators need to foster effective, interactive, innovative and inclusive learning process by using digital tools & technologies)				
Area 1. Professional Engagement & Development: Using digital technologies for communication, collaboration and professional development	**Area 2. Digital Resources & Content Creation:** Sourcing, creating, and sharing digital resources	**Area 3. Teaching & Learning:** Managing & instrumenting the use of digital technologies in T&L	**Area 4. Assessment & Feedback:** Using digital technologies and strategies to enhance assessment	**Area 5. Empowering & Engaging Learners:** Using digital technologies to enhance inclusion, personalisation and learners' active engagement
1.1. Communication & collaboration ● Use digital technologies for communication and collaboration, exchange of knowledge & experiences, and pedagogical practice & innovation	**2.1. Selecting digital resources** ● Select digital resources aligned with learning objectives, pedagogical strategies, and learner needs ● Use, create and share Open Educational Resources (OER) with awareness of licensing (New!)	**3.1 Instructional design & teaching** ● Use digital technologies to promote inclusive and engaging learning experiences ● Integrate generative AI tools to personalise teaching approaches (New!)	**4.1 Assessment** ● Use digital technologies for formative & summative assessments ● Enhance diversity and adequacy of assessment formats & methods	**5.1 Accessibility & inclusion** ● Ensure digital learning opportunities are accessible and inclusive for all learners (including those with special needs) ● Adapt digital technologies to accommodate diverse learning needs, allowing learners to follow individual learning paths and learn at their own pace
1.2. Continuous Professional Digital and AI Development ● Reflect on, develop and evolve digital pedagogical practices ● Use digital sources for ongoing professional growth	**2.2. Creating & modifying digital resources** ● Modify and create new digital educationnal resources in multiple formats ● Support learners in developing their own digital content in different formats[1]	**3.2 Academic guidance & support** ● Use digital platforms to provide guidance & support to learners (individually & collectively), within and outside the classroom ● Enable learners to use, navigate, and critically evaluate the credibility of information in digital environments[10]	**4.2 Feedback & improvement** ● Interpret digital data on learner performance to inform assessments and adapt teaching strategies ● Promote learner engagement through targeted feedback	**5.2 Engaging learners** ● Use digital technologies to engage learners through creativity and real-world problem-solving[2]
	2.3. Managing digital resources ● Organise and curate digital materials, make it available to learners ensuring copyright compliance, and privacy	**3.3 Collaborative learning** ● Use digital technologies to promote learners' collaboration and knowledge		

[1] From DigCompEdu's Area 6

[2] From DigComp-3.0

		sharing both within and beyond the classroom		
	2.4. Responsible use of digital resources[10] ● Promote learners' awareness of digital rights and sources referencing ● Guide learners in ethical, safe and well-being-oriented use of digital resources & technologies	**3.4 Supporting autonomous learning** ● Foster learners metacognitive and self-regulated learning ● Empower learners to monitor their learning through digital self-assessment and reflection		

Annex 10.

Proficiency Levels of DigiComArm

Level	Descriptor	Cognitive Stage (Bloom's Taxonomy)
Foundational (Beginner)	**Basic digital practices:** • Engages in basic digital practices • Assimilates new information and applies essential tools in routine teaching and learning contexts	**Remembering/Understanding:** Focus on awareness, compliance, and initial application
Intermediate (Practitioner)	**Integrated digital tools for pedagogy:** • Integrates digital tools purposefully into pedagogy • Adapts practices and reflects on their impact • Collaborates with others	**Applying/Analyzing:** Emphasis on adaptation, analysis, and collaborative practices
Advanced (Expert)	**Leadership in digital education:** • Demonstrates leadership in digital education • Critiques practices • Mentors peers • Designs innovative strategies	**Evaluating/Creating:** Leadership in innovation, systemic design, and mentoring