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从数字化到人工智能赋能——

全球南方高等教育的未来

From Digitalisation to AI Empowerment —

The Future of Higher Education in the Global South

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《从数字化到人工智能赋能——全球南方高等教育的未来》

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摘 要

近年来，全球南方高等教育在数字化与人工智能应用方面取得一定进展，网络、设备等基础条件逐步改善，线上教学与数字工具应用更加普遍。但在实际推进中，能力不足、统筹不够、落地不畅等问题依然突出，技术红利尚未充分转化为教学实效。

自2022年以来联合国教科文组织高等教育创新中心与联合国教科文组织的一类机构、地区办事处、国际组织、科研机构通过多边合作开展了七份高等教育数字化转型主题的区域及次区域研究报告，对全球南方高等教育数字化转型的发展现状做了研究，本报告基于七份区域及次区域研究报告的成果，聚焦高等教育从业者数字胜任力与院校数字化支撑能力两大视角，分析全球南方不同区域与院校的数字化实践差异、现实困境与可行路径。研究显示，全球南方数字化进程进展极不均衡：部分国家依托顶层设计与统一平台实现规模化推进，更多国家与院校仍面临设施不足、能力薄弱、机制不顺等现实难题，进而形成差异化的转型路径与实施效果。

综合来看，全球南方高等教育数字化与人工智能转型整体由基础数字化向智能化应用迈进，但区域推进节奏与深度差异显著；发展进程路径多元，主要受从业者数字胜任力与院校支撑条件直接影响；政策要求与课堂实践脱节现象普遍存在，制约转型走深走实；从业者数字技能参差不齐，持续培训不足，人工智能教学应用能力偏弱；院校层面统筹不足、保障不够，优质实践难以复制推广与长效运行；多边合作、平台共建与区域联动则是弥补短板、扩大成效的关键支撑。

立足上述问题，报告提出六项务实行动方向：围绕数字胜任力为高等教育从业者提供常态化、可持续的专业发展支持；将数字教学创新纳入教师激励与晋升体系，提升参与动力；尊重一线教学实际，以教师为主体开展本土化、可落地的能力建设；完善院校治理与统筹机制，提升数字化转型的规划力与执行力；加快补齐网络、设备、平台等基础短板，建设互惠共享的数字条件；推动多方协同与产教务实合作，构建多层次、可持续的数字化支撑能力。

上述行动可为全球南方国家制定数字化转型政策、推进院校落地实施提供参考，助力高等教育朝着更公平、更务实、更可持续的方向发展。

目录

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第一部分

引言

报告研究范围

自2023年以来，联合国教科文组织高等教育创新中心（以下简称“创新中心”）联合教科文组织各地区办事处及高等教育机构和相关机构专家，围绕全球南方多个区域及次区域（非洲、东南亚、南亚、拉美及加勒比地区、阿拉伯地区、中亚、东亚）开展高等教育数字化与人工智能（AI）转型现状、问题和未来的联合研究。

通过上述合作形成并发布了七份区域及次区域专项研究报告，报告名称及主要负责机构包括：

·《中亚数字产业人才和高等教育数字化研究报告》，塔什干信息技术大学(TUIT)和兰州大学中亚研究所；

·《东南亚地区高等教育数字化转型报告》，联合国教科文组织曼谷办事处；

·《东亚的数字化飞跃：高等教育转型的区域综合报告》，联合国教科文组织东亚办事处；

·《南亚地区高等教育数字化转型报告》，联合国教科文组织曼谷办事处；

·《非洲高等教育中的数字化与人工智能应用：一项探索性研究》，联合国教科文组织非洲能力建设国际研究所 (IICBA)；

·《重塑拉丁美洲及加勒比地区高等教育的数字化格局》，联合国教科文组织拉丁美洲及加勒比高等教育研究所 (IESALC)；

·《阿拉伯地区高等教育教学数字化转型报告》，阿拉伯联盟教育、文化及科学组织 (ALECSO)。

研究方法

上述报告以广泛调研与案例分析为支撑，覆盖全球南方各区域主要国家，并抽样调研了大量高等院校，采纳了实践案例，具体情况如下：

《中亚数字产业人才和高等教育数字化研究报告》调研覆盖了中亚5个国家，15所高等院校，9家机构；

《东南亚地区高等教育数字化转型报告》调研覆盖了东南亚11个国家，3个国家级案例，35份国家政策文件；

《东亚的数字化飞跃：高等教育转型的区域综合报告》调研覆盖了东亚4个国家，27所高等院校，27家机构，8家企业；

《南亚地区高等教育数字化转型报告》调研覆盖了南亚6个国家，12个院校案例；

《非洲高等教育中的数字化与人工智能应用：一项探索性研究》调研覆盖了非洲27个国家，429所高等院校，13个院校案例；

《重塑拉丁美洲及加勒比地区高等教育的数字化格局》调研覆盖了拉美4个国家，9家机构，12所高等院校；

《阿拉伯地区高等教育教学数字化转型报告》调研覆盖了阿拉伯地区10个国家，15家院校。

本报告以案例式实证分析为主要研究方法，通过对七份区域及次区域报告中代表性国家及院校的实践案例进行分析、归纳与判断，基于个案进行整体研究并提炼出共性特征、区域差异与发展模式，最终形成综合性再研究报告，为全球南方国家高等教育数字化战略规划、政策制定与务实合作提供重要参考依据。

报告局限性

与同类研究报告一致，本报告亦存在一定局限性。本报告仅从高等教育从业人员数字胜任力与院校数字化支撑能力两大视角展开分析，并基于七份区域及次区域研究报告中的部分代表性案例进行归纳分析，未必能够全面反映所有南方国家、院校及不同发展阶段的全部特征与具体实践。

1.1 背景与现状

数字化转型正深刻重塑全球高等教育格局，人工智能（AI）在教学、学习及院校管理中的作用也日益受到关注。在全球南方，这一发展进程正在多元的社会经济背景下展开。在应对新兴技术发展的同时，扩大数字基础设施覆盖范围仍是各方的优先任务。

近年来，全球南方高等教育发展的重心已从单纯扩大数字准入，转向构建更为系统且日益深化的数字化与AI赋能的发展路径。然而，这一进程并不均衡：部分国家的高等教育正朝着协同化、数据驱动的模式迈进；与之相对，另一些国家仍致力于解决基础设施、网络连接及数字能力等基础性挑战。“夯实基础能力”与“推进深层转型”并行的双重动态，构成了当前诸多地区发展的核心特征。

1.2 报告宗旨与涵盖范围

本报告根据联合国教科文组织在高等教育数字化领域的若干文件，以及由创新中心[1]联合联合国教科文组织各地区办事处、高等教育机构和相关机构专家多边合作共同发布的七份覆盖范围广泛的区域及次区域研究报告（报告范围涵盖东亚、南亚、东南亚、中亚、阿拉伯地区、非洲，以及拉丁美洲和加勒比地区），旨在对全球南方高等教育的数字化与AI赋能的转型及实践案例进行比较性综述及分析，识别出转型过程中的共性规律、核心挑战及优先行动事项，并重点探讨了影响转型成效的两大因素——高等教育从业人员数字胜任力与院校数字化支撑能力。

本报告所依据的七份区域及次区域研究报告全文及链接，详见文末参考文献。

1.3 创新中心以技术驱动高等教育赋能引领转型的实践

在推进数字化转型进程中，创新中心始终以提升高等教育领域的技术应用能力为工作重点，旨在通过新兴技术赋能教与学。中心聚焦赋能高等教育机构和教师的数字化与AI应用和融合能力，以提升教育质量、促进教育公平。

同时，创新中心依托国际网络教育学院（International Institute of Online Education，IIOE）[2]及IIOE国家中心[3]、IIOE高等教育数字化先锋案例奖[4]及IIOE联盟等多边合作伙伴关系与多元平台，全方位支持高等教育从业人员专业发展的数字化和AI能力建设，促进知识共享，并致力于打造可推广、可复制的数字化赋能模式。这些深厚的实践积淀，为本报告的分析提供了重要的实践基础。

1.4 报告结构

本研究报告内容安排如下：第二部分概述了高等教育向AI赋能演进趋势，并阐明了本报告的分析框架；第三部分从高等教育从业人员数字胜任力与院校数字化支撑能力两大视角切入，深入探讨不同国家和区域发展呈现的共性规律；第四部分剖析了制约转型的核心挑战；第五部分则提出了战略性行动优先事项。

1. 欲了解更多关于联合国教科文组织高等教育创新中心的信息，请访问：https://en.ichei.org/。

2. 国际网络教育学院（IIOE）官方网站访问地址为：https://www.iioe.org/#/home-v?id=182154。

3. IIOE国家中心：IIOE在重点项目国家与伙伴院校联合成立IIOE国家中心，在所在国政府（高等教育主管部委）的支持下，构建全 国性的高校网络，依托IIOE平台和课程本地化实施IIOE培训。

4. IIOE高等教育数字化先锋案例奖：先锋奖是一项由伙伴企业出资赞助、创新中心主导的公益奖项。

第二部分

高等教育从数字化迈向AI赋能的全球模式

2.1 高等教育从数字化迈向AI赋能

在全球南方，高等教育数字化转型处于不同的发展阶段。早期阶段主要聚焦于数字基础设施建设以及在线和远程学习的推广，当前正逐步转向更加系统化的综合发展阶段，即数字技术与AI技术正深度嵌入教学、学习和院校运营的核心流程之中。[1]

这一转变可被视为从“数字接入”到“整合应用”，并日益迈向“AI赋能”的持续演进过程，其具体体现为数据系统与AI的深度融合和广泛应用。在后疫情时代背景下，高等教育系统正从应急响应模式，转向更具主动性、系统性与战略性的数字化转型路径。

根据中国教育部发布的报告《无限的可能——世界高等教育数字化发展报告》，2025 年标志着智慧教育元年的开启。生成式人工智能（Generative AI）和教育垂直领域大模型等智能技术的集群性突破，正在重新定义人类与人造工具的能力边界。这标志着全球教育已迎来一个历史性的临界点，正从 “数字化适应”阶段迈向“智能化跃升”阶段 。[2]

然而，这一进程并不均衡。一方面，部分国家或地区已开始探索数据驱动和AI赋能的发展路径；另一方面，仍有一些国家和地区将重点放在发展网络联接、基础设施与数字接入等的基础性挑战上。这些差异在很大程度影响了各国高等教育数字化发展的进程和路径。世界银行的研究强调，最不发达国家的高等教育机构在数字基础设施与师生素养方面仍存在显著短板，由此形成的能力鸿沟如果得不到有效弥合，本应促进公平的数字化进程反而可能加剧既有的不平等。[3]

2.2 两大分析视角：高等教育从业者数字胜任力及院校数字化支撑能力

高等教育数字化与AI赋能转型的进程，既离不开人的能力支撑，也离不开包括制度、基础设施等在内的机构数字化支撑能力保障。人员与院校两个层面的能力以及准备水平，很大程度上决定着转型的深度、广度和可持续性。

基于七份区域及次区域研究报告的实证发现，并参考联合国教科文组织（United Nations Educational, Scientific and Cultural Organization，UNESCO）《教师人工智能能力框架》《教师信息与通信技术能力框架》、经济合作与发展组织（Organisation for Economic Co-operation and Development，OECD）《数字教育展望》等国际框架文件，本报告提炼出“高等教育从业者数字胜任力”与“院校数字化支撑能力”两大分析视角，旨在为理解不同背景下的差异、识别跨区域共性模式提供一个清晰的分析框架。

高等教育从业者数字胜任力，指的是高等教育从业者将数字技术和AI技术有效融入教学、管理及专业实践的能力。在本报告中，“高等教育从业者”采用广义定义，涵盖高校教师、教学管理人员、专业技术人员与院校领导者等多个群体，而非局限于狭义的教学人员。这一界定基于次区域研究的共同发现：高等教育的数字化进程不仅依赖一线教师的能力提升，也与院校管理者、高校职员等各类从业者的数字意识和能力密切相关。

院校数字化支撑能力，指的是高等教育机构为推进数字化转型所提供的系统性软硬件条件，涵盖数字基础设施（如网络接入、终端设备、学习管理系统等）、治理架构与政策框架、生态系统，以及促进数字应用的组织文化与协作网络等。[4]此项能力反映了院校层面整体对于数字化与AI赋能进程的支持度与准备状态，决定了数字化创新能否从个别试点走向制度化、规模化和可持续实施。

2.3 高等教育向智能化转型的全球发展趋势

除上述变化外，高等教育数字化转型正以更加系统性的方式推进。在全球南方，一系列全球性趋势随之涌现——既包含技术进步，也反映了教育及社会经济重点的变迁。

尽管各国在学习管理平台、基础数字工具等应用实践上逐步接近，但受限于国家战略、院校能力与资源条件差异，各国的转型路径更趋多元、更贴合自身国情需求。

2.3.1 深化技术应用，推动系统整合

•从工具应用转向系统整合：数字技术不再局限于孤立工具的单点使用，而是贯穿包括教学、评估、管理和质量保障的全过程。例如，统一平台支撑线上教学、学情分析、教务管理与质量督导一体化运行。

•数据与人工智能作用日益增强：数据系统、学习分析和AI为更科学的决策、个性化学习，以及AI赋能教学的探索提供支持。例如，在东南亚部分国家，系统通过学情数据分析学生学习模式[5]，为学生推送适配内容、帮助教师开展针对性教学。

•转向以学习成效为核心：数字化赋能的重点正从扩大受教育机会，转向提升教学质量与学习成效。例如，对拉美学生的调查显示，除基础设施和学生数字化培训外，教学质量与学习成效已成为该地区院校数字化最受关注的挑战。[6]世界银行有关教育数字化的国别分析同样印证了这一趋势：对数字技术投资成效的评估正越来越多地以学习成果的实质性改进作为核心衡量依据。[7]

2.3.2 坚持因地制宜，探索多元路径

•转型路径呈现多样化：不同国家的资源条件、院校基础和学生需求差异较大，数字化转型不能套用同一模式，需要结合自身实际选择适合的推进方式。

•紧密对接国家及高校发展重点：数字化战略日益与当地发展目标相结合，包括人才培养、经济转型及教育机会拓展。例如，在中亚地区，数字化赋能与“产业数字人才”培养紧密相关，以支撑经济现代化发展。[8]

•各个国家间的趋同与分化：各个国家高等教育领域在基础能力建设方面趋于一致，但在如何排序及优先推进更高级的转型步骤上，则呈现出日益明显的分化。

2.3.3 深化协同合作，完善系统支持

•多方参与的合作模式持续深化：政府、院校、产业、社会组织及国际伙伴之间的合作正日益成为核心，区域与全球平台的使用也在不断增长，为这种合作提供了有力支持。在东南亚地区，越南和马来西亚的国家高等教育数字战略已明确提出高等教育机构与地方社区和产业之间更加紧密合作，提升学术研究和创新的实践价值，推动经济和社会发展。

•向协作与共享转型：推动数字化与AI赋能正日益成为共同的倡议与集体的路径，而非单一院校的孤立努力[9]，越来越需要各利益相关方协同发力、资源共享。联合国教科文组织（UNESCO）、联合国儿童基金会（United Nations International Children's Emergency Fund, UNICEF）和国际电信联盟（International Telecommunication Union, ITU）等机构鼓励建设开放标准和公共数字学习平台实践，为降低院校转型成本、增强系统互操作性提供了新的可能性。[10]

•质量与标准逐步演进完善：各个国家的高等教育在不断加强数字教育的框架建设[11]，同时也在重新定义质量的内涵，各国更加关注数字资源是否易用、教学是否有效、能否惠及更多学生，以及是否贴合本地场景等。

1.世界银行：《数字化进展与趋势报告：加强人工智能建设》，2025，https://www.worldbank.org/en/publication/dptr2025-ai-foundations。

2.中华人民共和国教育部：《无限的可能——世界高等教育数字化发展报告》，2025，https://www.hep.com.cn/book/-show/85488c2e-b702-4d24-8026-1dc642665661。

3.世界银行：《数字教育途径：为所有人带来更大影响》，2024，

https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099102124103012716/null。

4.联合国教科文组织：《教育数字化转型的六大支柱：通用框架》，2024，https://unesdoc.unesco.org/ark:/48223/pf0000391299；联合国教科文组织曼谷办事处&联合国教科文组织高等教育创新中心：《构建在线学习与混合式学习的生态支持系统：推进亚太地区高等教育的公平与卓越：政府简报》，2021，https://unesdoc.unesco.org/ark:/48223/pf0000375474。

5. 联合国教科文组织高等教育创新中心：《东南亚地区高等教育数字化转型报告》，2025，https://cn.ichei.org/static/upload/2026/01/12/202601125548.pdf。

6.联合国教科文组织高等教育创新中心&教科文组织拉丁美洲及加勒比地区国际高等教育研究所：《重塑拉丁美洲及加勒比地区高等教育的数字化格局》，2025，https://cn.ichei.org/Uploads/Download/2024-08-30/66d18f5273472.pdf。

7.世界银行：《数字教育途径：为所有人带来更大影响》，2024，https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099102124103012716/null。

8.联合国教科文组织高等教育创新中心：《中亚数字产业人才和高等教育数字化研究报告》，2023，https://en.ichei.org/en/knowledge/yjbg/741.html。

9.联合国教科文组织：《高等教育变革的全球合作愿景与行动》，2026，https://www.unesco.org/en/articles/transforming-higher-education-global-collaboration-visioning-and-action。

10.联合国教科文组织，联合国儿童基金会，国际电信联盟：《公共数字学习平台宪章》，2026，https://www.unesco.org/sites/default/-files/medias/fichiers/2026/03/Proposed%20final%20version%20Charter_19.03.2026.pdf。

11.请参照联合国教科文组织《教师人工智能能力框架》和《教师信息通信技术能力框架》中的示例。

第三部分

高等教育从数字化迈向AI赋能的主要模式

高等教育领域的数字化与AI赋能进程，因资源禀赋、能力基础、政策重点的差异，在不同地区呈现出不同的推进路径。一些国家和地区正朝着协调有序、大规模实施的方向迈进，而另一些则仍将重心放在扩大接入和建设基础性设施之上。这种分化不仅与既有的技术水平有关，也反映出机构能力和协调机制的差异。

3.1 数字化迈向AI赋能的四大类型

以“高等教育从业者数字胜任力”和“院校数字化支撑能力”为分析视角，可以将在七份区域及次区域研究报告中涉及的国家和地区及其中的院校情况归为四个类型，代表了四种不同的数字化与AI赋能推进模式：

- **类型一：从业者数字胜任力较高、院校支撑较完备。**在这些院校中，政策、制度与教学实践之间衔接较好，数字化与AI赋能的推进较为有序，具备规模效应和质量保障机制。代表性例子包括中国等国家。[1]

- **类型二：院校支撑较强但从业者数字胜任力参差不齐。**数字化和AI赋能推进主要由自上而下的政策或机制驱动，教学层面的深度融合与应用尚不均衡。代表性例子包括阿联酋、沙特阿拉伯[2]、印度、马来西亚与哈萨克斯坦。

- **类型三：部分从业者主动创新但院校支撑相对薄弱。**部分一线教师或院系主动拥抱数字化转型与技术创新，形成局部实践亮点，但缺乏整体协调，难以实现规模化。代表性例子包括尼日利亚、巴西、印度尼西亚、尼泊尔与斯里兰卡。[3]

- **类型四：从业者数字胜任力与院校支撑均待加强。**这部分院校的工作重心集中在扩大数字接入和基础能力建设，对外部资源依赖度较高。代表性例子包括老挝、柬埔寨[4]、缅甸、塔吉克斯坦、牙买加[5]。

3.2 国家间数字化与AI赋能推进差异的具体表现

从高等教育从业者的数字胜任力来看，各次区域呈现三种主要情形：

一、能力发展制度化程度较高。部分国家已形成较为制度化的数字胜任力培训和发展机制，教职工和管理人员有较系统的职业发展机会，数字化与AI工具的应用较为深入。东亚和阿拉伯地区部分国家在此方面有较成熟的制度安排。

二、能力建设不均衡。培训机会分布不均，高阶技能和AI相关能力缺口明显。拉美和南亚部分国家存在较突出的结构性断层。

个体驱动的实践创新。在正式支持不足的环境下，教师通过自学、同行交流和非正式渠道探索实践。尼泊尔、斯里兰卡和加纳等国的教育工作者表现出较强的适应性。

从院校数字化支撑能力来看，差异同样显著，主要分为两类：

一、国家统筹协调性强。国家层面有专门协调机构或统一平台，政策与执行衔接良好。例如，韩国教育部直属教育学术信息院（Korea Education & Research Information Service, KERIS）和沙特的国家在线学习中心。这些平台提供了共享基础设施和标准化资源，有助于缩小校际差距。

二、院校支撑条件参差不齐。虽有政策设计，但落地情况不均衡。院校之间，其准备度存在显著差异。内罗毕、开普敦等城市的顶尖大学能够采用先进的数字平台和混合学习模式，而在许多网络覆盖较差的地区，院校仍在连接性、设备和电力供应等方面持续面临重重制约。[6]这种能力分布不均的状况，导致在同一国家、同一区域内部，数字化进程也存在高度分化。

3.3 典型案例

3.3.1 案例1：高校协同推进数字化与AI赋能规模化转型

在政策协调有力、资源配置到位的条件下，数字化与AI赋能可以依托统一平台实现规模化推进，有效缩小校际差距。

韩国通过韩国教育学术信息院（KERIS）等国家级协调机构整合高等教育领域的数字化资源和实践，并设立“人工智能教育联盟与政策实验室（AIEDAP）”等补充性倡议，进一步支持教育工作者AI能力的提升。[7]印度则通过大型国家平台和对共享基础设施的协同投入，实现了数字化与AI赋能的规模化推进。通过建设国家知识网络、SWAYAM 平台以及国家数字图书馆等举措，以共享基础设施和标准化内容降低院校间资源差异。[8]

这些实践表明，协调的治理机制和共享体系能够支持连贯的、系统性的转型，并有助于缩小院校间的发展差距。

3.3.2 案例2：借助伙伴关系拓展数字化支撑能力

在院校自身资源有限的情况下，多方协作与伙伴关系成为拓展数字化支撑能力、弥合区域及校际差距的有效途径。创新中心的实践表明，通过搭建多层次合作网络，可以将全球资源与本土需求对接，在更大范围内推动从业人员能力建设与院校数字化提升。

创新中心的IIOE国家中心模式通过区域协调、联合培训和资源共享，在多国推进从业人员能力建设与院校协作，弥补国家内部不同区域和院校之间发展水平与从业人员数字胜任力的不均衡，并推动全球数字学习工具的本地化应用。在区域层面，区域合作模式也凸显了协调能力建设与本地化适配的重要性。东非大学理事会（Inter-University Council for East Africa, IUCEA）与创新中心合作实施AI教学能力培训，采用“培训师培训”模式，由多国教师参与在线学习与线下共创，将教学模块适配至本地情境。此外，创新中心与联合国教科文组织教育信息技术研究所（Institute for Information Technologies in Education, IITE）联合发起的“非洲女性引领变革”项目，依托非洲的IIOE国家中心赋能女性高等教育从业者，使女性从业者能够在课堂与社区中引领数字化与AI的赋能实践。在国际层面，创新中心联合高校、专业机构及科技企业，整合优质资源，通过联合研究、师资共训与网络研讨会等形式，形成“全球资源、本土适用”的支持平台。

这些实践表明，多方协同能够在弥补能力短板、推动数字化实践从局部走向规模方面发挥关键作用。

3.3.3 案例3：资源有限条件下的一线教师创新

在院校数字化支撑条件不足的情况下，一线教师的主动探索往往成为数字化实践的重要突破口。

在南亚部分地区（如尼泊尔、斯里兰卡）[9]以及非洲部分地区（如加纳、尼日利亚）[10]，一线教师广泛使用即时通信工具和生成式人工智能（Generative AI）应用等易于获取的工具，来支持日常教学，涵盖沟通、内容开发与评估等环节。这些实践多由一线教师发起，缺乏制度性支撑，但反映出一线教师在政策条件不完备情况下的高度适应力。

尽管这种自下而上的创新能够加速技术的初步应用，但若缺乏持续的院校支持与协调，难以将局部亮点转化为制度化实践，实现从“个体自发”到“院校支撑”的跨越。

3.3.4 案例4：对院校领导及管理者的数字化能力赋能与支持

非洲大学协会（Association of African Universities, AAU）作为非洲顶尖的高等教育协调机构，发起了面向全非高校的信息通信技术领导力能力建设战略倡议，为非洲高等教育数字化转型提供了重要示范。该倡议面向非洲高校的数字化主管、首席信息技术官及高级信息技术管理人员，聚焦提升院校数字化领导力与治理水平，为非洲高等教育数字化转型注入关键动能。[11]

通过系统赋能非洲高校信息通信技术（Information and Communication Technology, ICT）主管与首席信息技术官，非洲大学协会不仅为ICT领导者配备了数字化治理、网络安全、企业资源规划系统应用及院校数字化战略制定等核心工具与专业能力赋能，还着力培育跨境实践共同体，推动各类数字化工具、政策框架与基础设施建设模式在院校及区域间共享互鉴，切实推动非洲高校以更加协同、系统、可持续的方式应对数字化变革，为区域高等教育数字化转型提供了可参考、可推广的实践路径。

综上可见，全球南方高等教育数字化与AI赋能的推进呈现出多元实践路径：既有依托国家级统筹机制与平台实现规模化、系统化推进的成熟模式，也有通过多边合作、区域联动与生态共建提升院校数字化支撑能力的有效路径；在资源约束情境下，高等教育从业者展现出较强的创新活力，而面向院校管理者与ICT领导者的能力赋能，则进一步强化了转型的治理根基。这些案例共同表明，转型成效取决于高等教育从业人员数字胜任力与院校数字化支撑能力的协同提升，唯有坚持顶层设计与基层创新相结合、多边合作与本土适配相统一，才能推动数字化转型走向可持续、可推广、可深化的长效发展格局。

1.联合国教科文组织高等教育创新中心&联合国教科文组织：《东亚的数字化飞跃：高等教育转型的区域综合报告》，2025，https://unesdoc.unesco.org/ark:/48223/pf0000393828

2.联合国教科文组织高等教育创新中心&阿拉伯联盟教育、文化及科学组织：《阿拉伯地区高等教育教学数字化转型报告》，2023，https://en.ichei.org/en/knowledge/yjbg/742.html。

3.联合国教科文组织高等教育创新中心&联合国教科文组织：《南亚地区高等教育数字化转型报告》，2025，https://en.ichei.org/en/-knowledge/yjbg/2137.html。

4.联合国教科文组织高等教育创新中心：《东南亚地区高等教育数字化转型报告》，2025，https://en.ichei.org/en/knowledge/yjbg/1993.html。

5.联合国教科文组织高等教育创新中心&联合国教科文组织拉丁美洲及加勒比高等教育研究所：《重塑拉丁美洲及加勒比地区高等教育的数字化格局》，2025，https://en.ichei.org/en/knowledge/yjbg/743.html。

6.联合国教科文组织高等教育创新中心&联合国教科文组织非洲能力建设国际研究所：《非洲高等教育中的数字化与人工智能应用：一项探索性研究》，2026，https://en.ichei.org/en/knowledge/yjbg/4029.html。

7.联合国教科文组织高等教育创新中心&联合国教科文组织：《东亚的数字化飞跃：高等教育转型的区域综合报告》，2025，https://unesdoc.unesco.org/ark:/48223/pf0000393828。

8.同3。

9.同3。

10.同6。

11.同6。

第四部分

高等教育从数字化迈向AI赋能的关键挑战

尽管数字化与AI为高等教育发展带来新可能，但全球南方国家与院校的发展进度差距明显，受资源、能力、制度等现实条件制约，转型难以全面深入，面临的压力主要集中在提升从业者数字胜任力、强化院校数字化支撑能力方面。面对这些复杂挑战，如何确保数字化与AI赋能始终秉持“以人为本”的准则，使其真正赋能而非束缚教与学，已成为当前亟待解决的关键课题。[1]

4.1 高等教育从业者数字胜任力面临的挑战

数字化与AI的成效，很大程度上取决于高校教职工和管理者是否能够将技术融入日常工作。然而，多种限制条件制约了他们的准备水平、参与意愿和持续投入，导致数字素养和技能无法得到有效发展和提升。

4.1.1 政策、实践与激励机制的错位

从各区域的普遍情况来看，政策、课堂实践以及院校层面的激励机制之间，依然存在着显著的长期脱节。

•政策与实践存在脱节： 一线教师在政策制定中的参与有限，削弱了政策与教学实践之间的衔接。例如在南亚与非洲多国，国家数字教育政策往往自上而下制定，与一线课堂现实存在距离。[2]

•政策要求与执行条件存在偏差：尽管国家层面的政策框架强调高水平的数字与AI素养，但在实际执行中，许多教师仍受制于资源匮乏的环境，在时间、基础设施及教学支撑方面面临重重困难，例如南亚、东南亚与非洲部分国家。[3]

•激励机制不完善： 数字创新尚未充分纳入评价与晋升体系，影响教师持续参与的积极性。这一现象在许多南方国家普遍存在。

•学术课程与产业需求脱节：培训内容往往侧重于技术技能，而非与劳动力市场相关的能力，从而导致高校人才的培养成果与产业人才需求出现错位。在中亚、东南亚等强调数字产业人才的地区，人才培养与劳动力市场需求难以匹配。[4]

4.1.2 专业发展与数字教学能力的差距

由于缺乏系统、长期的进修机会，教师很难掌握深层次的数字技能，导致教学方式的更新进展缓慢。

•专业发展机会有限且不均衡：在不同地区与院校之间，教师获取持续、优质专业发展项目的机会仍不均衡。在非洲、拉美、南亚地区[5]院校间教师培训机会差异显著，优质资源高度集中。

• 高阶及AI相关能力缺失：尽管社会对教师的要求日益增高，但培养高阶数字技能与AI技能的机会依然匮乏，在资源匮乏的环境中这一问题尤为突出。即便在东亚、阿拉伯地区[6]等基础较好的国家，教师面向生成式人工智能的教学法能力仍普遍不足。

• 教学法转型滞后：许多教师虽已掌握基础的信息通信技术(ICT)技能，但仍缺乏能力来重新设计面向混合式或人工智能赋能环境的课堂教学，这反映出教学法研究方面的投入不足。这一现象在非洲部分地区尤为突出。

4.1.3 工作负荷、可持续性及包容性挑战

日益增长的期望与结构性约束交织，带来了可持续方面的挑战，也加剧了新形式的不平等。

•工作负荷显著增加且缺乏相应支持：从业人员在履行现有教学、科研及行政职责的基础上，仍需承担采用数字化与AI工具的额外压力，导致其工作量激增。

•教师心理负荷累积导致参与度下降：若缺乏有效的院校支持，持续增长的心理与工作压力易引发教师疲劳及创新动力缺失，进而对转型变革产生抵触情绪。这一现象在非洲部分国家[7]的院校实践中已有明显体现。

•语言与内容障碍加剧数字不平等：多语种及本土化教学资源的匮乏，加之AI素养的差距，共同催生了新型数字不平等，并限制了数字化进程的包容性参与。非洲多语种环境、南亚小语种资源不足[8]等问题，直接造成新的数字鸿沟。

4.2 院校数字化支撑能力面临的挑战

院校层面的支撑能力是决定数字化转型能否实现有效落地、统筹协调与长效运行的关键。从全球南方各区域的情况来看，结构性与制度性制约因素依然突出，在很大程度上限制了院校数字化发展的规模与成效。联合国教科文组织拉丁美洲及加勒比地区国际高等教育研究所（IESALC）对全球16所高校的分析揭示了一个值得关注的落差：数字化与AI虽为教学与行政转型带来重大机遇，但多数院校的应对措施仍较为碎片化。高校往往将AI视为信息技术部门的事务，而非核心的院校治理与学术变革重点，因而缺乏院校范围统一的能力框架予以支撑。[9]

4.2.1 基础设施与资源瓶颈限制

•持续存在的连接与接入缺口：互联网接入、设备可用性及稳定电力供应的限制仍是主要障碍，在非洲农村、南亚偏远地区[10]尤为突出。

•“最后一公里”连接挑战突出：许多院校仍面临高昂的数据流量费用和有限的“最后一公里”基础设施，这限制了它们有效参与数字学习生态系统的能力。

•基础设施与数字生态之间的错配：对硬件的投入并不总能匹配相应的数字平台、内容及支持服务，从而制约了其有效利用。东亚及阿拉伯地区以外较多区域普遍存在 “重硬件、轻平台、轻内容” 现象。

4.2.2 政策规划、领导力与执行脱节

•协调碎片化与政策—执行衔接不力：政府部门、院校及外部合作伙伴之间缺乏紧密联动，导致整体战略执行松散。同时，宏观政策目标与院校执行能力之间差距持续存在，在拉丁美洲、非洲及南亚地区表现较为典型[11]。

•数字化与AI赋能领导力仍需完善：部分院校在数字化转型的战略统筹、多方协同与组织变革管理方面仍面临现实制约，在有效协调利益相关方、系统推进组织变革，以及将数字化发展重点融入院校治理结构等方面，仍存在一定困难与挑战。

•转型推进缺乏长期系统性规划：受资源条件、外部环境与实施基础所限，院校领导层难以从长远发展视角统筹布局，系统化构建稳定、可持续的数字化转型支撑环境，导致发展缺乏连贯性与长效性。在非洲和南亚的部分国家普遍依赖短期项目，难以形成稳定支撑环境[12]。

•产教融合缺乏内生合作机制：高校与产业界尚未形成稳定长效的内生性人才培养合作机制，院校在对接产业需求、协同培养人才方面缺乏内生动力，难以将产业真实需求系统性融入课程体系与数字技能培养全过程。中亚五国虽均将数字人才培养列为国家战略，但校企协同仍以项目合作为主，制度化、长效化的产教融合机制普遍不足。

4.2.3 发展不平衡与不平等现象依然突出

•区域与院校间发展不均衡：不同地区和院校之间在数字能力方面存在显著差异，以非洲大陆为例，这种差异反映出更广泛的社会经济不平等。

•城乡鸿沟与资源配置不均：农村及偏远地区院校在基础设施、师资配备及资源投入方面长期处于劣势，南亚、非洲、东南亚地区普遍存在。[13]

•参与和领导层面的性别与包容性差距：尽管数字接入状况有所改善，但女性在领导岗位、数字技术及STEM领域的代表性仍然不足，影响了赋能转型的包容性参与。这一问题在阿拉伯地区、非洲、南亚尤为突出。[14]

要应对上述挑战，就必须在院校和高等教育系统层面同步采取协调且具前瞻性的战略。为此，本报告第五部分将提出关键的行动优先事项与政策建议，以支持全球南方高等教育迈向更加包容、可持续且负责任的数字化转型。

1.联合国教科文组织：《高等教育变革的全球合作愿景与行动》，2026，https://www.unesco.org/en/articles/transforming-higher-education-global-collaboration-visioning-and-action。

2.联合国教科文组织高等教育创新中心&联合国教科文组织非洲能力建设国际研究所：《非洲高等教育中的数字化与人工智能应用：一项探索性研究》，2026，https://en.ichei.org/en/knowledge/yjbg/4029.html；联合国教科文组织高等教育创新中心&联合国教科文组织：《南亚地区高等教育数字化转型报告》，2025，https://en.ichei.org/en/knowledge/yjbg/2137.html。

3.联合国教科文组织高等教育创新中心：《东南亚地区高等教育数字化转型报告》，2025，https://en.ichei.org/en/knowledge/yjbg/1993.html。

4.联合国教科文组织高等教育创新中心：《中亚数字产业人才和高等教育数字化研究报告》，2023，https://en.ichei.org/en/knowledge/yjbg/741.html。

5.联合国教科文组织高等教育创新中心&联合国教科文组织拉丁美洲及加勒比高等教育研究所：《重塑拉丁美洲及加勒比地区高等教育的数字化格局》，2025，https://en.ichei.org/en/knowledge/yjbg/743.html。

6.联合国教科文组织高等教育创新中心&阿拉伯联盟教育、文化及科学组织：《阿拉伯地区高等教育教学数字化转型报告》2023，https://en.ichei.org/en/knowledge/yjbg/742.html。

7.同2。

8.联合国教科文组织高等教育创新中心&联合国教科文组织非洲能力建设国际研究所：《非洲高等教育中的数字化与人工智能应用：一项探索性研究》，2026，https://en.ichei.org/en/knowledge/yjbg/4029.html。

9.联合国教科文组织高等教育创新中心&联合国教科文组织：《南亚地区高等教育数字化转型报告》，2025，https://en.ichei.org/en/knowledge/yjbg/2137.html。

10.联合国教科文组织拉美及加勒比地区高等教育国际研究所：《人工智能在高等教育和机构应对措施中的挑战：能力框架是否有空间?》，2025，https://unesdoc.unesco.org/ark:/48223/pf0000394935.locale=en。

11.同2。

12.同5。

13.同6。

14.同8。

第五部分

行动倡议：全球南方的战略优先事项

基于上述，本部分提出支持全球南方高等教育实现更具包容性、规模化且可持续的数字化与AI进程优先行动方向事项。

5.1 推动高等教育从业者成为AI赋能转型的核心力量

高等教育从业人员在有效应用数字技术与AI技术中居于核心地位。弥补培训、激励与专业自主性等方面的不足，需要更系统、更长效的发展策略。这要求将教学人员、管理人员、技术人员，以及院校领导者均纳入数字与AI能力建设的范畴。这一方向与2025年世界教师峰会达成的《圣地亚哥共识》高度契合。该“共识”强调，应将数字素养系统性嵌入教育从业人员的政策框架，提升其数字与AI能力，通过投资教师赋能教育的转型与可持续发展。[1]

5.1.1 建立能力导向的专业发展路径

•以能力框架和微证书为抓手，推动教师专业发展：对标国际数字与AI能力框架，设计覆盖不同岗位类型、分级的微证书课程，为各类高等教育从业者提供清晰的数字化技能进阶路径和技能及职业认定。为提升微证书的价值与影响力，应实现跨境互认，例如通过区域资格框架，促进全球南方的区域学术流动与人才共享。

•转向持续性的、平台驱动的专业学习：依托IIOE、Coursera、EdX等在线学习平台，从一次性培训转向持续、灵活的专业学习模式，扩大对高校管理人员和技术人员的覆盖。

•推进人工智能+的产教融合教学法转型：开设“AI+产业”、“AI+学科”微证书课程，帮助教学人员从基础数字素养向应用型AI教学实践转化，同时提升高校领导者和管理人员对数字化教学改革的理解和支持力度。

5.1.2 强化激励、认可与职业发展机制

•将数字胜任力整合至职业发展路径： 将数字教学与创新（包括获得微证书）与绩效考核、晋升及职业晋升框架挂钩，以持续激发教师参与积极性并减少对个体自发行动的依赖。

•将教学创新认可制度化：建立先锋案例奖、创新基金，以及基于微证书的认可等机制，以激励有效的数字教学实践。

•通过有组织的社群加强同行学习：利用IIOE等国际化多边合作平台促进持续交流与知识共享，推动实践社群发展。

5.1.3 强化教师自主性、包容性及因地制宜的能力建设

•将一线教师声音纳入政策与课程设计：通过磋商及多利益相关方对话与会议，确保教育工作者积极参与数字战略与改革的制定。

•扩大公平接入与包容性能力建设：通过针对性项目及IIOE等平台，优先服务资源不足的院校和群体，包括女性教育工作者。创新中心与联合国教科文组织教育信息技术研究所（IITE）联合发起的“非洲女性引领变革”项目，正是此类倡议的典型案例——该项目赋能非洲高校女性教师、管理者、领导者，使其能够在课堂教学与行政管理和领导岗位中引领数字化与AI的赋能实践。

•加强本地化与灵活学习路径：推动本地化内容共建，并扩大多语种、微证书及“AI+产业”课程的适配工作，以确保其在不同情境下的相关性。

5.2 强化院校能力，支撑可持续的数字化与AI赋能

可持续且包容的数字化进程有赖于强大的院校能力。这需要在治理、基础设施、合作伙伴关系以及监管框架方面做出协同努力，以确保数字化与AI赋能既富成效，又能长期可持续发展。

5.2.1 强化治理、领导力与执行能力

•加强政策与院校执行的衔接：强化协调机制，确保国家战略能够转化为院校层面可操作的具体实践。这包括将国家数字战略与“AI+产业”微认证课程的开发相衔接，以确保高等教育能够有效回应地方与区域经济的需求。

•制定可操作的数字化与AI赋能路线图：支持院校明确发展优先事项及时间表，包括通过开发教师专业发展和AI能力的微证书项目来推动AI融合的目标。

•强化数字领导力：赋能院校领导层与管理者，使其具备数字化与AI相关能力，推动数字化与AI赋能实践，将数字优先事项纳入治理结构，并确保长期的问责机制与战略愿景。次区域研究特别指出，提升高校校长、院长等领导人员及行政职员的数字化知识、意识和能力，对于推动高等教育数字化转型尤为关键。[2]

•搭建区域对话与协同机制：依托创新中心区域对话会，搭建区域间国家教育主管部门、院校、国际组织与产业的常态化沟通平台，推动政策经验分享、区域协同与多方共识形成，促进数字教育战略更好对接院校实际与各国本土需求，提升转型政策的系统性、协调性与可执行性。同样关键的是，要重视AI赋能的伦理问题，遵循透明、公平、隐私、问责、包容等原则，在高等教育中建立负责任的AI治理框架。区域层面的倡议，如阿拉伯联盟教育、文化及科学组织 (ALECSO) 的《AI伦理宪章》，为推动符合伦理、包容且以人为本的AI教育转型提供了重要指引。

5.2.2 投资建设包容且持续可靠的数字基础设施

•扩大连接与设备的公平接入：弥补基础设施差距，使更广泛的群体能够参与数字化学习与专业发展。这是有效利用IIOE等在线平台及开展教师能力建设赋能的先决条件。

•缩小跨区域及跨院校的结构性差距：针对资源匮乏地区进行重点投资，以促进更均衡的发展。这包括确保这些院校具备必要的基础设施，能够参与多边合作并获取全球资源。

•实现基础设施与平台及生态系统的协同：在硬件投入之外，补充配备包括IIOE等在线平台、数字内容及支持服务，以确保基础设施得到有效利用。

5.2.3 构建协作型、平台化、与产业联动的生态系统

•加强产学合作：通过联合开发课程及“人工智能+产业”培训项目，使高等教育与劳动力市场需求有效衔接。

•建立院校间学习网络与社群：支持IIOE国家中心、IIOE区域中心及各类平台建设，促进合作、资源共享及协同能力发展，解决碎片化问题，实现跨院校的规模化协作。

•推动区域与国际合作：扩大南南合作及多边合作，促进转型模式从孤立的项目实践迈向更注重协作与共享互助的合作模式。

5.3 创新中心的未来战略——技术赋能、多边协同、本土运营、互惠共赢

数字技术与AI为全球南方高等教育补短板、提质量、促公平提供了现实路径。然而，各地能力、资源、条件差距依然显著，若无协同、持续的有效行动，这些差距将进一步扩大。

未来，创新中心将继续立足全球南方高等教育数字化与AI转型现实需求，以技术赋能、多边协同、本土落地、互惠共赢为核心方向，持续强化高等教育从业人员数字胜任力与院校数字化支撑能力建设。创新中心将依托IIOE平台，持续推进高等教育从业者数字能力微证书项目实施，不断丰富“AI + 学科”“AI + 产业”等应用型培训体系，拓宽能力覆盖范围，助力构建适配产业发展需求的本土化人才培养模式。

同时，创新中心将进一步发挥高等教育数字化先锋案例奖的示范引领作用，总结推广可复制、可推广的转型实践经验，带动更多院校提升数字化治理与支撑水平。通过区域对话会搭建常态化沟通机制，推动国家教育部门、院校、产业与国际组织协同发力；持续完善全球伙伴网络，深化院校、政府、行业、企业及国际组织间的多边协同合作，强化国家中心与区域中心的枢纽功能，推动优质资源与本土转型需求精准对接，构建长期稳定、可持续的数字化赋能生态。

作为联合国教科文组织《教育 2030 行动框架》的践行者，创新中心将始终坚持以人为本、包容公平的发展理念，以高质量能力建设与务实合作行动，持续助力全球南方高等教育数字化与AI赋能进程，为推动实现优质公平教育与可持续发展目标贡献力量。

1..参见https://www.unesco.org/en/articles/unesco-world-summit-teachers-leaders-commit-reinventing-and-supporting-teaching-profession。

2..联合国教科文组织高等教育创新中心&联合国教科文组织拉丁美洲及加勒比高等教育研究所：《重塑拉丁美洲及加勒比地区高等教育的数字化格局》，2025，https://en.ichei.org/en/knowledge/yjbg/743.html。

参考文献

次区域报告

[1] 联合国教科文组织高等教育创新中心 & 联合国教科文组织东亚办事处. (2025).《东亚的数字化飞跃：高等教育转型的区域综合报告》. https://unesdoc.unesco.org/ark:/48223/pf0000393828.

[2] 联合国教科文组织高等教育创新中心 & 联合国教科文组织曼谷办事处. (2025).《南亚地区高等教育数字化转型报告》. https://en.ichei.org/en/knowledge/yjbg/2137.html.

[3] 联合国教科文组织高等教育创新中心 & 联合国教科文组织曼谷办事处. (2025).《东南亚地区高等教育数字化转型报告》. https://en.ichei.org/en/knowledge/yjbg/1993.html.

[4] 联合国教科文组织高等教育创新中心 & 塔什干信息技术大学(TUIT)和兰州大学中亚研究所. (2023).《中亚数字产业人才和高等教育数字化研究报告》. https://en.ichei.org/en/knowledge/yjbg/741.html.

[5] 联合国教科文组织高等教育创新中心 & 阿拉伯联盟教育、文化及科学组织. (2023).《阿拉伯地区高等教育教学数字化转型报告》. https://en.ichei.org/en/knowledge/yjbg/742.html .

[6] 联合国教科文组织高等教育创新中心 & 联合国教科文组织非洲能力建设国际研究所. (2026).《非洲高等教育中的数字化与人工智能应用：一项探索性研究》. https://en.ichei.org/en/knowledge/yjbg/4029.html.

[7] 联合国教科文组织高等教育创新中心 & 联合国教科文组织拉丁美洲及加勒比高等教育研究所. (2025).《重塑拉丁美洲及加勒比地区高等教育的数字化格局》. https://en.ichei.org/en/knowledge/yjbg/743.html.

全球报告

[8] 非洲联盟. (2024).《大陆人工智能战略》. https://au.int/en/documents/20240809/continental-artificial-intelligence-strategy.

[9] 世界银行.《 高等教育中的人工智能革命：你需要知道什么》.《教育数字化创新》. https://openknowledge.worldbank.org/entities/publication/81b862e6-fdda-470a-a142-4a7c43e7b049.

[10] 经济合作与发展组织. (2026).《2026年数字教育展望:探索生成式人工智能在教育中的有效应用》. https://www.oecd.org/en/publications/oecd-digital-education-outlook-2026_062a7394-en.html.

[11] 联合国教科文组织. (2026).《高等教育变革的全球合作愿景与行动》. https://www.unesco.org/en/articles/transforming-higher-education-global-collaboration-visioning-and-action.

[12] 联合国教科文组织曼谷办事处 & 联合国教科文组织高等教育创新中心. (2021).《构建在线学习与混合式学习的生态支持系统——推进亚太地区高等教育的公平与卓越：政府简报》. https://unesdoc.unesco.org/ark:/48223/pf0000375474.

[13] 联合国教科文组织, 联合国儿童基金会, 国际电信联盟. (2026).《公共数字学习平台宪章》. https://www.unesco.org/sites/default/files/medias/fichiers/2026/03/Proposed%20final%20version%20Charter_19.03.2026.pdf.

[14] 联合国教科文组织. (2018).《教师信息通信技术能力框架》. https://www.unesco.org/en/digital-competencies-skills/ict-cft.

[15] 联合国教科文组织. (2024).《教育数字化转型的六大支柱：通用框架》. https://unesdoc.unesco.org/ark:/48223/pf0000391299.

[16] 联合国教科文组织. (2025).《教师人工智能能力框架》. https://www.unesco.org/en/articles/ai-competency-framework-teachers.

[17] 联合国教科文组织. (2025).《高等教育：数据一览》. https://unesdoc.unesco.org/ark:/48223/pf0000394112.

[18] 联合国教科文组织拉美及加勒比地区高等教育国际研究所. (2025).《国家人工智能战略中的高等教育角色：比较政策研究》. https://www.iesalc.unesco.org/en/articles/role-higher-education-national-artificial-intelligence-strategies-comparative-policy-review.

[19] 联合国教科文组织拉美及加勒比地区高等教育国际研究所. (2025).《人工智能在高等教育和机构应对措施中的挑战：能力框架是否有空间?》. https://unesdoc.unesco.org/ark:/48223/pf0000394935.locale=en.

[20] 世界银行. (2024).《数字教育途径：为所有人带来更大影响》. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099102124103012716/null.

[21] 世界银行. (2025).《数字化进展与趋势报告：加强人工智能建设》. https://www.worldbank.org/en/publication/dptr2025-ai-foundations.

[22] 中华人民共和国教育部. (2025).《无限的可能—世界高等教育数字化发展报告》. https://www.hep.com.cn/book/show/85488c2e-b702-4d24-8026-1dc642665661.

附录一
《中亚数字产业人才和高等教育数字化研究报告》摘要

《中亚数字产业人才和高等教育数字化研究报告》

扫码阅读完整报告

本报告由联合国教科文组织高等教育创新中心（中国深圳）统筹发起，并联合塔什干信息技术大学和兰州大学中亚研究所共同完成。调研工作得到乌兹别克斯坦、哈萨克斯坦、吉尔吉斯斯坦、土库曼斯坦及塔吉克斯坦国专家团队的支持，凝聚了政策制定者、学者与实践者的共同智慧。编者和作者包括：

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*本摘要仅展示部分报告观点，请参阅报告全文以了解研究详情。

中亚地区哈萨克斯坦、吉尔吉斯斯坦、塔吉克斯坦、乌兹别克斯坦和土库曼斯坦位于亚欧大陆腹地，为欧亚地缘政治枢纽。由于资源禀赋、发展基础及发展模式不同，中亚国家经济发展水平巨大。伴随着数字化产业技术革命引领工业**4.0**时代的到来，中亚国家均高度重视智能技术的应用，并积极投入到产业数字化转型行列。客观来说，资金、技术与人才等限制，致使其数字化产业发展仍面临诸多困难。在本报告中，作者通过分析中亚五国的国别政策和促进高等教育数字化、数字人才发展的措施，描绘各国在发展过程中面临的机遇和挑战。

哈萨克斯坦作为区域引领者，早在**2017**年就推出“数字哈萨克斯坦”国家规划，在电子政务革新与数字基建方面迈出了坚实的步伐；**乌兹别克斯坦**则通过“数字乌兹别克斯坦2030”战略，在社会经济的各个领域掀起了数字化转型的浪潮；**吉尔吉斯斯坦**以开放包容的姿态，积极搭建国际合作桥梁，吸引外部资源助力自身发展；而**塔吉克斯坦**与**土库曼斯坦**，则因基础设施与资金的现实制约，数字化转型的步履显得更为谨慎而漫长。

面对挑战，中亚各国并未止步，每个国家都在结合自身的发展阶段与现实条件，探索最适合自己的数字化转型路径。各具特色的实践展现了各国在数字化基础和发展重点上的差异，也为整个区域内的经验交流与相互借鉴提供了丰富的案例库。每条道路都有其独特的价值，共同绘就了中亚高等教育数字化转型的多元图景。从中亚各国的实践中明晰出一条可行路径：通过构建系统性的支撑体系，才能真正推动教育在智能时代的深度转型。在人工智能技术更加深入变革高等教育的当下，这些具体路径仍持续引领高等教育机构能力的整体提升：

•**建立多元融合的教育新生态：**推动传统课堂、远程教学与混合式学习三种模式并行发展，搭建统一且开放的数字教育平台，整合国内外优质电子资源，特别关注农村和偏远地区的数字接入问题，切实弥合不同区域之间的教育数字鸿沟。

•**教师队伍建设：**构建一个涵盖数字素养、教育设计、伦理判断三个维度的能力发展框架，通过微证书认证、专项工作坊等形式，帮助教师在掌握**AI**工具的同时，更深刻地理解如何将其与教学实践深度融合。

•**深化多边、多元的国际合作：**扩大跨国教育项目的覆盖面，建立区域高等教育合作伙伴网络，推动教学资源的开放共享、学术标准的相互认可，促进人才的良性流动，都是各机构可以努力的方向。

•**加强产教融合：**通过校企共建创新实验室、共同运营**IT**培训中心，开设大数据分析、智能制造等“**AI+**学科”前沿课程，高等教育机构才能够紧密结合产业人才需求、能更好地培养符合数字经济发展需求的复合型人才，让教育真正服务于社会发展。

附录二

《阿拉伯地区高等教育教学数字化转型研究报告》摘要

《阿拉伯地区高等教育教学数字化转型研究报告》

扫码阅读完整报告

本报告由联合国教科文组织高等教育创新中心（UNESCO-ICHEI）与阿拉伯联盟教育、文化和科学组织（ALECSO）共同完成。研究汇聚了来自阿尔及利亚、埃及、伊拉克、约旦、沙特阿拉伯、毛里塔尼亚、摩洛哥、突尼斯、阿联酋和也门十国的政策制定者、大学领导者与领域专家的集体智慧，体现了阿拉伯地区高等教育界通过协同研究推动共同发展的合作精神。编者和作者包括：

- Mohamed JEMNI教授，ALECSO
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*本摘要仅展示部分报告观点，请参阅报告全文以了解研究详情。

本报告不仅关注技术的引入，更旨在识别转型中的挑战、需求与机遇，分享可推广的最佳实践，以避免数字化领先国家与阿拉伯地区之间鸿沟的进一步扩大。报告通过对10个阿拉伯国家的调研，重点围绕以下关键问题展开：阿拉伯地区需要制定什么政策来促进数字化转型；需要哪些基础设施；哪些宝贵的成功案例可供效仿；如何设计时间线；教育工作者和学生是否已完全准备好迎接数字化转型；以及如何优化治理结构，以有效引领数字化转型。

报告通过翔实的数据分析，揭示了阿拉伯地区的高等教育数字化转型呈现出显著的断层。

•基础设施差距显著：数据表明，基础设施仍是制约转型的最大瓶颈，不同收入国家在家庭互联网接入和电脑拥有率上存在巨大差异。

•政策覆盖率不足：报告调研国家总数10个，截至2023年12月，拥有明确高等教育数字化战略的国家只有4个（约旦、摩洛哥、阿尔及利亚、毛里塔尼亚），大多数受访国家尚缺乏组织和负责数字学习的监管框架。

•教师培训体系薄弱：教师数字技能培训的系统性、持续性的专业发展机制尚未普及。缺乏与职业发展挂钩的认证与激励体系；缺乏对在线教学设计、评估创新等深层教学能力的培养，难以支撑真正意义上的教学转型。

•质量保障机制缺失：仅伊拉克与沙特阿拉伯两国建立了针对数字化教学与学习的质量保证框架，而其余国家缺乏专门的质量标准、评估机制与负责机构。

基于调研结论，报告围绕五个关键维度提出了**26条战略建议**，旨在通过分层、系统的方式推进阿拉伯地区高等教育数字化转型，最终实现包容、优质、可持续的共同愿景。

1.国家整体层面：政府应将宽带互联纳入公共基础设施范畴，加快实现国家级网络覆盖与质量提升。建议采取积极措施推动家用电脑普及与网络资费可负担化，同时，需在高中阶段融入信息与通信技术技能教育，为学生进入数字化高等教育环境做好准备。

2.制度政策与规划：各国应制定高等教育数字化转型专项政策与战略，并设立强有力的领导机制。鼓励各院校在国家框架下结合自身特色制订实施方案，同步完善数字学习的监管与评估体系。

3.教师与教学：需建立可持续的教师数字教学能力培训体系，确保其教学技能与技术及教学方法的发展同步。建议引入微证书等认证机制，对教师完成的数字化教学培训予以正式认可，并配套设计相应的激励措施，鼓励教师持续参与专业发展与课程创新。

4.数字化学习与转型：在国家层面明确数字化教学的不同模式（在线、混合、面对面）的比例目标与评估标准，同时允许院校根据实际情况灵活调整。推动院校参与开放教育资源倡议，制订数字化教学实施与评估指南，促进形成可持续的创新与反思文化。

5.数字化教学与学习质量保证：建议与各利益相关方协同构建数字化教学质量保障框架，明确评估标准与责任机构。支持设立或指定专门机构负责监督与评估数字化教学的实施效果，并定期公开发布质量评估报告。

附录三

《重塑拉丁美洲及加勒比地区高等教育的数字化格局》摘要

《重塑拉丁美洲及加勒比地区高等教育的数字化格局》

扫码阅读完整报告

本报告由联合国教科文组织拉丁美洲及加勒比地区国际高等教育研究所（UNESCO IESALC）与联合国教科文组织高等教育创新中心（UNESCO-ICHEI）合作开展。本研究得到来自阿根廷、巴西、智利和委内瑞拉高等教育机构工作人员和管理层的大力支持，汇集了四国内12所大学1420名学生的个人经历和想法，还包含了阿根廷、巴西和智利负责高等教育的高级政府官员以及全国性大学协会的主要代表的采访。研究的成功完成得益于拉丁美洲及加勒比地区对推动高等教育数字化转型的努力与合作发展的共同愿景。编者和作者包括：

Francesc Pedró, Emma Sabzalieva, Eglis Chacón, Adrian Estrela Pereira, Arianna Valentini, Luz Gamarra Caballero, Dana Abdrasheva

*本摘要仅展示部分报告观点，请参阅报告全文以了解研究详情。

报告指出，虽然疫情大大推动了拉美及加勒比地区教学和学习中的技术运用，但它主要促进了数字化转变，而非高等教育数字化转型。为了实现真正的转型落地，报告基于该地区不同国家的社会经济背景差异及各国所处的数字时代转型阶段的差异：**巴西、阿根廷**等通过国家战略和投资引领；**智利、哥伦比亚**等侧重质量框架与技术试点；厄瓜多尔、玻利维亚等则面临基础设施与资源瓶颈，而提出一系列建议。依据各国经济体量、政策成熟度和基础设施水平，制订阶梯式实施路径，以支持该地区决策者转变高等教育的数字化格局。

报告发现，拉美地区的高等教育机构呈现出差异化应对方式。领先机构的创新实践包括：

•阿根廷布宜诺斯艾利斯西南省立大学采用区块链保证文凭真实性；

•墨西哥蒙特雷理工学院使用**AI**聊天助手改善学生服务，处理14000条问询；

•乌拉圭共和国大学推广**EVA**虚拟培训环境；

•机构间合作的重要性。**巴西**联邦网络通过**41**所机构联合谈判，获得教育部互联网接入方案，体现“人多力量大”的优势。

基于调研，报告提出七项战略建议：

1.制定长远规划，构建流程敏捷性：建立分阶段目标体系，超越当前任务，包含持续一致的动态发展。智利“新巴塔哥尼亚”计划的多部委合作模式值得推广。

2.注重数字化转型的质量：建立与本地需求契合的质量框架，鼓励创新而非技术堆砌。阿根廷与法国国家质量机构合作的管理层数字化转型计划是良好实践。

3.确保高等教育机构能够响应数字化变革：赋予高校自主权，快速调整课程设置与服务。巴西南里奥格兰德州联邦研究所的多渠道融资模式（机构资源+教育部赞助+企业合作）展示灵活性。

4.推广丰富的混合学习形式：回应学生强烈需求，结合线下互动与线上灵活性。调查显示，混合学习是未来最受欢迎的学习模式。

5.将高等教育数字化转型嵌入高等教育机构教职员工的持续专业发展中：提供持续培训，使教师从“工具使用者”转变为“学习设计者”。阿根廷全国私立大学协会的“6年数字素养计划”已覆盖45%教师。

6.创建高等教育机构创造和维护数字化转型的空间：通过公私合作破解资源瓶颈。巴西私立大学协会在各州首府举办数字化转型研讨会提高认识。

7.利用高等教育数字化转型促进教育公平：优先保障弱势群体接入。秘鲁政府为偏远地区建立连通中心，巴西分发表格电脑和调制解调器。

附录四

《东南亚数字产业人才和高等教育数字化研究报告》摘要

《东南亚数字产业人才和高等教育数字化研究报告》

扫码阅读完整报告

本报告是联合国教科文组织曼谷办事处与联合国教科文组织高等教育创新中心（UNESCO-ICHEI）联合研究的共同成果。报告涵盖了对越南、文莱、柬埔寨、印度尼西亚、老挝、马来西亚、缅甸、新加坡、泰国、东帝汶、菲律宾等国高等教育机构的调研和案例分析，并对各机构的数字化转型进行结构化分析。

编者和作者包括：Hong T.M Bui, Ting T.T. Le, and Hoa T.M. Nguyen

*本摘要仅展示部分报告观点，请参阅报告全文以了解研究详情。

本报告系统梳理了马来西亚、印度尼西亚、柬埔寨、老挝和东帝汶等各具特色的国家在数字化转型领域的政策布局、实践探索与现实挑战。作为全球最具活力的经济区域之一，东南亚地区拥有近7亿人口和超过7000所高校，为约1200万名学生提供教育服务。尽管许多高校早在十多年前就已尝试使用数字工具，但新冠疫情的冲击才真正促使大规模变革，并暴露了在数字技能、基础设施、资金和机构准备度方面的巨大差距。

报告核心发现：

•研究分布极不均衡，知识缺口明显

•机遇大于挑战，但短板依然突出

•国别实践亮点：差异化路径中的创新样本

新加坡凭借卓越的数字化转型政策、持续的投资和高效的实施，已成为全球领先的数字创新国家之一。新加坡持续投入大量资源，构建稳固的数字基础设施和高端人才培养体系，通过“智慧国家战略”和“未来技能提升计划”，推动“数字为本，服务至诚”的愿景实现。**柬埔寨**则以推出透明且完善的政策促进数字化转型。**越南**高等教育总体上更加关注数字与实体基础设施建设及知识发展，而在知识交流与合作、组织数字文化、知识创造与创新，以及知识管理与应用等方面的关注相对不足。

面向未来，研究建议以五大战略支柱保障高等教育的持续数字化转型：

•战略支柱一：教师职业发展（TPD）——提升数字技能与数字教学法。制定一项全面的数字素养战略，提升高等教育教师、教职员工和学生在数字化和嵌入生成式AI的教学法中的批判性思维、创造力、数字化理解能力，从而促进高效的数字化学习环境建设。

•战略支柱二：数字公平与包容。确保所有大学成员，特别是来自弱势背景的群体，能够平等地获得数字资源和机会。

•战略支柱三：数字组织身份。培育与大学使命、数字经济及全球数字化发展趋势高度契合的强大数字组织身份。

•战略支柱四：数字健康福祉。将数字健康福祉理念融入高校的整体健康促进体系，有效应对数字技术使用带来的潜在影响。

•战略支柱五：数字化变革管理。帮助师生适应并充分利用包括生成式AI在内的新兴数字技术和趋势，促使其更好地应对数字时代的挑战与机遇。

附录五

《东亚的数字化飞跃：高等教育转型的区域综合报告》摘要

《东亚的数字化飞跃：高等教育转型的区域综合报告》

扫码阅读完整报告

联合国教科文组织驻华代表处与联合国教科文组织高等教育创新中心（UNESCO-ICHEI）联合发布的《东亚的数字化飞跃：高等教育转型的区域综合报告》，系统梳理了中国、日本、蒙古国和韩国在高等教育数字化转型领域的政策、实践与挑战。报告主要作者包括Min Bahadur Bista、裴伯庸，并得到了包括来自中国的李子健教授、吕赐杰教授、甘国臻教授、雷万鹏教授、蒲永明教授、宋霍教授、尚俊杰教授、吴龙凯教授和刘姚慧卓研究员；来自日本的合作伙伴坂本旬教授、市瀬智紀教授、大安喜一；来自蒙古国的专家Myagmar Burmaa、Buyantur Oyuntungalag教授；来自韩国的林哲一教授、黄允贞、韩玉洁、郑叡溢，以及联合国教科文组织东亚地区办事处的同事夏和华、赵天卿和崔美英的帮助与支持。

*本摘要仅展示部分报告观点，请参阅报告全文以了解研究详情。

东亚各国在扩大高等教育机会上取得了令人瞩目的成就。韩国的毛入学率在2022年已达到96.4%，蒙古国也实现了71.5%（2022年）的覆盖率，日本与中国分别为59.6%（2021年）和64.6%（2022年）。通过扩展在线教育的覆盖、优化资源配置、提升教学质量，东亚正努力构建一个更具包容性与适应性的高等教育体系。

在中国，“数字中国”战略与“教育信息化2.0”行动计划双轮驱动，着重夯实数字基础设施，推动人工智能与教育深度融合，目标直指教育现代化与更大范围的教育公平。视线**转向日本**，其“超智能社会5.0”的愿景将数字化转型置于社会核心，通过“**GIGA**学校计划”为学生全面配备数字设备，让个性化学习触手可及。韩国则通过“数字新政”与人工智能教育联盟，聚焦于数字时代人才的培养，积极搭建高校与产业界的合作桥梁。而在**蒙古国**，“**E-Mongolia**”计划与“远景2050”长远规划，正致力于缩小城乡数字鸿沟，借助开放教育资源，让偏远地区的学生也能拥抱优质教育。

不止于政策愿景，东亚各国在院校建设、教师能力培养等方面亦有亮眼表现。**中国**在慕课（**MOOC**）领域的突破尤为亮眼。在“双一流”建设等政策推动下，慕课逐渐与高校学分体系对接，尝试走通“在线”到“在校”的路径。尽管仍面临课程质量不一、完成率不高等挑战，但其规模与模式，已为世界提供了一个可扩展的数字教育样本。**日本**香川大学开展了一场自下而上的转型。以“**Digital ONE**”战略为核心，学校通过敏捷开发和无代码工具整合多校区管理，提升运营效率。而更值得关注的是其设立的“数字化转型实验室”——学生不再只是技术的使用者，更是用数字工具解决社区真实问题的参与者。**韩国**则将重点放在了“点燃教师的力量”。通过人工智能教育联盟与政策实验室，韩国系统性地构建了《教师人工智能与数字能力框架》，并将**AI**工具深度融入职前培训。而在资源与地理条件面临挑战的**蒙古国**，转型之路体现着务实与韧性。以国家“**E-Mongolia**”计划为依托，蒙古科技大学等高校自主研发如**UNILIS**等在线学习系统，并积极探索区块链在学历认证中的应用。

这些来自东亚地区的实践案例共同形成了区域迈向智慧教育的建议：

政策与治理：将数字化转型明确提升至驱动社会经济发展的战略高度，制订清晰的国家级指导方针与实施路线图。关键在于建立权责分明、贯穿各层级的数据治理与网络安全框架，为教育数据的合规、安全与创新应用奠定基石。

数字基础设施：首要任务是确保所有师生都能公平、可负担地接入高速互联网并获取必要的数字终端设备。应加大对高质量、本土化开放式教育资源（Open Educational Resources，OER）的公共投资与推广力度，从根本上缩小因地域和经济差距造成的数字鸿沟。

数字能力建设：对教师开展持续、系统且以教学实践为导向的数字技能培训，并同步将批判性思维、数字素养与人工智能通识深度融入学生课程体系，同时应建立相应激励机制。

教学法与评估：倡导以教育为本、伦理先行的方式将人工智能融入教学全流程，利用学习数据分析为每位学生提供个性化支持。

数字合作：数字化转型非单一机构所能完成，需要推动政府、高校、私营科技企业及国际组织之间形成稳定的伙伴关系。通过共建平台、共享资源、共研课题与交流最佳实践，凝聚跨部门合力，加速创新解决方案的孵化与规模化应用。

附录六
《南亚地区高等教育数字化转型报告》摘要

《南亚地区高等教育数字化转型报告》

扫码阅读完整报告

本报告由联合国教科文组织驻曼谷地区办事处（UNESCO Bangkok）与联合国教科文组织高等教育创新中心（UNESCO-ICHEI）于2025年合作出版，由印度塔塔社会科学研究所的专家团队撰写，汇集了南亚地区多国教育工作者与政策制定者的洞见。

编者和作者包括：Anil Mammen, Vinary Lautre

*本摘要仅展示部分报告观点，请参阅报告全文以了解研究详情。

本报告对南亚区域**不丹、印度、马尔代夫、尼泊尔、巴基斯坦和斯里兰卡**六国的高校数字化转型现状以及对人工智能融入高等教育体系的关键问题进行分析，以英国联合信息系统委员会（Joint Information Systems Committee，JISC）的《高等教育数字化转型框架》为理论基础，系统评估了该地区数字化转型的进程。

南亚各国的数字化转型进程，呈现明显的“梯度差”。印度以《国家教育政策2020》为纲领，搭建起相对完善的政策框架；不丹国土面积虽小，却在国家层面展现出较强的数字统筹与整合能力。而尼泊尔、斯里兰卡等国，政策落地与技术应用仍显滞后。**强有力的领导力与清晰的战略愿景，往往比单纯的资金投入更能推动转型破局。**

数字基础设施的水平，直接映射着各国的发展差距。印度的高校在网络覆盖与平台建设上走在前列，而不丹、尼泊尔等国，受制于崎岖的地形与有限的经济条件，校园联网仍是挑战。

不同经历、不同院校背景的教师，其数字能力的差距远超想象。**系统的、持续的专业发展支持尤为重要**，而与此同时，更需要关注教师的工作负荷与心理健康。

数字化转型要持续的资金支撑。当下南亚多数高校仍高度依赖政府拨款，多元、可持续的融资模式尚未建立。当短期项目结束、热点退去，转型能否走深走远，很大程度上取决于资金链的韧性与活力。

综合以上发现，和南亚地区的高等教育实践，研究提出以下建议：

•**短期建议（0—2年）：**设计有针对性的、注重实践的培训项目；完善高校层面数字治理政策；加强网络安全框架；加强教师间的学习交流网络。

•**中期建议（3—5年）：**投资数字基础设施建设，为更为复杂的数字化转型创造实施空间；加强产学合作，在高校内设立技术孵化中心，推动教育技术创新与合乎伦理的人工智能教育解决方案开发；加强国别间学术交流与研究合作，建立南亚高等教育数字联盟，推动学分互认、跨境研究合作等。

•**长期建议（6年以上）：**构建可持续的生态。建立可持续融资模式，建立区域性技术赋能研究中心，制定区域性数字教育政策，建立共同的数字教育标准，促进在线学位互认、研究资金协调与最佳实践共享，并推动高等教育系统支持基于数据分析的循证决策。

附录七
《非洲高等教育中的数字化与人工智能应用：探索性研究》摘要

《非洲高等教育中的数字化与人工智能应用：探索性研究》

扫码阅读完整报告

本报告由联合国教科文组织非洲能力建设国际研究所（UNESCO International Institute for Capacity Building in Africa, IICBA）与教科文组织高等教育创新中心（International Centre for Higher Education Innovation under the auspices of UNESCO, UNESCO-ICHEI）合作开展。

Quentin Wondon博士是本项研究的主要作者和编辑。本研究第一部分所依据的在线问卷得到来自各组织，包括非洲大学协会、非洲及马达加斯加高等教育理事会（Conseil Africain et Malgache pour l' Enseignement Supérieur，CAMES）、德国学术交流中心（DAAD）、弗拉芒跨大学理事会与UOS办公室，以及欧盟与拉美关系观察站（OBREAL）的支持。同时，在若干案例研究中，本研究得到来自联合国教科文组织教席网络的成员的支持。最后，特别感谢Maya Prince在联合国教科文组织管理该网络，并推荐了设在非洲的部分联合国教科文组织教席作为潜在贡献者。

*本摘要仅展示部分报告观点，请参阅报告全文以了解研究详情。

本报告通过广泛的调查问卷和多个案例，展现非洲不同国家、不同类型高等教育机构在数字化与 AI 应用方面的创新实践、挑战与经验。案例覆盖喀麦隆、科特迪瓦、加纳、埃塞俄比亚、肯尼亚、尼日利亚、塞拉利昂、南非、多哥、津巴布韦和博茨瓦纳等国。在接受调研的院校中，高等教育的数字化进程仍处于初级阶段，虽然AI有望引发行业重大变革，但教师、学生和管理人员尚未完全理解这些变化。其中，法语非洲地区对数字化与AI的参与度明显低于英语非洲地区。总体而言，研究结果表明高等教育机构及国家主管部门需加大投入力度，以突破数字化转型与AI应用的制约因素。

非洲大陆呈现出语种区域差异显著、AI 认知与应用滞后且制约因素突出的特征，法语非洲地区发展进程明显落后于英语非洲地区。AI 发展处于 “认知浅、应用弱、缺政策、有需求” 阶段，这需要行业充分意识到AI的变革价值，加强机构层面政策规范的建设。同时，教师对 AI 应用指导的需求明确，为后续发展提供了明确方向，整体发展亟须高校与国家主管部门加大投入、破解发展桎梏。

基于研究，本报告向高等教育利益相关方，尤其是高等教育管理机构和高校管理者提出以下建议：

1.全球框架引入：联合国教科文组织发布的《教师ICT能力框架》以及《教师人工智能能力框架》从标准建设的角度为各国提供了能力建设的路径和参考依据。前两者涵盖设备操作、信息素养等多领域能力，后者则强调AI的建设与发展需以人为本、坚持伦理准则，了解 AI 基础与应用、将AI 教学法及教师专业发展等维度纳入应用当中，为教师能力建设提供方向。

2.非盟战略与建议：非洲联盟作为区域协调和非洲大陆一体化发展的重要枢纽，近年来发布了《数字教育战略与实施计划》（2024）与《非洲大陆人工智能战略》（2024）。前者提出AI在教育中的 “用AI学习” “学AI知识” “为AI做准备” 三大主题及六大AI准备度领域；后者强调制定包容性国家AI教育政策、培养师生AI能力、投资AI相关培训等，同时提及 AI 伦理、数据安全等关键议题。

3.合乎伦理的应用：根据联合国教科文组织2021年发布的《人工智能伦理建议书》，非洲大陆当坚持以下几点必要措施：（1）推动AI伦理教育；（2）加强跨学科研究；（3）培养负责任的AI开发能力；（4）确保包容性和终身学习。简而言之，教育和研究的目的在于教导人们如何负责任地构建AI，并理解其对社会的影响。其目标应当在于培养具有AI素养、具备道德意识的全球公民，并建立一个优先考虑人类福祉和基本权利、致力于AI创新的科研生态系统。

4.可持续投资：此项研究中受访者认为从基础设施和高等教育工作者能力方面，均需要稳定的资金投入环境才能持续使高等教育跟上AI转型的不断变革。非洲大学应当增加财政和技术支持，以使它们能够从数字化和AI应用中获益。

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From Digitalisation to AI Empowerment -

The Futureof Higher Education in the Global South

Executive Summary

In recent years, higher education in the Global South has made some progress in digitalisation and artificial intelligence (AI) applications. Infrastructure conditions such as network and equipment have gradually improved, while online teaching and the use of digital tools have become increasingly widespread. However, in practice, challenges including insufficient capacity, weak coordination, and difficulties in implementation remain prominent, and the dividends of technology have not yet been fully translated into teaching effectiveness.

Drawing on the findings of seven sub-regional studies, this report focuses on two perspectives: the digital competency of the higher education workforce and the institutional digital support capacity. It analyses variations in digitalisation practices, practical challenges, and feasible pathways across regions and institutions in the Global South. The study finds that progress in digitalisation across the Global South remains highly uneven: while some countries have achieved large-scale advancement through top-level design and unified platforms, many other countries and institutions still face practical challenges such as inadequate infrastructure, limited capacity, and ineffective mechanisms, resulting in differentiated transformation pathways and implementation outcomes.

Overall, the digital and AI transformation of higher education across the Global South is progressing from foundational digitalisation toward AI applications, although significant disparities remain in the pace and depth of regional progress. Development pathways are diverse and directly influenced by the digital competencies of the workforce and the institutional support conditions. A widespread disconnect persists between policy requirements and classroom practice, constraining the depth and effectiveness of transformation efforts. The digital skills of the workforce vary considerably, sustained training remains insufficient, and capacities for the pedagogical application of AI are generally limited. At the institutional level, inadequate coordination and insufficient support make it difficult for high-quality practices to be replicated, scaled up, and sustained over the long term. In this context, multilateral cooperation, joint platform development, and regional collaboration have become key means of addressing shortcomings and expanding impact.

In response to the challenges identified above, this report proposes six practical directions for action: providing higher education workforce with regular and sustainable professional development support centred on digital competencies; incorporating innovation in digital teaching into faculty incentive and promotion systems to enhance motivation for participation; respecting the realities of frontline teaching by carrying out localised and implementable capacity building with teachers as the main actors; improving institutional governance and coordination mechanisms to enhance the planning and implementation capacity of digital transformation; accelerating efforts to address shortcomings in connectivity, equipment, and platforms and to build mutually beneficial and usable digital conditions; and promoting multi-stakeholder coordination and practical cooperation between education and industry to develop multi-level and sustainable digital support capacities.

These actions may provide a reference for countries across the Global South in formulating digital transformation policies and advancing implementation at the institutional level, thereby supporting the development of higher education toward a more equitable, practical, and sustainable direction.

With appropriate digitalisation and AI empowerment that upholds ethics, equity, and inclusion, the Global South is poised to accelerate its progress and steadily narrow development gaps with the Global North.

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Part I

Introduction

Scope of the Report

Since 2023, the International Centre for Higher Education Innovation under the auspices of UNESCO (hereinafter referred to as UNESCO-ICHEI), together with UNESCO field offices, UNESCO Category 1 Institutes, international/regional organisations, research institutes, and experts from higher education institutions and relevant organisations, has conducted a series of joint research on the current status, challenges, and future of digitalisation and AI transformation in higher education across multiple regions and sub-regions of the Global South, including East Africa, West Africa, South of Africa, Central Africa, Southeast Asia, South Asia, Latin America and the Caribbean, the Arab region, Central Asia, and East Asia.

Through the above cooperation, seven regional and sub-regional thematic research reports were produced and published. The report titles and lead research institutions are as follows:

·*Research Report on Digital Industry Talent and Higher Education Digitalisation in Central Asia* — Tashkent University of Information Technologies (TUIT) and Institute for Central Asian Studies of Lanzhou University

·*Report on digital transformation in higher education in Southeast Asia* — UNESCO Regional Office in Bangkok Office

·*Digital leap in East Asia: a regional synthesis on higher education transformation* — UNESCO Regional Office for East Asia

·*Report on digital transformation in higher education in South Asia* — UNESCO Regional Office in Bangkok Office

·*Digitalisation and the Use of Artificial Intelligence in Higher Education in Africa: An Exploratory Study* — UNESCO International Institute for Capacity Building in Africa (IICBA)

·*Transforming the digital landscape of higher education in Latin America and the Caribbean* — UNESCO International Institute for Higher Education in Latin America and the Caribbean (IESALC)

·*Report on the Digital Transformation of Higher Education Teaching and Learning in Arab Region* — Arab League Educational, Cultural and Scientific Organisation (ALECSO)

Research Methodology

The above reports were based on extensive research and case analyses, covering major countries across different regions of the Global South. A large sample of higher education institutions was surveyed, and practical cases were incorporated. Details are as follows:

·*Research Report on Digital Industry Talent and Higher Education Digitalisation in Central Asia* covered 5 Central Asian countries, 15 higher education institutions, and 9 organisations.

·*Report on digital transformation in higher education in Southeast Asia* covered 11 Southeast Asian countries, including 3 national-level case studies and 35 national policy documents.

·*Digital leap in East Asia: a regional synthesis on higher education transformation* covered 4 East Asian countries, 27 higher education institutions, 27 organisations, and 8 enterprises.

·*Report on digital transformation in higher education in South Asia* covered 6 South Asian countries and 12 institutional case studies.

·*Digitalisation and the Use of Artificial Intelligence in Higher Education in Africa: An Exploratory Study* covered 27 African countries, 429 higher education institutions, and 13 institutional case studies.

·*Transforming the digital landscape of higher education in Latin America and the Caribbean* covered 4 Latin American countries, 9 organisations, and 12 higher education institutions.

·*Report on the Digital Transformation of Higher Education Teaching and Learning in Arab Region* covered 10 countries in the Arab region and 15 higher education institutions.

This report adopts case-based empirical analysis as its research methodology. Through the analysis, synthesis, and assessment of practical cases from representative countries and higher education institutions featured in the seven regional and sub-regional reports, it presents a holistic study grounded in individual cases and identifies common characteristics, regional differences, and transformation pathways. The report ultimately presents a comprehensive synthesis study intended to provide an important reference for strategic planning, policymaking, and practical cooperation in the digital transformation of higher education in the Global South.

Limitations of the Report

As with similar research reports, this report also has certain limitations. The analysis in this report is conducted primarily through two perspectives —digital competency of the higher education workforce and the institutional digital support capacity—and is based on the synthesis and analysis of selected representative cases drawn from the seven regional and sub-regional research reports. As such, it may not fully capture all characteristics and specific practices across all countries of the Global South, all higher education institutions, and different stages of development.

1.1 Background and Current Situation

Digital transformation is profoundly reshaping the global higher education landscape, while the role of AI in teaching, learning, and institutional management is receiving increasing attention. Across the Global South[1], this transformation is unfolding within diverse socioeconomic contexts. At the same time, expanding the coverage of digital infrastructure remains a priority for all parties as they respond to the development of emerging technologies.

In recent years, the focus of higher education development in the Global South has gradually shifted from expanding digital access toward building more systematic and in-depth pathways for digital and AI-empowered development. Yet transformation remains highly uneven across countries: some are advancing toward coordinated, data-driven models, while many others are still addressing foundational challenges related to infrastructure, connectivity, and digital capacity. This dual dynamic of “strengthening foundational capacities” and “advancing deeper transformation” has become a central feature of development across many regions.

1.2 Purpose and Scope of the Report

This report is based on a number of UNESCO documents on the digitalisation of higher education, as well as seven broad-based regional and sub-regional research reports jointly developed through multilateral cooperation among UNESCO-ICHEI[1], UNESCO field offices, higher education institutions, and experts from relevant organisations. These reports cover East Asia, South Asia, Southeast Asia, Central Asia, the Arab region, Africa, and Latin America and the Caribbean. The report aims to provide a comparative review and analysis of the digital and AI-empowered transformation of higher education across the Global South, together with related practical cases. It seeks to identify common patterns, key challenges, and priority actions emerging in the transformation process, with particular attention to two perspectives that shape transformation outcomes: digital competency of the higher education workforce and institutional digital support capacity.

The full texts and links to the seven regional and sub-regional research reports on which this report is based are provided in the references section at the end of the report.

1.3 UNESCO-ICHEI’s Practice in Empowering the Higher Education Workforce and Institutions for AI-Empowered Transformation

In driving digital transformation, UNESCO-ICHEI has consistently prioritised strengthening the technological application capacity in higher education, with the aim of empowering teaching and learning through emerging technologies. UNESCO-ICHEI focuses on promoting the localised application and large-scale use of digital and AI tools to improve the quality of education and advance educational equity.

At the same time, UNESCO-ICHEI leverages multiple platforms, including the International Institute of Online Education (IIOE)[2], IIOE National Centres[3], the IIOE Higher Education Digitalisation Pioneer Case Award[4], and partnership networks across regions, to comprehensively support the professional development of the higher education workforce, facilitate knowledge sharing, and develop scalable and replicable models of digital empowerment. These extensive practical efforts provide an important foundation for the analysis presented in this report.

1.4 Structure of the Report

The report is structured as follows: Part II provides an overview of the evolving trend of higher education toward AI empowerment and outlines the analytical perspectives of this report; Part III approaches the issue from two perspectives, namely digital competency of the higher education workforce and institutional digital support capacity, and examines the common patterns observed across regions; Part IV analyses the key challenges constraining the transformation process; and Part V proposes strategic priority actions.

1.Learn more about the International Centre for Higher Education Innovation under the auspices of UNESCO, please visit: https://en.ichei.org/.

2.The official website of the International Institute of Online Education (IIOE) can be accessed at: https://www.iioe.org.

3.IIOE National Centre IIOE jointly established the IIOE national centres with long-standing partner institutions, coordinating local activities in their respective countries.

4.IIOE Higher Education Digitalisation Pioneer Case Award the Pioneer Award is a public-benefit award sponsored by partner enterprises and led by UNESCO-ICHEI.

Part II

Global Patterns in Higher Education's Transition from Digitalisation to AI Empowerment

2.1 From Digitalisation to AI Empowerment in Higher Education

Across the Global South, digital transformation of higher education is at different stages of development. The early stage primarily focused on the development of digital infrastructure and the promotion of online and distance learning. Current efforts are gradually shifting toward a more systematic and integrated stage of development, in which digital technologies and AI are becoming deeply embedded in the core processes of teaching, learning, and institutional operations[1].

This transition can be understood as an ongoing evolution from "digital access" to "integrated application", and increasingly toward "AI empowerment", as reflected in the deep integration and widespread application of data systems and AI. In the post-pandemic context, higher education systems are shifting from an emergency-response model toward more proactive, systematic, and strategic pathways of digital transformation.

According to the report entitled *Infinite Possibilities—Report on the Digital Development of Global Higher Education* released by the Ministry of Education of the People's Republic of China, the year 2025 marks the beginning of the era of smart education. Breakthroughs in clusters of intelligent technologies, such as generative AI (GenAI) and large models for vertical education domains, are redefining the boundaries between human capabilities and artificial tools. This signifies that global education has reached a historic turning point, transitioning from the stage of "digital adaptation" toward that of "intelligent leap"[2].

However, this transformation process remains uneven. On the one hand, some countries or regions like East Asia and Arab region have begun exploring data-driven and AI-empowered pathways for transformation; on the other hand, other countries and regions like Africa and South Asia continue to focus on addressing foundational challenges such as those regarding network connectivity, infrastructure, and digital access. These differences have significantly shaped the pace and pathways of transformation across countries. Research by the World Bank highlights that higher education institutions in least developed countries still face significant shortcomings in digital infrastructure as well as in the digital literacy of both students and teachers. If this capacity gap is not effectively bridged, the digitalisation process—originally intended to promote equity—may instead exacerbate existing inequalities[3].

2.2 Two Analytical Perspectives: Digital Competency of the Higher Education Workforce and Institutional Digital Support Capacity

The process of digital and AI-empowered transformation in higher education depends not only on human capacities, but also on institutional support capacities, including systems and infrastructure. The capacities and levels of readiness at the micro (individual), meso (institution) and macro (government) levels largely determine the depth, breadth, and sustainability of the transformation.

Based on empirical findings from the seven regional and sub-regional research reports, and with reference to international framework documents such as UNESCO's *AI Competency Framework for Teachers, UNESCO's ICT Competency Framework for Teachers*, and the OECD's *Digital Education Outlook*, this report derives two analytical perspectives: "digital competency of the higher education workforce" and "institutional digital support capacity". These perspectives are intended to provide a clear analytical framework for understanding differences across contexts and identifying common cross-regional patterns.

Digital competency of the higher education workforce refers to the ability of higher education practitioners to effectively integrate digital and AI technologies into teaching, management, and professional practice. In this report, "higher education workforce" is defined in a broad sense, encompassing university faculty, administrators, professional and technical personnel, and institutional leaders, rather than being limited to teaching personnel alone. This definition is based on common findings from the sub-regional reports: the digital transformation of higher education depends not only on the enhancement of the capacities of frontline teachers but is also closely related to the digital awareness and capabilities of various categories of practitioners, including institutional administrators and university staff.

Institutional digital support capacity refers to the systemic hardware and software conditions provided by higher education institutions to advance digital transformation. It includes digital infrastructure (such as network connectivity, terminal devices, learning management systems, etc.), governance structures and policy frameworks, ecosystems, as well as organisational culture, and collaborative networks that facilitate digital application[4]. This capacity reflects the overall level of institutional support and readiness for the processes of digital and AI-empowered transformation and determines whether digital innovation can move from isolated pilot projects to institutionalised, large-scale, and sustainable implementation.

2.3 Global Trends in Higher Education's Transition to AI Empowerment

Beyond the changes outlined above, the digital transformation of higher education is advancing in an increasingly systematic manner. Across the Global South, a series of broader trends is emerging accordingly, encompassing not only technological progress but also shifts in educational and socioeconomic priorities.

Although countries are gradually converging in their application practices related to learning management platforms and basic digital tools, differences in national strategies, institutional capacities, and resource conditions mean that their transformation pathways have become more diverse and context-specific.

2.3.1 Deepening Technology Application and Promoting System Integration

·**From tool-based application to system integration:** Digital technologies are no longer confined to the isolated use of standalone tools but are increasingly embedded throughout the entire process of teaching, assessment, management, and quality assurance. For example, in some East Asia and Arab countries, unified platforms support the integrated functioning of online teaching, learning analytics, academic affairs management, and quality monitoring.

·**The role of data and AI is becoming increasingly prominent:** Data systems, learning analytics, and AI provide support for more evidence-based decision-making, personalised learning, and the exploration of AI-empowered teaching. For example, in some Southeast Asian countries, systems analyse student learning patterns through learning analytics data[5], enabling the delivery of tailored content to students and helping teachers carry out more targeted instruction, provided that ethical risks and equity concerns are adequately addressed. A recent scoping review highlights that perceptions and adoption of generative AI in the Global South are shaped by contextual challenges including infrastructure gaps, digital readiness, and ethical considerations.

·**Shift toward learning outcomes as the core focus:** The focus of digital empowerment is shifting from expanding access to education toward improving teaching quality and learning outcomes. For example, surveys of students in Latin America and the Caribbean show that, in addition to infrastructure and digital training for students, teaching quality and learning outcomes have become among the issues of greatest concern in the digitalisation of higher education institutions in the region[6]. World Bank country-level analyses on education digitalisation similarly confirm this trend: assessment of the effectiveness of investment in digital technologies is increasingly using substantive improvements in learning outcomes as a core evaluation metric[7].

2.3.2 Adhering to Context-Specific Approaches and Exploring Diverse Pathways

·**Diversified transformation pathways:** Given the significant differences across countries and within countries in resource conditions, institutional foundations, and student needs, digital transformation cannot follow a single model and requires countries and institutions to choose implementation approaches suited to their own contexts. This means strategies should be tailored to national and institutional priorities, resource availability, and educational contexts to ensure relevance, feasibility, and long-term sustainability.

·**Close alignment with national and institutional development priorities:** Digital strategies are increasingly aligned with national and local development goals, including talent cultivation, economic transformation, and the expansion of access to education. For example, in Central Asia, digital empowerment is closely linked to the cultivation of "digital talent for industry" in support of economic modernisation[8]. Such alignment is also evident across many other regions in the Global South.

·**Convergence and divergence among countries:** Higher education systems across countries are becoming increasingly aligned in foundational capacity building, while showing growing divergence in how they prioritise and move toward more advanced stages of transformation. This pattern reflects both shared global trends and the influence of distinct national contexts, resources, and strategic priorities.

2.3.3 Strengthening Collaboration and Systematic Support

·**Deepening multi-stakeholder collaboration models:** Cooperation among governments, higher education institutions, industry, civil society organisations, and international partners is increasingly becoming central. The use of regional and global platforms is also continuing to expand, providing strong support for such collaboration. In Southeast Asia, the national higher education digital strategies of Vietnam and Malaysia have explicitly called for closer collaboration among higher education institutions, local communities, and industry, with the aim of enhancing the practical value of academic research and innovation and contributing to economic and social development.

·**Shift toward collaboration and sharing:** Advancing transformation is increasingly becoming a shared initiative and a collective pathway rather than an isolated effort by individual institutions[9]. It increasingly requires coordinated action and resource sharing among diverse stakeholders. Organisations such as UNESCO, the United Nations Children's Fund (UNICEF), and the International Telecommunication Union (ITU) are encouraging the development of open standards and public digital learning platform practices, creating new possibilities for reducing institutional transformation costs and enhancing system interoperability[10].

·**Progressive evolution and improvement of quality and standards:** Higher education systems across countries are continuously strengthening the development of digital education frameworks[11], while also redefining the concept of quality. Countries are placing increasing emphasis on whether digital resources are user-friendly, whether teaching is effective, whether digital transformation benefits a broader student population, and whether it is adapted to local contexts.

1.World Bank. (2025). *Digital Progress and Trends Report 2025: Strengthening AI Foundations.*

2.Ministry of Education of the People's Republic of China. (2025). *Infinite Possibilities—Report on the Digital Development of Global Higher Education.*

3.World Bank.(2024).*Digital Pathways for Education: Enabling Greater Impact for All.* https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099102124103012716/null.

4.UNESCO. (2024). *Six Pillars for the Digital Transformation of Education: A Common Framework.* https://unesdoc.unesco.org/ark:/48223/pf0000391299;UNESCO Bangkok & UNESCO-ICHEI. (2021). *Building Ecosystems for Online and Blended. Learning: Advancing Equity and Excellence in Higher Education in the Asia-Pacific: policy brief.* https://unesdoc.unesco.org/ark:/48223/pf0000375474.

5.UNESCO-ICHEI and UNESCO. (2025). *Report on Digital Transformation in Higher Education in Southeast Asia.*

6.UNESCO-ICHEI and UNESCO IESALC.(2025).*Transforming the digital landscape of higher education in Latin America and the Caribbean.*

7.World Bank (2024). *Digital Pathways for Education: Enabling Greater Impact for All.*

8.UNESCO-ICHEI (2023). *Research report on Digital Talents and Digitization of Higher Education in Central Asia.*

9.UNESCO. (2026). *Transforming higher education: Global collaboration on visioning and action.*

10.UNESCO, UNICEF, ITU. (2026). *Charter for Public Digital Learning Platforms: Seven principles to steer and sustain public digital learning platforms.*

11.See examples in UNESCO's AI competency framework for teachers and ICT competency framework for teachers.

Part III

Main Models of Higher Education Transformation from Digitalisation to AI Empowerment

The development of digitalisation and AI empowerment in higher education follows divergent paths across regions due to disparities in resources, competencies and policy priorities. Some regions and countries are moving toward coordinated, orderly and large-scale implementation, while others remain focused on expanding digital access and building basic infrastructure. Such difference is not only linked to existing technological maturity but also reflects gaps in institutional capacity and coordination mechanisms.

3.1 Four Main Categories of Transformation from Digitalisation to AI Empowerment

From the analytical perspectives of the higher education workforce's digital competency and institutional digital support capacity, the countries covered in the seven regional and sub-regional research reports can be classified into four types, representing four models for the transformation process:

·**Type One: Strong institutional support and high digital competency among higher education workforce.** For these institutions, there is good alignment between policies, institutional frameworks, and teaching practices. The development of digitalisation and AI empowerment proceeds in an orderly manner with scale effects and quality assurance mechanisms. China is a representative example[1].

·**Type Two: Strong institutional support yet uneven digital competency among higher education workforce.** The development of digitalisation and AI empowerment is mainly driven by top-down policies, while in-depth integration and application at the pedagogical level remain unbalanced. Examples include the United Arab Emirates, Saudi Arabia[2], India, Malaysia and Kazakhstan.

·**Type Three: Proactive innovation among individuals amid relatively weak institutional support:** frontline teachers and faculty members voluntarily embrace digital transformation and technological innovation, forming localised exemplary practices. However, the lack of overall coordination hinders scalable replication. Examples include Nigeria, Brazil, Indonesia, Nepal and Sri Lanka[3].

·**Type Four: Insufficient digital competency among higher education workforce and inadequate institutional support:** Institutions falling under this category prioritise expanding digital access and building foundational capacity, with high reliance on external resources. Examples include Laos, Cambodia[4], Myanmar, Tajikistan and Jamaica[5].

3.2 Cross-Country Differences in the Development of Digitalisation and AI Empowerment

In terms of higher education workforce's digital competence, three major patterns have emerged:

(1) Highly institutionalised capacity development: Some countries have established well-structured mechanisms for digital competence training and professional development, offering systematic career advancement opportunities for faculty and administrators. The application of digital and AI tools is relatively in-depth. Several countries in East Asia and the Arab States have put in place mature institutional plans in this regard.

(2) Uneven capacity building: Training opportunities are unevenly distributed, with significant gaps in advanced skills and AI-related competencies. This is particularly evident in parts of Latin America and South Asia.

(3) Individual-driven pedagogical innovation: In contexts lacking formal institutional support, teachers explore innovative practices through self-learning, peer exchange and informal channels. Educators in Nepal, Sri Lanka, Ghana and other countries demonstrate strong adaptability.

Differences are equally significant in terms of institutional digital support capacity, mainly falling into two categories:

(1) Strong national coordination: There are specialised national coordinating bodies or unified platforms that ensure alignment between policy formulation and implementation. Typical examples include the Korea Education & Research Information Service (KERIS) under the Ministry of Education of the Republic of Korea and the National E-Learning Center of Saudi Arabia. These platforms provide shared infrastructure and standardised resources, helping narrow inter-institutional gaps.

(2) Uneven institutional support readiness: Despite policy formulation, implementation outcomes vary considerably, with notable differences in institutional readiness. Top-tier universities in cities such as Nairobi and Cape Town adopt advanced digital platforms and blended learning models, while institutions in many areas with poor network coverage continue to face persistent constraints in connectivity, device availability and power supply[6]. Such uneven capacity distribution leads to highly fragmented progress of digitalisation even within the same country or region.

3.3 Typical Cases

3.3.1 Case 1: Coordinated Institutional Collaboration for Scaled Digital and AI Empowerment Transformation

With robust policy coordination and adequate resource allocation, digitalisation and AI empowerment can be scaled up 33.3.2 through unified platforms, effectively narrowing inter-institutional gaps.

The Republic of Korea integrates digital resources and practices in higher education through national coordinating bodies including KERIS, and launches complementary initiatives such as the AI Education Alliance and Policy Laboratory (AIEDAP) to further enhance educators' AI capabilities[7]. India achieves scaled advancement of digitalisation and AI empowerment via large national platforms and collaborative investment in shared infrastructure. Initiatives such as the

National Knowledge Network (NKN), the SWAYAM platform and the National Digital Library help narrow gaps across institutions through shared infrastructure and standardised content[8].

These practices demonstrate that coordinated governance mechanisms and shared ecosystems enable coherent, systematic transformation and help bridge development gaps among higher education institutions.

3.3.2 Case 2: Expanding Digital Support Capacity through Partnerships

In the context of limited institutional resources, multilateral collaboration and partnerships serve as an effective pathway to expand digital support capacity and bridge regional and inter-institutional divides. Practices of UNESCO-ICHEI show that building multilateral collaborative networks can align global resources with local demands, advancing higher education workforce capacity building and institutional digital improvement on a broader scale.

The IIOE National Centre model of UNESCO-ICHEI promotes capacity building and institutional collaboration through regional coordination, joint training and resource sharing. It mitigates imbalances in development levels and workforce's digital competency across regions and institutions within individual nations, and facilitates localised adaptation of global digital learning tools and capacity building courses. At the regional level, regional cooperation models highlight the importance of coordinated capacity building and local contextualisation. The Inter-University Council for East Africa (IUCEA) partners with UNESCO-ICHEI to deliver AI pedagogical competency training under the Train-the-Trainer model, engaging educators from multiple countries in online learning and offline co-creation to adapt teaching modules to local contexts. In addition, the African Women Leading Change initiative jointly launched by UNESCO-ICHEI and UNESCO Institute for Information Technologies in Education (IITE) empowers women in the higher education workforce via IIOE National Centres across Africa, enabling women educators to lead digital and AI-empowered practices in classrooms and communities. At the international level, UNESCO-ICHEI collaborates with universities, professional bodies and technology enterprises to integrate high-quality resources, establishing a support platform featuring global resources with local applicability through joint research, joint faculty training and webinars.

These practices demonstrated that multilateral collaboration plays a pivotal role in addressing capacity gaps and scaling localised digital practices from sporadic pilot initiatives to mainstream application.

3.3.3 Case 3: Frontline Teacher Innovation under Resource Constraints

Where institutional digital support is inadequate, proactive exploration by frontline teachers often becomes a key breakthrough for digital practice.

In parts of South Asia such as Nepal and Sri Lanka[9], as well as African contexts, including Ghana and Nigeria[10], frontline teachers widely adopt accessible tools such as instant messaging applications and generative AI to support daily teaching, covering communication, content development and assessment. Often initiated by individual teachers without institutional backing, these practices reflect strong adaptability among educators under incomplete policy frameworks.

While such bottom-up innovation accelerates the initial adoption of technology, without sustained institutional support and coordination, it is difficult to transform localised bright spots into institutionalised mechanisms or to achieve a shift from "individual initiative" to "institutional support".

3.3.4 Case 4: Empowering Institutional Leaders and Management with Digital Competencies

As Africa's premier higher education coordinating body, the Association of African Universities (AAU) has launched a strategic ICT leadership capacity-building initiative for African higher education institutions, setting an important benchmark for the digital transformation of African higher education. Targeting Directors of ICT (DICT), Chief Information Technology Officers (CITO) and senior ICT administrators across African universities, the initiative focuses on upgrading institutional digital leadership and governance, injecting key momentum into Africa's higher education digital transformation[11].

By systematically empowering African university ICT directors and CITOs, the AAU equips ICT leaders with core competencies in digital governance, cybersecurity, enterprise resource planning system implementation and institutional digital strategy formulation. It also fosters cross-border communities of practice to facilitate the sharing and mutual learning of digital tools, policy frameworks and infrastructure development models across institutions and regions. This enables African universities to respond to digital change in a more coordinated, systematic and sustainable manner, offering replicable and scalable practical pathways for regional higher education digital transformation.

The advancement of digitalisation and AI empowerment in Global South higher education presents diverse pathways. Mature models feature scaled and systematic advancement driven by national coordination mechanisms and unified platforms. Equally effective approaches include enhancing institutional digital support capacity through multilateral cooperation, regional linkages and ecosystem co-construction. Amid resource constraints, higher education workforce demonstrates strong innovative vitality. Targeted capacity building for institutional leaders and ICT administrators further consolidates the governance foundation of transformation.

These case studies collectively indicate that transformation effectiveness hinges on the coordinated improvement of higher education workforce's digital competence and institutional digital support capacity. Only by integrating top-level design with frontline innovation and combining multilateral cooperation with local contextual adaptation can digital transformation evolve into a sustainable, replicable and deepened long-term development paradigm.

1.UNESCO-ICHEI and UNESCO. (2025). *Digital Leap in East Asia: A Regional Synthesis on Higher Education Transformation.*

2.UNESCO-ICHEI and ALECSO. (2023). *Research Report Digital Transformation of Higher Education Teaching and Learning in Arab Region.*

3.UNESCO-ICHEI and UNESCO. (2025). *Report on Digital Transformation in Higher Education in South Asia.*

4.UNESCO-ICHEI and UNESCO. (2025). *Report on Digital Transformation in Higher Education in Southeast Asia.*

5.UNESCO-ICHEI and UNESCO IESALC.(2025).*Transforming the digital landscape of higher education in Latin America and the Caribbean.*

6.UNESCO-ICHEI and UNESCO IICBA. (2026). *Digitalisation and the Use of Artificial Intelligence in Higher Education in Africa: An Exploratory Study.*

7.UNESCO-ICHEI and UNESCO.(2025).*Digital Leap in East Asia: A Regional Synthesis on Higher Education Transformation.*

8.Please refer to reference 3.

9.Please refer to reference 3.

10.Please refer to reference 6.

11.Please refer to reference 6.

Part IV

Key Challenges for Higher Education's Transition from Digitalisation to AI Empowerment

While digitalisation and AI open up new possibilities for the development of higher education, there are striking disparities in progress across countries and institutions in the Global South. Constrained by practical realities such as resources, capabilities and institutional arrangements, this transformation cannot yet advance in a comprehensive and in-depth manner across all contexts. Pressures are primarily concentrated on enhancing the digital competencies of the higher education workforce and strengthening institutions' digital support capacity. Against these complex challenges, it has become an urgent and critical task to ensure that digital and AI empowerment always upholds a people-centred approach, so as to truly empower rather than constrain teaching and learning[1].

4.1 Challenges in Digital Competencies for Higher Education Workforce

The effectiveness of digitalisation and artificial intelligence depends largely on whether university faculty, staff and administrators can integrate technologies into their daily work. Nevertheless, multiple constraints limit their level of preparedness, willingness to participate, and sustained engagement, hindering the effective development and improvement of their digital literacy and skills.

4.1.1 Misalignment Among Policies, Practices and Incentive Mechanisms

From a regional perspective across the Global South, there remains a long-standing misalignment among national policies, classroom practices, and institutional incentive mechanisms.

·**Disconnection between policy and practice:** Frontline teachers have limited participation in policy formulation, weakening the alignment between policies and instructional practices. In many South Asian and African countries, for instance, national digital education policies are often designed in a top down manner and remain disconnected from classroom realities[2].

·**Discrepancy between policy requirements and implementation conditions:** Although national policy frameworks emphasise high-level digital and AI literacy, many teachers are constrained by resource shortages in actual implementation and face substantial challenges in terms of time allocation, digital infrastructure and instructional support, particularly in parts of South Asia, Southeast Asia and Africa[3].

·**Insufficient incentive mechanisms:** Digital innovation has not been fully incorporated into performance evaluation and career promotion systems, undermining teachers' enthusiasm for sustained participation. This phenomenon is prevalent across many Global South countries.

·**Disconnection between academic curricula and industry needs:** Training content tends to focus narrowly on technical skills rather than labour-market-relevant competencies, resulting in a misalignment between graduate outcomes and industry talent demands. In regions with strong demand for digital professionals such as Central Asia and Southeast Asia, higher education talent training struggles to match labour market requirements[4].

4.1.2 Gaps in Professional Development and Digital Teaching Competencies

Due to the lack of systematic and long-term professional development opportunities, teachers struggle to master advanced digital skills, resulting in slow progress in the innovation of teaching methods.

·**Limited and inequitable professional development opportunities:** Access to continuous and high-quality professional development programmes for teachers remains uneven across regions and institutions. Disparities in teacher training opportunities are significant among institutions in Africa, Latin America and South Asia[5], with high-quality resources highly concentrated in only a few institutions.

·**Shortage of advanced and AI-related competencies:** As expectations of teachers continue to rise, opportunities to develop high-level digital and artificial intelligence skills remain scarce, especially in resource-constrained settings. Even in better-resourced regions such as East Asia and the Arab States[6], teachers generally lack pedagogical competencies for teaching with generative AI.

4.1.3 Challenges in Workload, Sustainability and Inclusiveness

Growing expectations intertwined with structural constraints pose challenges to sustainability and exacerbate new forms of inequality.

·**Increased workload and lack of support:** While fulfilling existing teaching, research and administrative duties, higher education workforce is also expected to adopt digital and AI tools, resulting in a sharp surge in workload.

·**Cumulative psychological burden undermines teacher engagement:** Without effective institutional support, mounting psychological and work pressure tends to trigger teacher burnout and a loss of innovative motivation, further fostering resistance to transformation. This trend is observed in institutional practices across some African countries[7] according to the regional report.

·**Language and content barriers worsen digital inequality:** The scarcity of multilingual and localised teaching resources, coupled with gaps in AI literacy, has contributed to new forms of digital inequality and restricted inclusive participation in the digitalisation process. Issues such as the multilingual environment in Africa and the shortage of resources for minority languages in South Asia[8] have created new digital divides.

4.2 Challenges in Institutional Digital Support Capacity

Institutional support capacity is the key determinant of whether digital transformation can be effectively implemented, comprehensively coordinated, and sustained in the long run. Across regions of the Global South, structural and institu

tional constraints remain prominent, limiting the scale and effectiveness of institutional digital development. UNESCO IESALC's analysis of 16 higher education institutions worldwide reveals a notable gap: while digitalisation and AI bring significant opportunities for pedagogical and administrative transformation, institutional responses remain fragmented largely due to the absence of a holistic, university-wide AI strategy. Most universities treat AI as an IT department issue rather than a core institutional governance and academic transformation priority. As a result, such efforts lack support from institution-wide competency frameworks[9].

4.2.1 Bottlenecks in Infrastructure and Resource Provision

·**Persistent gaps in connectivity and access:** Limitations in internet access, device availability and reliable power supply remain major barriers, particularly in rural Africa and remote areas of South Asia[10].

·**Severe last-mile connectivity challenges:** Many higher education institutions are still burdened by high data traffic costs and inadequate last mile infrastructure, restricting their capacity to engage effectively in the digital learning ecosystem.

·**Mismatch between infrastructure and digital ecosystems:** Investment in hardware does not always align with corresponding digital platforms, educational content and support services, thereby limiting effective utilisation. A tendency to prioritise hardware over platforms and content is prevalent across most regions, with some exceptions in East Asia and the Arab Region.

4.2.2 Misalignment Between Policy Planning, Leadership and Implementation

·**Fragmented coordination and weak policy-implementation alignment:** There is a lack of close linkage among government authorities, higher education institutions and external partners, resulting in fragmented and loosely implemented overall strategies. Meanwhile, a persistent gap remains between macro policy objectives and institutional implementation capacities, a pattern particularly evident in Latin America, Africa and South Asia[11].

·**Digitalisation and AI-empowered leadership still require improvement:** Some institutions still face practical constraints in terms of strategic coordination, multi-stakeholder collaboration, and organisational change management for digital transformation. They also encounter difficulties and challenges in effectively coordinating stakeholders, systematically promoting organisational change, and integrating digital development priorities into the institutional governance structure.

·**Lack of long-term systematic planning for transformation processes:** Constrained by limited resources, external environments and infrastructures, institutional leaders struggle to plan from a long-term development perspective and systematically build a stable and sustainable supporting environment for digital transformation. This results in a lack of continuity and long-term effectiveness in implementation. For example, some countries in parts of Africa and South Asia generally rely on short-term projects and fail to establish a steady enabling environment.

·**Lack of internal cooperation mechanisms for industry-academia integration:** Higher education institutions and industry have yet to form stable, long term internal mechanisms for talent cultivation. Institutions lack sufficient incentives to align with industrial demands and jointly nurture talents, making it difficult to systematically integrate real industry needs into the entire curriculum and digital skills training system. For example, although all five Central Asian countries have listed digital talent development as a national strategy, collaboration between university and enterprise remains predominantly project based, with a general shortage of long acting mechanisms for industry academia integration[12].

4.2.3 Persistent Disparities and Inequities in Development

·**Uneven development across regions and institutions:** Significant disparities exist in digital capacity between regions and institutions. Taking the African continent as an example, such disparities reflect broader socioeconomic inequalities.

·**Urban-rural divide and inequitable resource allocation: i**nstitutions in rural and remote areas have long been disadvantaged in infrastructure, staffing and resource investment, a common phenomenon in South Asia, Africa and Southeast Asia[13].

·**Gender and inclusion gaps in participation and leadership:** Despite improvements in digital access, women remain underrepresented in leadership positions, digital technology and STEM fields, limiting inclusive participation in empowerment and transformation. This issue is particularly acute in the Arab States, Africa and South Asia[14].

To address the above challenges, coordinated and forward-looking strategies must be adopted simultaneously at both institutional and higher education system levels. Accordingly, the following chapter puts forward key action priorities and policy recommendations to support higher education across the Global South in advancing toward a more inclusive, sustainable and responsible digital transformation.

1.UNESCO. (2026).*Transforming higher education: Global collaboration on visioning and action.*

2.UNESCO-ICHEI and UNESCO IICBA. (2026).*Digitalisation and the Use of Artificial Intelligence in Higher Education in Africa: An Exploratory Study;*UNESCO-ICHEI and UNESCO.(2025).*Report on Digital Transformation in Higher Education in South Asia.*

3.UNESCO-ICHEI and UNESCO.(2025).*Report on Digital Transformation in Higher Education in Southeast Asia.*

4.UNESCO-ICHEI. (2023). *Research report on Digital Talents and Digitization of Higher Education in Central Asia.*

5.UNESCO-ICHEI and UNESCO IESALC.(2025).*Transforming the digital landscape of higher education in Latin America and the Caribbean.*

6.UNESCO-ICHEI and ALECSO. (2023). *Research Report Digital Transformation of Higher Education Teaching and Learning in Arab Region.*

7.Please refer to reference 3.

8.UNESCO-ICHEI and UNESCO IICBA. (2026). *Digitalisation and the Use of Artificial Intelligence in Higher Education in Africa: AnExploratory Study.*

9.UNESCO-ICHEI and UNESCO.(2025).*Report on Digital Transformation in Higher Education in South Asia.*

10.UNESCO IESALC.(2025).*The challenges of AI in higher education and institutional responses: Is there room for competency frameworks?* https://unesdoc.unesco.org/ark:/48223/pf0000394935.locale=en.

11.Please refer to reference 2.

12.Please refer to reference 5.

13.Please refer to reference 6.

14.Please refer to reference 8.

Part V

Strategic Priorities for the Global South

Based on the above analysis, this section proposes priority action directions to support higher education in the Global South in achieving inclusive, scalable and sustainable digital and AI-empowered transformation.

5.1 Empowering Higher Education Workforce as the Core Force for AI-Empowered Transformation

The higher education workforce sits at the core of the effective application of digital and AI technologies. Addressing deficiencies in training, incentive mechanisms and professional autonomy requires more systematic and long-term development strategies. It is essential to incorporate teaching staff, administrative managers, technical personnel and institutional leaders into the framework of digital and AI competency development. This orientation is highly consistent with the Santiago Consensus reached at the 2025 World Teachers' Summit. The Consensus stresses that digital literacy should be systematically embedded into policy frameworks for education practitioners to strengthen their digital and AI capabilities and empower the transformation and sustainable development of education through targeted investment in teachers[1].

5.1.1 Establish Competency-Oriented Professional Development Pathways

·**Take competency frameworks and micro-certification as useful tools to promote teachers' professional development:** Align with international digital and AI competency frameworks, design micro-certification courses covering different job types, and provide clear digital skill progression pathways, as well as skill certification and professional recognition, for all types of higher education workforce. To enhance their value and impact, micro-certification should be mutually recognized across borders, for example through regional qualification frameworks to foster regional academic mobility and shared talent pools in the Global South.

·**Shift to continuous, platform-driven professional learning:** Drawing on platforms such as IIOE, Coursera, and EdX, transition from one-off training to a continuous and flexible professional learning model, and expand coverage to university administrators and technical personnel.

·**Promote the transformation of AI+industry-academia integration teaching methods:** Launch "AI+Industry" micro-certification courses to help teaching staff transition from basic digital literacy to applied AI teaching practices, while enhancing the understanding and support of university leaders and administrators for digital teaching reform.

5.1.2 Strengthen Incentives, Recognition and Professional Development Mechanisms

·**Integrate digital competencies into career development pathways:** Link digital teaching and innovation (including micro-certification acquisition) to performance appraisal, promotion and career progression frameworks, so as to sustain teachers' engagement and reduce reliance on individual voluntary efforts.

·**Institutionalise recognition for teaching innovation:** Establish mechanisms such as pioneer case awards, innovation funds, and micro-certification-based recognition to incentivise effective digital teaching practices.

·**Enhance peer learning through organised communities:** Leverage platforms including IIOE to facilitate ongoing exchange and knowledge sharing, and foster the development of communities of practice.

5.1.3 Strengthen Teachers' Autonomy, Inclusiveness and Contextualised Capacity Building

·**Incorporate frontline teachers' voices into policy and curriculum design:** Through consultations and multi-stakeholder dialogues and meetings, ensure that educators are actively involved in the formulation of digital strategies and reforms.

·**Expand equitable access and inclusive capacity building:** Through targeted initiatives and platforms such as IIOE, prioritise under-resourced institutions and marginalised groups, including women educators. The Women Leading Change in Africa initiative, jointly launched by UNESCO-ICHEI and UNESCO's Institute for Information Technologies in Education (IITE), serves as a typical example. It empowers women teachers to lead digital and AI-empowered practices in classrooms and local communities.

·**Strengthen localised and flexible learning pathways:** Promote the co-development of localised educational content, and scale up the adaptation of multilingual, micro-certificate and "AI + Industry" courses to ensure their relevance in diverse contextual settings.

5.2 Strengthen Institutional Capacity to Support Sustainable Digital and AI Empowerment

A sustainable and inclusive digital transformation process relies on robust institutional capacity. It demands coordinated efforts in governance, digital infrastructure, partnership development and regulatory frameworks, to ensure that digital and AI-empowered development is both effective and long-term sustainable.

5.2.1 Strengthen Governance, Leadership and Implementation Capabilities

·**Strengthen alignment between policy and institutional implementation:** Consolidate coordination mechanisms to ensure national strategies are translated into actionable institutional practices. This includes aligning national digital strategies with the development of "AI + Industry" micro-certification courses, enabling higher education to effectively respond to local and regional economic needs.

·**Formulate actionable roadmaps for digital and AI empowerment:** Support institutions in defining development priorities and timelines, including targets for AI integration through micro-certification programmes for teacher professional development and AI competency building.

·**Enhance leadership for digital and AI empowerment:** Empower institutional leaders and administrators to build digital and AI-related competencies, drive digital and AI-empowered practices, embed digital priorities into governance structures, and ensure long-term accountability mechanisms and strategic vision. The regional and sub-regional studies specifically highlight that improving the digital knowledge, awareness and capacity of university presidents, deans and other senior leaders, as well as administrative staff, is critical to advancing the digital transformation of higher education[85].

·**Establish regional dialogue and coordination mechanisms:** Leverage the Regional Dialogue hosted by UNESCO-ICHEI and partners to build a regular communication platform among national education authorities, higher education institutions, international organisations and industry actors across regions. This facilitates policy experience sharing, regional collaboration and multi-stakeholder consensus-building, better aligns digital education strategies with institutional realities and local and national needs, and improves the systematic coordination and implementability of transformation policies. It is also critical to emphasize the ethical dimension of AI empowerment and develop responsible AI governance frameworks in higher education, in line with principles of transparency, fairness, privacy, accountability, and inclusion. Regional initiatives such as the ALECSO AI Ethics Charter[2] provide valuable guidance for advancing ethical, inclusive, and human-centred AI transformation in education.

5.2.2 Invest in Inclusive, Sustainable and Reliable Digital Infrastructure

·**Expand equitable access to connectivity and devices:** Bridge infrastructure gaps to enable broader groups to participate in digital learning and professional development. This is a prerequisite for effectively leveraging online platforms such as IIOE and delivering empowerment initiatives for teacher capacity building.

·**Narrow structural disparities across regions and institutions:** Prioritise investment in under-resourced areas to foster more balanced development. This includes ensuring such institutions are equipped with essential infrastructure, enabling them to engage in multilateral cooperation and access global resources.

·**Achieve synergy among infrastructure, platforms and ecosystems:** Beyond hardware investment, complement facilities with online platforms including IIOE, digital content and support services, so as to ensure effective utilisation of infrastructure.

5.2.3 Build a Collaborative, Platform-based and Industry-linked Ecosystem

·**Strengthen industry-academia collaboration:** Align higher education effectively with labour market demands through the joint development of curricula and "AI + Industry" training programmes.

·**Establish inter-institutional learning networks and communities:** Support the development of IIOE National Centres, IIOE Regional Centres and other relevant platforms to boost cooperation, resource sharing and collaborative capacity building, address fragmentation, and achieve scalable collaboration across higher education institutions.

·**Promote regional and international cooperation:** Scale up South–South cooperation and multilateral collaboration, and shift the transformation model from isolated project practices to a cooperation paradigm that prioritises collaboration, resource sharing and mutual support.

5.3 Future Strategy of UNESCO-ICHEI: Technology Empowerment, Multilateral Collaboration, Local Implementation, and Mutual Benefit

Digitalisation and AI provide a practical pathway for higher education in the Global South to address gaps, improve quality, and promote equity while upholding ethics, governance, and inclusion. However, significant disparities in capacity, resources, and conditions persist across regions. Without coordinated, sustained, and effective action, these gaps will widen further.

Moving forward, UNESCO-ICHEI will continue to anchor its work in the real needs of digital and AI-empowered transformation of higher education in the Global South. Guided by the core directions of technology empowerment, multilateral collaboration, local implementation, and mutual benefit, it will steadily strengthen the digital competencies of the higher education workforce and institutional digital support capacity.

Meanwhile, UNESCO-ICHEI will further leverage the exemplary role of the Higher Education Digital Transformation Pioneer Case Award, summarise and scale up replicable and adaptable transformation practices, and help more institutions improve their digital governance and support capacity. It will establish regular communication mechanisms through regional dialogues to promote coordinated efforts among national education authorities, institutions, industry actors, and international organisations. UNESCO-ICHEI will continue to strengthen its global partnership network, deepen multilateral collaboration among institutions, governments, enterprises, and international organisations, and enhance the hub functions of IIOE National Centres and IIOE Regional Centres. This will facilitate the precise matching of high-quality resources with local transformation needs and foster a long-term, stable, and sustainable digital empowerment ecosystem.

As a contributor to UNESCO's Education 2030 Framework for Action, UNESCO-ICHEI will always uphold a human-centred, inclusive and equitable development philosophy. Through high-quality capacity development and practical cooperation, it will continue to advance the digital and AI-empowered transformation of higher education in the Global South, and contribute to the achievement of equitable and quality education and the Sustainable Development Goals.

1.UNESCO-ICHEI and UNESCO IESALC.(2025).*Transforming the digital landscape of higher education in Latin America and the Caribbean.*

2.UNESCO-ICHEI and ALECSO. (2023).*Research Report Digital Transformation of Higher Education Teaching and Learning in Arab Region.*

References

Regional and sub-regional reports

[1] UNESCO-ICHEI and UNESCO. (2025). Digital Leap in East Asia: A Regional Synthesis on Higher Education Transformation. https://unesdoc.unesco.org/ark:/48223/pf0000393828

[2] UNESCO-ICHEI and UNESCO. (2025). Report on Digital Transformation in Higher Education in South Asia.

https://en.ichei.org/en/knowledge/yjbg/2137.html

[3] UNESCO-ICHEI and UNESCO. (2025). Report on Digital Transformation in Higher Education in Southeast Asia.

https://en.ichei.org/en/knowledge/yjbg/1993.html

[4] UNESCO-ICHEI. (2023). Research Report on Digital Talents and Digitization of Higher Education in Central Asia. https://en.ichei.org/en/knowledge/yjbg/741.html

[5] UNESCO-ICHEI and ALECSO. (2023). Digital Transformation of Higher Education Teaching and Learning in the Arab Region. https://en.ichei.org/en/knowledge/yjbg/742.html

[6] UNESCO-ICHEI and UNESCO IICBA. (2026). Digitalisation and the Use of Artificial Intelligence in Higher Education in Africa: An Exploratory Study. https://en.ichei.org/en/knowledge/yjbg/4029.html

[7] UNESCO-ICHEI and UNESCO IESALC. (2025). Transforming the Digital Landscape of Higher Education in Latin America and the Caribbean. https://en.ichei.org/en/knowledge/yjbg/743.html

Global reports

[8] African Union. (2024). Continental Artificial Intelligence Strategy. https://au.int/en/documents/20240809/continental-artificial-intelligence-strategy

[9] Molina, E., & Medina, E. (2025). AI Revolution in Higher Education. What you need to know. In Digital Innovations in Education. World Bank. World Bank. https://openknowledge.worldbank.org/entities/publication/81b862e6-fdda-470a-a142-4a7c43e7b049

[10] OECD. (2026). Digital Education Outlook 2026: Exploring Effective Uses of Generative AI in Education. https://www.oecd.org/en/publications/oecd-digital-education-outlook-2026_062a7394-en.html

[11] UNESCO (2026). Transforming higher education: Global collaboration on visioning and action. https://www.unesco.org/en/articles/transforming-higher-education-global-collaboration-visioning-and-action

[12] UNESCO Bangkok & UNESCO-ICHEI. (2021). Building Ecosystems for Online and Blended Learning: Advancing Equity and Excellence in Higher Education in the Asia-Pacific: policy brief. https://unesdoc.unesco.org/ark:/48223/pf0000375474.

[13] UNESCO, UNICEF, ITU (2026). Charter for Public Digital Learning Platforms: Seven principles to steer and sustain public digital learning platforms. https://www.unesco.org/sites/default/files/medias/fichiers/2026/03/Proposed%20final%20version%20Charter_19.03.2026.pdf

[14] UNESCO. (2018). ICT Competency Framework for Teachers. https://www.unesco.org/en/digital-competencies-skills/ict-cft

[15] UNESCO. (2024). Six Pillars for the Digital Transformation of Education: A Common Framework. https://unesdoc.unesco.org/ark:/48223/pf0000391299.

[16] UNESCO. (2025). AI Competency Framework for Teachers. https://www.unesco.org/en/articles/ai-competency-framework-teachers

[17] UNESCO. (2025). Higher education: figures at a glance. https://unesdoc.unesco.org/ark:/48223/pf0000394112

[18] UNESCO-IESALC. (2025). The Role of Higher Education in National Artificial Intelligence Strategies: A Comparative Policy Review. https://www.iesalc.unesco.org/en/articles/role-higher-education-national-artificial-intelligence-strategies-comparative-policy-review

[19] UNESCO IESALC (2025). The challenges of AI in higher education and institutional responses: Is there room for competency frameworks? https://unesdoc.unesco.org/ark:/48223/pf0000394935.locale=en

[20] World Bank (2024). Digital Pathways for Education: Enabling Greater Impact for All. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099102124103012716/null

[21] World Bank. (2025). Digital Progress and Trends Report 2025: Strengthening AI Foundations. https://www.worldbank.org/en/publication/dptr2025-ai-foundations

[22] Ministry of Education of the People's Republic of China. (2025). Wuxian de keneng — Shijie gaodeng jiaoyu shuzihua fazhan baogao [Infinite possibilities: World higher education digitalisation development report].

Appendix 1

Digital Industry Talent and Higher Education Digitalization in Central Asia Executive Summary

Digital Industry Talent and Higher Education Digitalization in Central Asia

Scan the QR code to read the full report

This report was initiated and coordinated by the UNESCO□ICHEI(Shenzhen, China),and jointly completed with the Tashkent University of Information Technologies (Uzbekistan), and the Institute of Central Asian Studies at Lanzhou University. The research was supported by expert teams from Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Turkmenistan, reflecting the collective insights of policymakers, scholars, and practitioners.

Editors and authors include:

•Professor Yang Shu, Lanzhou University

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*This summary presents only the report's findings. Please refer to the full report for a detailed understanding of the research.

The Central Asian countries of Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan are located in the heart of the Eurasian continent and serve as key hubs of Eurasian geopolitics. Due to differences in resource endowment, development foundation and development models, the economic development levels of these Central Asian countries vary significantly. With the advent of the digital industry technology revolution leading to the era of Industry 4.0, the Central Asian countries all attach great importance to the application of intelligent technologies and actively participate in the digital transformation of industries. Objectively speaking, limitations such as funds, technology and talents have led to many difficulties in the development of their digital industries. In this report, the author analyzes the national policies of the five Central Asian countries and the measures to promote the digitalization of higher education and the development of digital talent, and depicts the opportunities and challenges faced by each country during its development.

As a regional leader, **Kazakhstan** launched the "Digital Kazakhstan" national program as early as 2017, taking solid steps in e government innovation and digital infrastructure. **Uzbekistan**, through its "Digital Uzbekistan 2030" strategy, has spurred a wave of digital transformation across all sectors of its society and economy. **Kyrgyzstan**, with an open and inclusive approach, actively builds bridges for international cooperation, attracting external resources to support its own development. Meanwhile, constrained by practical limitations in infrastructure and funding, **Tajikistan** and **Turkmenistan** are advancing their digital transitions with more cautious and gradual strides.

Confronting these challenges, Central Asian countries have taken pratcitcal actions exploring digital transformation pathways suited to its own development stage and practical conditions. These diverse practices not only reflect the differences in digital foundations and development priorities among the countries but also provide a rich repository of cases for experience exchange and mutual learning across the region. Each pathway holds its unique value, collectively painting a multifaceted picture of the digital transformation of higher education in Central Asia.

From the practices of Central Asian countries, we can discern a clear path—by building a systematic support system, can we truly drive the deep transformation of education in the AI era. As AI technologies continue to profoundly reshape higher education, these concrete approaches remain key to enhancing the overall capabilities of higher education institutions:

·Building an integrated educational ecosystem: promote the parallel development of traditional classrooms, distance learning, and blended learning models. Establish a unified and open digital education platform that consolidates high-quality electronic resources from both domestic and international sources. Pay special attention to digital access in rural and remote areas to effectively bridge the educational digital divide across different regions.

·Teacher Capacity Building: Establish a competency development framework encompassing digital literacy, instructional design, and ethical judgment. Through micro credential certifications, specialized workshops, and other formats, assist teachers not only in mastering AI tools but also in gaining a deeper understanding of how to integrate them effectively into teaching practice.

·Deepening multilateral and diverse international cooperation: Expand the reach of transnational educational programs, establish regional higher education partnership networks, promoting the open sharing of teaching resources. Promoting mutual recognition of academic standards and facilitating the healthy mobility of talent are all directions institutions can strive toward.

·Strengthening industry□education integration: By establishing joint innovation laboratories with enterprises, cooperating with IT training centers, and launching cutting edge courses such as big data analytics and intelligent manufacturing under the "AI + Disciplines" framework, higher education institutions can closely align with industry talent demands. This enables them to better cultivate interdisciplinary professionals who meet the needs of the digital economy, ensuring that education genuinely serves societal development.

Appendix 2

Digital Transformation of Higher Education Teaching and Learning in Arab Region Research Report Executive Summary

Digital Transformation of Higher Education Teaching and Learning in Arab Region Research Report

Scan the QR code to read the full report

This research report was jointly completed by the UNESCO International Centre for Higher Education Innovation (UNESCO-ICHEI) and the Arab League Educational, Cultural, and Scientific Organisation (ALECSO). The research amalgamates the collective wisdom of policymakers, university leaders, and domain experts from ten countries: Algeria, Egypt, Iraq, Jordan, Saudi Arabia, Mauritania, Morocco, Tunisia, the UAE, and Yemen, reflecting the cooperative spirit of the higher education sector in the Arab region, pushing for common development through collaborative research. Editors and authors include:

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•Dr. Tarek Ben YOUSSEF, ALECSO

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*This summary presents only the report's findings. Please refer to the full report for a detailed understanding of the research.

As new technologies, such as AI, are increasingly integrated into the educational field, higher education institutions are undergoing systematic and digital transformations that impact everything from governance structures to operational models. The UNESCO-ICHEI has jointly published the "Research Report on Digital Transformation in Higher Education Teaching and Learning in the Arab Region." This report focuses not only on the introduction of technology but also aims to identify the challenges, demands, and opportunities during this transformation, sharing best practices to prevent an expanding gap between countries that lead in digitalisation and those in the Arab region.

The report investigates ten Arab countries, focusing on the following key questions: What policies need to be developed in the Arab region to promote digital transformation? What infrastructure is necessary? What valuable successful cases can be emulated? How can a timeline be designed? Are educators and students fully prepared to embrace digital transformation? And how can governance structures be optimised to effectively lead this transformation?

The report, through detailed data analysis, reveals significant discrepancies in the digital transformation of higher education across the Arab region.

·Significant Infrastructure Gaps: Data indicate that infrastructure remains the biggest bottleneck for transformation, with considerable differences in household internet access and computer ownership rates across different income countries.

·Insufficient Policy Coverage: While all countries recognise the importance of digitalisation, very few have translated this into national-level higher education strategies. Among the ten survey countries, as of December 2023, only four (Jordan, Morocco, Algeria, Mauritania) had clear higher education digitalisation strategies.

·Weak Teacher Training Systems: Systematic and ongoing professional development mechanisms remain underdeveloped. Training tends to focus on the use of tools rather than nurturing deeper teaching capabilities in online teaching design and innovative assessment, failing to support a meaningful transformation in teaching.

·Lack of Quality Assurance Mechanisms: The study found that only Iraq and Saudi Arabia have established a quality assurance framework for digital teaching and learning. Most universities have not established internal quality control systems for digital education and lack monitoring tools, assessment processes, and improvement mechanisms, resulting in difficulties in guaranteeing the quality of online teaching and in accumulating experience.

Based on the research conclusions, the report presents 26 strategic recommendations across five key dimensions, aiming to progressively advance digital transformation in higher education in the Arab region in a layered and systematic manner, ultimately achieving an inclusive, high-quality, and sustainable common vision.

1.National Level: Governments should integrate broadband internet into public infrastructure, accelerating the coverage and quality improvement of national networks. Active measures should be taken to promote the affordability of household computers and internet costs, fundamentally alleviating educational equity issues stemming from resource disparities.

2.Institutional Policy and Planning: Countries should develop specialized policies and strategies for digital transformation in higher education and establish strong leadership mechanisms. Institutions are encouraged to formulate implementation plans that fit their specific characteristics within the national framework while simultaneously perfecting regulatory and assessment systems for digital learning.

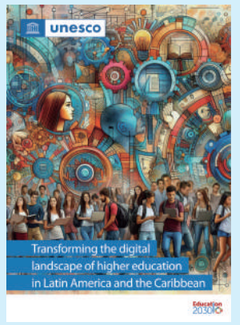
3.Teachers and Teaching: A sustainable training system for teachers' digital teaching skills should be established to ensure that their teaching skills develop in accordance with technology and instructional methodologies. It is recommended to introduce certification mechanisms to formally recognise teachers upon completion of digital teaching training, alongside corresponding incentive measures to encourage teachers to continue engaging in professional development and course innovation.

4.Digital Learning and Transformation: Nationally clarifying the proportional goals and assessment standards of different digital teaching modalities (online, blended, face-to-face) while allowing institutions the flexibility to adjust according to their actual circumstances should be encouraged. Institutions should participate in open educational resource initiatives, develop guidelines for the implementation and assessment of digital teaching, and promote a culture of sustainable innovation and reflection.

5.Quality Assurance in Digital Teaching and Learning: Collaborative efforts should be made to establish a framework for quality assurance in digital teaching, which delineates assessment standards and designates responsible bodies to oversee the implementation and effectiveness of digital teaching practices.

Appendix 3

Transforming the Digital Landscape of Higher Education in Latin America and the Caribbean Executive Summary



Transforming the digital landscape of higher education in Latin America and the Caribbean

Scan the QR code to read the full report

This collaborative research was conducted by the International Institute for Higher Education in Latin America and the Caribbean (UNESCO IESALC) and the International Centre for Higher Education Innovation under the auspices of UNESCO(UNESCO-ICHEI). This research received strong support from staff and management at higher education institutions in Argentina, Brazil, Chile, and Venezuela. It also includes interviews with senior government officials responsible for higher education in Argentina, Brazil, and Chile, as well as key representatives from national university associations. The successful completion of this study reflects a shared vision for advancing the digital transformation of higher education within the Latin American and Caribbean region.

Editors and authors include: Francesc Pedró, Emma Sabzalieva, Eglis Chacón, Adrian Estrela Pereira, Arianna Valentini, Luz Gamarra Caballero, Dana Abdrasheva

*This summary presents only the report's findings. Please refer to the full report for a detailed understanding of the research.

The report indicates that while the pandemic significantly propelled the use of technology in teaching and learning in Latin America, it primarily accelerated digital change rather than genuine digital transformation in higher education. To achieve true transformation, the report recommends a series of strategies tailored to the socioeconomic contexts and phases of digital transition across different countries. For instance, Brazil and Argentina lead by implementing national strategies and investments; Chile and Colombia focus on quality frameworks and technology pilots; while Ecuador and Bolivia face infrastructure and resource bottlenecks.

The research finds that higher education institutions responded differently to the challenges of digital transformation. Innovative practices by leading Institutions include:

·The Southwest Provincial University of Buenos Aires, **Argentina**, employs blockchain technology to ensure the authenticity of diplomas.

·The Monterrey Institute of Technology in **Mexico** uses an AI chat assistant to enhance student services, managing 14,000 inquiries.

·The University of the **Republic in Uruguay** promotes the EVA virtual training environment.

·The importance of inter-institutional collaboration is evident. The Federal Network in **Brazil** successfully negotiated internet access solutions through a collective effort of 41 institutions, demonstrating the power of unity in achieving common goals.

Based on this study, seven strategic recommendations are proposed:

1.Establish Long-term Planning and Build Process Agility: Create a phased target system that goes beyond immediate tasks, incorporating continuous and consistent dynamic development. The collaborative model seen in Chile's "New Patagonia" initiative is a noteworthy example to promote.

2.Emphasise the Quality of Digital Transformation: Develop quality frameworks aligned with local needs, encouraging innovation rather than merely layering technology upon technology. The collaboration between Argentina and France regarding the managerial digital transformation plan serves as a good practice.

3.Ensure Higher Education Institutions Can Respond to Digital Changes: Empower institutions with the autonomy to swiftly adjust courses and services. The multi-channel financing model employed by the Federal Institute of Rio Grande do Sul in Brazil showcases flexibility by combining institutional resources, governmental sponsorship, and corporate collaboration.

4.Promote a Variety of Blended Learning Formats: Respond to the strong student demand by integrating face-to-face interaction with online flexibility. Surveys indicate that blended learning is the preferred future learning model.

5.Integrate Digital Transformation into Ongoing Professional Development for Faculty and Staff: Provide continuous training to transition faculty from "tool users" to "learning designers." The National Association of Private Universities in Argentina has a six-year digital literacy programme that has reached 45% of its teachers.

6.Create and Maintain Spaces for Digital Transformation within HEIs: Address resource bottlenecks through public-private partnerships. The Private University Association in Brazil has held digital transformation seminars in state capitals to enhance awareness.

7.Utilise Digital Transformation in Higher Education to Promote Educational Equity: Prioritise access for disadvantaged groups. For example, the Peruvian government has established connectivity centres in remote areas, while Brazil has distributed laptops and modems.

Appendix 4

Report on Digital Transformation in Higher Education in Southeast Asia Executive Summary

Report on Digital Transformation in Higher Education in Southeast Asia

Scan the QR code to read the full report

This report is rooted in a joint research initiative between the UNESCO Regional Office in Bangkok (UNESCO Bangkok) and the International Centre for Higher Education Innovation under the auspices of UNESCO (UNESCO-ICHEI). The report covers research and case analyses of higher education institutions in Vietnam, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, East Timor, and the Philippines, and conducts a structured analysis of each institution's digital transformation.

Editors and authors include: Hong T.M Bui, Ting T.T.Le, and Hoa T.M. Nguyen

*This summary presents only the report's findings. Please refer to the full report for a detailed understanding of the research.

The research report systematically reviews the policy initiatives, practical explorations, and real-world challenges of digital transformation in countries such as Malaysia, Indonesia, Cambodia, Laos, and East Timor. As one of the world's most dynamic economic regions, Southeast Asia boasts nearly 700 million people and over 7,000 higher education institutions, providing education to approximately 12 million students. While many institutions experimented with digital tools more than a decade ago, the impact of the COVID-19 pandemic truly spurred large-scale transformation and exposed significant gaps in digital skills, infrastructure, funding, and institutional readiness.

Key findings:

-Research is extremely unevenly distributed, with significant knowledge gaps.

-Opportunities Outweigh Challenges, But Weaknesses Remain Prominent

-Country-Specific Practice Highlights: Innovative Examples of Differentiated Paths

Singapore has become one of the world's leading digital innovation nations, thanks to its outstanding digital transformation policies, continuous investment, and efficient implementation. Singapore has consistently invested heavily in building a robust digital infrastructure and a high-level talent development system, driving its vision of "Digital-Based, Service-Oriented" through the "Smart Nation Strategy" and the "Future Skills Upgrade Program." **Cambodia** has strengthened digital transformation by introducing transparent and comprehensive policies. In **Vietnam**, higher education generally focuses more on the construction of digital and physical infrastructure and knowledge development, while paying relatively less attention to knowledge exchange and cooperation, digital culture, knowledge creation and innovation, and knowledge management and application.

Looking to the future, the research suggests that five key pillars should be established to ensure the continuous digital transformation of higher education:

-Strategic Pillar 1: Teacher Professional Development (TPD) . Develop a comprehensive digital literacy strategy that enhances critical thinking, creativity, digital ethical behaviors and capability in digital and GenAI-embedded pedagogies to facilitate effective digital learning environments among HE academics, staff and students.

-Strategic Pillar 2: Digital Equity and Inclusion. Ensure all university members have equitable access to digital resources and opportunities, particularly those from disadvantaged backgrounds.

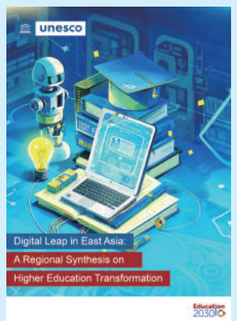
-Strategic Pillar 3: Digital Organizational Identity. Foster a strong DOI that aligns with the university's mission, the digital economy, and global digital trends.

-Strategic Pillar 4: Digital Well-being. Integrate digital well-being into the university's wellness programmes to manage the impacts of digital usage.

-Strategic Pillar 5: Digital Change Management. Equip staff and students to adapt to and benefit from emerging digital technologies and trends, including GenAI.

Appendix 5

Digital Leap in East Asia: A Regional Synthesis on Higher Education Transformation Executive Summary



Digital Leap in East Asia: A Regional Synthesis on Higher Education Transformation

Scan the QR code to read the full report

The report jointly produced by the UNESCO Beijing Office and UNESCO-ICHEI, titled ***Digital leap in East Asia: a regional synthesis on higher education transformation,*** systematically outlines the policies, practices, and challenges in the digital transformation of higher education in China, Japan, Mongolia, and the Republic of Korea.

This report is led by Bahadur Bista with an authoring and editorial team, including Robert Parua, Professor John Chi-Kin Lee, Professor Chee Kit Looi, Emeritus Professor Kerry Kennedy, Professor Wanpeng Lei, Professor Yongming Pu, Professor Huan Song, Associate Professor Junjie Shang, Professor Longkai Wu,and Yaohuizhuo Liu from China including Hong Kong SAR; Professor Jun Sakamoto, Professor Tomonori Ichinose and Kiichi Oyasu from Japan; Burmaa Myagmar, Professor Oyuntungalag Buyantur from Mongolia; Professor Cheolil Lim, Yoonjung Hwang, Yujie Han, Yeil Jeong from the Republic of Korea and colleagues from UNESCO Regional Office for East Asia, Hehua Xia, Tianzhou Zhao, and Mee Young Choi.

*This summary presents only the report's findings. Please refer to the full report for a detailed understanding of the research.

In recent years, countries in East Asia have achieved remarkable progress in expanding access to higher education. South Korea's gross enrollment rate reached 96.4% in 2022, while Mongolia achieved a coverage rate of 71.5% (2022). Japan and China recorded rates of 59.6% (2021) and 64.6% (2022), respectively. By expanding the reach of online education, optimizing resource allocation, and improving teaching quality, East Asia is striving to build a more inclusive and adaptable higher education system.

In China, the dual drivers of the "Digital China" strategy and the "Education Informatization 2.0" action plan emphasize strengthening digital infrastructure and promoting the deep integration of artificial intelligence with education. The goal is to advance educational modernization and broader educational equity. **Turning to Japan**, its vision of a "Society 5.0: Super Smart Society" places digital transformation at the core of societal development. Through the "GIGA School Program," Japan aims to equip all students with digital devices, making personalized learning accessible. **South Korea**, via its "Digital New Deal" and AI Education Alliance, focuses on cultivating talent for the digital era. It actively builds bridges for collaboration between universities and industries. **In Mongolia**, the "E-Mongolia" plan and the long-term "Vision 2050" initiative are dedicated to narrowing the urban-rural digital divide. By leveraging open educational resources, the country strives to enable students in remote areas to access quality education.

The digitalisation stride in East Asia is beyond comprehensive policy frameworks. **China's** breakthroughs in the MOOC (Massive Open Online Courses) sector have been particularly remarkable. Despite challenges such as varying course quality and low completion rates, the scale and model of China's MOOC efforts have already provided the world with a scalable example of digital education.At Kagawa University in **Japan**, a bottom up transformation is underway. Centered on the "Digital ONE" strategy, the university has integrated multi campus management through agile development and no code tools, enhancing operational efficiency. **South Korea**, on the other hand, has focused on "igniting the power of teachers." Through initiatives like the AI Education Alliance and policy labs, the country is systematically building the ***Teacher AI and Digital Competency Frameworkand*** deeply integrating AI tools into pre service training. **In Mongolia**, where resources and geographic conditions present challenges, the path to transformation reflects pragmatism and resilience. Anchored by the national "E Mongolia" initiative, universities such as the Mongolian University of Science and Technology have independently developed online learning systems like UNILIS and are actively exploring the application of blockchain in credential verification.

These practices formulate a series of regional recommendations towards a future of smart education.

Policy and Governance: Elevate digital transformation to a strategic level that drives socioeconomic development, establishing clear national guidelines and implementation roadmaps. The key is to create a well defined, multi level governance framework for data and cybersecurity, ensuring a compliant, secure, and innovative foundation for the use of educational data.

Digital Infrastructure: The priority is to ensure equitable and affordable access to high speed internet and essential digital devices for all teachers and students. Public investment in and promotion of high quality, localized open educational resources (OER) should be increased to fundamentally narrow the digital divide caused by geographic and economic disparities.

Digital Capacity Building: Provide teachers with continuous, systematic, and practice oriented training in digital skills, while deeply integrating critical thinking, digital literacy, and AI literacy into student curricula. Incentive mechanisms should also be established.

Pedagogy and Assessment: Advocate for an education first, ethics driven approach to integrating AI throughout the teaching and learning process, using learning analytics to provide personalized support for every student.

Digital Collaboration: Digital transformation cannot be achieved by any single institution alone. It necessitates fostering stable partnerships among governments, universities, private tech enterprises, and international organizations. Through collaborative platform development, resource sharing, joint research, and the exchange of best practices, cross sector synergy can accelerate the incubation and scaling of innovative solutions.

Appendix 6

Report on Digital Transformation in Higher Education in South Asia Executive Summary

Report on Digital Transformation in Higher Education in South Asia

Scan the QR code to read the full report

This report is a 2025 collaboration between UNESCO Regional Office in Bangkok(UNESCO Bangkok) and UNESCO-ICHEI. Written by a team of experts at the Tata Institute of Social Sciences in India, it brings together insights from educators and policymakers across South Asia.

Editors and authors include: Anil Mammen, Vinary Lautre

*This summary presents only the report's findings. Please refer to the full report for a detailed understanding of the research.

This study examined the state of digital transformation in higher education across six South Asian countries**—Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka.** It zooms in on the key challenges of integrating AI into higher education systems. Grounded in JISC's ***Framework for Digital Transformation in Higher Education,*** the findings offer a systematic review of the region's progress.

Digital transformation across South Asia is unfolding at very different speeds. India has laid out a relatively comprehensive policy framework anchored by its National Education Policy 2020. Bhutan, though small, stands out for its strong national-level coordination and integration of digital efforts. In contrast, countries like Nepal and Sri Lanka are still catching up when it comes to turning policy into practice and scaling tech adoption. It shows that **strong leadership and a clear strategic vision can often break through barriers more effectively than funding alone.**

The **state of digital infrastructure across South Asia mirrors the region's development divides.** India's universities are trailblazing in network coverage and platform development, while in countries like Bhutan and Nepal, rugged terrain and limited resources mean simply getting campuses online remains a struggle.

The digital competence gap among educators—shaped by experience, institution type, and access to support—is far wider than we imagined. **Sustained, systematic professional development is more urgent than ever.** At the same time, teacher workload and mental health have rarely been more visible, or more in need of care.

Digital transformation requires long-term and sustainable funding. In South Asia, many universities rely heavily on government allocations, with diversified, sustainable financing models yet to take shape. When short-term projects wind down and the spotlight moves on, whether transformation can go the distance depends largely on the resilience of the funding—and its ability to keep flowing.

Based on the study and South Asia regional case studies, the following recommendations unfold:

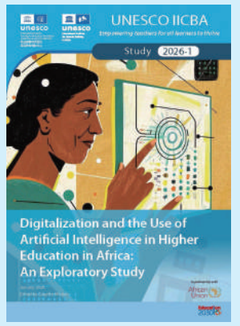
·Short-term recommendations (0-2 years): Design targeted and practice-oriented training programs; Improve digital governance policies at the university level; Strengthen the cybersecurity framework; Enhance the learning exchange network among teachers.

·Medium-term (3–5 years): Invest in the construction of digital infrastructure to create space for the implementation of more complex digital transformation; strengthen industry-university cooperation by establishing technology incubation centers in universities, and promote educational technological innovation and the development of ethical AI education solutions; strengthen academic exchanges and research cooperation among countries, establish the South Asian Higher Education Digital Alliance, and promote mutual recognition of credits, cross-border research cooperation, etc.

·Long-term (6+ years): Build a sustainable ecosystem. Establish a sustainable financing model, establish a regional technology-enabled research center, formulate regional digital education policies, establish common digital education standards, promote mutual recognition of online degrees, coordinate research funds and share best practices, and promote the support of the higher education system for evidence-based decision-making based on data analysis.

Appendix 7

Digitalization and the Use of Artificial Intelligence in Higher Education in Africa: An Exploratory Study Executive Summary



Digitalization and the Use of Artificial Intelligence in Higher Education in Africa: An Exploratory Study

Scan the QR code to read the full report

This study was jointly developed by the UNESCO International Institute for Capacity Building in Africa (IICBA) and the International Centre for Higher Education Innovation under the auspices of UNESCO (UNESCO-ICHEI).

Dr. Quentin Wodon is the lead author and the editor of this study. Special thanks to the African Association of Universities, the African and Malagasy Council for Higher Education (Conseil Africain et Malgache pour l'Enseignement Supérieur in French or CAMES), Deutscher Akademischer Austauschdienst, the Flemish Interuniversity Council and Bureau UOS, and OBREAL (which initially stood for the Observatory on EU-Latin America Relations) for helping to disseminate the survey. Finally, several authors of case studies are members of the UNESCO Chairs Network, with thanks to Maya Prince who manages the network at UNESCO for recommending selected UNESCO Chairs based in Africa to serve as potential contributors.

*This summary presents only the report's findings. Please refer to the full report for a detailed understanding of the research.

This report is based on a wide range of surveys in Africa and case studies in several countries, showcasing the innovative practices, challenges, and experiences of different types of higher education institutions across various African countries in digitalisation and AI application. The cases cover countries including Cameroon, Cote d'Ivoire, Ghana, Ethiopia, Kenya, Nigeria, Sierra Leone, South Africa, Togo, Zimbabwe, and Botswana. Among the surveyed institutions, the digitalisation process in higher education remains in its early stages. Although AI is expected to trigger significant industry changes, faculty, students, and administrators have not yet fully grasped these transformations. Notably, engagement with digitalisation and AI in Francophone Africa is significantly lower than in Anglophone Africa. Overall, the research results indicate that higher education institutions and national competent authorities need to increase their investment efforts to break through the constraints hindering digital transformation and AI application.

In summary, the African continent exhibits significant regional linguistic differences, lagging AI awareness and application, and prominent constraining factors. The development process in Francophone Africa is clearly behind that in Anglophone Africa. AI development is in a stage characterised by "shallow awareness, weak application, lack of policy, yet clear demand". This requires the sector to fully recognise the transformative value of AI and strengthen the development of policy norms at the institutional level. Concurrently, teachers' explicit demand for guidance on AI application provides a clear direction for future development. Overall progress urgently requires increased investment from universities and national competent authorities to break through developmental constraints.

Based on studies, this report makes the following recommendations to higher education stakeholders, especially higher education management authorities and university administrators:

1.Introducing Global Frameworks: The UNESCO ICT Competency Framework for Teachers and the more recent AI Competency Framework for Teachers provide pathways and reference points for capacity building from a standards development perspective. The former covers competencies in multiple areas such as equipment operation and information literacy, while the latter emphasises that the development and application of AI should be human-centred, adhere to ethical principles, understand AI foundations and applications, integrate AI pedagogy and teacher professional development, etc., providing direction for teacher capacity building.

2.African Union Strategies and Recommendations: As a key hub for regional coordination and continental integration development in Africa, the African Union has recently released the Digital Education Strategy and Implementation Plan (2024)and the Continental Artificial Intelligence Strategy (2024). The former proposes three essential themes of AI in education: "learning with AI", "learning about AI", and "preparing for AI", along with six AI readiness areas. The latter emphasises formulating inclusive national AI education policies, cultivating AI competencies among teachers and students, investing in AI-related training, etc., while also mentioning key issues such as AI ethics and data security.

3.Ethical Application: According to the UNESCO Recommendation on the Ethics of Artificial Intelligence(2021), the African continent should adhere to the following necessary measures: (1) Promote AI ethics education; (2) Strengthen interdisciplinary research; (3) Cultivate responsible AI development capabilities; (4) Ensure inclusivity and lifelong learning. In short, the purpose of education and research is to teach people how to build AI responsibly and understand its societal impact. The goal should be to cultivate AI-literate, ethically aware global citizens and establish a research and innovation ecosystem that prioritises human well-being and fundamental rights.

4.Sustainable Investment: Respondents in this study believed that stable funding input environments are needed both in terms of infrastructure and the capacity of higher education workers to consistently enable higher education to keep pace with the constant changes of AI transformation. African universities should receive increased financial and technical support to benefit from digitalization and AI applications.

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