Title: Professional Development Strengthens Universal Design for Learning (UDL) and Educational Technology-Enabled Teaching Practices Among Arts and Humanities Teachers in Bhutanese Secondary School

Indicator: 3.7.1 # of outcome cases of education stakeholders reporting new knowledge and skills

Statement of change: The Connected Learning for Teacher Capacity Building in STEM (CL4STEM) was originally conceptualised within the context of STEM education and it supported the professional development (PD) of secondary Science and Mathematics teachers during the earlier two phases. However, during the Impact Scaling Phase, Samtse College of Education decided to extend PD support to secondary Arts and Humanities teachers too. This step was taken in response to concerns for such exclusion raised by Arts and Humanities teachers. Accordingly an Open Educational Resources (OER) module titled "*Transforming Pedagogy with Technology and the Universal Design for Learning Approach in STEAM Education*" was designed and offered to 33 secondary teachers from Science, Mathematics, Arts and Humanities backgrounds.The module was delivered through in-person workshop after which teachers were given six weeks to complete it in a practice-based model.Teachers were required to complete the module embedded activities and submit a lesson plan demonstrating an evidence of applying UDL and digital technologies. Their PD was further supported through a Telegram supported Community of Practice (CoP).

Arts and Humanities teachers, who previously relied mostly on lecture-based instruction and minimal use of digital platforms limited to PowerPoint, Google tools, and social media groups reported a shift towards applying learner centred pedagogy, interactive multimedia resources and AI tools to enhance instruction, engagement, and assessment. Teachers reported using a range of digital platforms and interactive educational technologies, including Edcafe, NotebookKLM, Slido, Canva, online quiz platforms, PhET simulations, GeoGebra, Desmos, and virtual labs. In addition, emerging AI tools such as ChatGPT, Gemini, and AI-enabled translation tools were increasingly integrated into classroom practices, particularly by Dzongkha language teachers. Teachers discovered with surprise that suddenly their classes were active with greater involvement from students. Teachers further reported that UDL principles helped them to vary content representation, enhance student engagement and in letting students express their learning through various options.

Significance of the change for KIX and its partners: This outcome is significant because earlier two phases of CL4STEM PD had prioritised only STEM teachers and limited capacity building opportunities for Arts and Humanities teachers. The evidence presented in the lesson

plans and reflection reports demonstrated a clear shift in Arts and Humanities teachers' knowledge, attitudes and practices (KAP) towards more learner centred and inclusive classrooms through UDL principles and digital technologies and AI tools especially in language and history classes. Importantly, this change also reflects improved equity in professional learning, as Arts and Humanities teachers gained access to skills and practices previously granted exclusively to STEM teachers.

Contribution of KIX to the change: One of the key objectives of the Ministry of Education and Skills Development (MoESD) is to provide equitable, inclusive and quality education to all students, and the PD on UDL and educational technologies for teachers supported this objective.

The project directly contributed to this outcome through:

- Capacity building of 16 STEM and 17 Arts and Humanities teachers to apply UDL principles and educational technologies to deliver equitable, inclusive and quality education.
- Arts and Humanities teachers were provided an opportunity to learn, practice and reflect while applying UDL principles and subject specific digital tools.
- Explicit introduction to UDL principles and their application across disciplines.
- Hands-on training in AI-enabled and interactive digital tools for representing content, engaging students actively and giving multiple opportunities for students to express their understanding.
- Establishment of cross-disciplinary collaboration, with Arts and Humanities teachers seeking guidance and mentorship from STEM colleagues to strengthen ICT integration and pedagogical practice.

GESI: Teacher participants included both male and female teachers. Arts and Humanities teachers who had been excluded in earlier phases of CL4STEM PD were included to ensure equity and inclusion.

Sources: Interview data, lesson plan and reflection reports of teachers.