Erasmus+ Programme (ERASMUS)

GOT
Building Capacity for Online Tuition in Ghana

Type of Action: Capacity Building in the field of Higher Education: Strand 2 - Partnerships for transformation in higher education.

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Roadmap document (Deliverable D2.4)

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Project consortium

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- Center of Excellence in Educational Innovation, Tallinn University (TLU), Estonia.

- Information and Communication Technology Education, University of Education, Winneba (UEW) Ghana.

- Mathematics and ICT Education, University of Cape Coast (UCC), Cape Coast, Ghana.

Notices

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Author, Beneficiary
- Tampere University (TAU)   -coordinator
- Tallinn University (TLU)-partner
- University of Education, Winneba (UEW)   -partner
- University of Cape Coast (UCC) - partner

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1. Project aims and objectives

The European Commission Erasmus+ Capacity building in the field of higher education project (GOT), main aim is to increase digital capacity at the Ghanaian University of Cape Coast and University of Education, Winneba. This will be attained by employing the knowledge and skills of Tampere University and Tallinn University in digital higher education teaching.

The transformation will take place by focusing on the issues determined by the Ghanaian universities during COVID-19 restrictions, which largely relate to technical competences of teaching staff and the acquisition of resources to aid in its implementation. This project hopes to address:

- inadequate teaching and learning facilities and equipment as well as e-resources.
- academic staffs' lacks competences in technology skills and knowledge for developing effective online courseware and facilitation of online teaching and learning for a large number of students.
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- dated institutional policies on ICT, Educational Technology (ET) and eLearning and their ineffective implementation.
- lack of policies and good practises for the conduct of online examinations and assessment
- lack of knowledge of effective practises and use of pedagogical approaches in digital education that would be learner-centred and facilitate smooth entry into labour market.
- lack of international collaboration in digital teaching that would facilitate modernisation in
- teaching, development of good practises, innovation, and creativity
- lack of a sustainable funding strategy that would develop quality digital education delivery.

To address these issues, UEW and UCC have agreed on collaboration with the TAU and TLU to build capacity in the field of digital delivery of higher education. Specifically, the collaboration will aim to do the following (assessment indices indicated in the brackets):

- enhance staffs' capacity to effectively facilitate digital learning, focus on

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practises next to theory of pedagogical integration of ICT (seminars and workshops).

- build faculty capacity to integrate instructional multimedia via use of Instructional Design principles and processes (reports of the training sessions on instructional design principles and processes)
- prepare materials of digital teaching and make them freely available to the instructors through the MOODLE Platform and otherwise, as well as social media resources/tools for staff and faculty (Conceptual and technical design of the knowledge management platform is presented in a report with the links added to the materials online)
- use the collaborative research outcome to inform the revision and implementation of the ICT policies for UEW and UCC. Develop instructional strategies that promote active, interactive, and collaborative teaching and learning (report of analysis of digital strategies and reflection of current state in Ghana, revised joint digital strategy for UCC and UEW, roadmap for implementing the strategy in UCC and UEW)
- use social media and web-based resources and tools to complement the use of digital learning management systems (pre- and post-assessment of the number of resources used by the academic staff).
- build faculty capacity and competencies in eLearning, Educational Technology (ET) and pedagogical integration of ICTs (Pre- and post-assessments of digital competencies, digital literacy and pedagogical integration in UCC and UEW)
- initiate long- term collaboration and linkages with Tampere University in the areas of digital education research (number of joint research initiatives published as conference talks and papers).
- Increase research visibility of UCC and UEW (joint research papers, conference talks and dissemination of the project in all channels mentioned in the dissemination section)
- share gained experiences with sister universities in Ghana and Africa (access provided to the knowledge platform, dissemination activities).
- establish a digital education methodology assistants unit at both Ghanaian universities to serve as a hub for long term development of digital education pedagogical methods in Ghana (report of the established unit)
- write new grant proposals jointly to continue practical and research-oriented co-operation on the quality development of the digital education delivery in Ghana (at least three jointly submitted proposals)

2. Activities

The project consists of nine work packages, which covers the following:

- WP1- Management of the project
- WP2 - Building strategies for digital education in Higher Education
- WP3 Building sustainable digital infrastructure and supporting utilization digital learning environments.
- WP4 - Implementing digital education strategy and putting digital education plan into action.
- WP5 - Development of the knowledge management platform to achieve leveraged digital competences.
- WP6 - Digital education policy towards inclusion and equal opportunities.
- WP7 -Mobility preparation and implementation
- WP8 - Coordination of dissemination activities
- WP9 - Managing exposure to risks in digital education.

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To get a holistic understanding of each work packages deliverables, milestones, and the relationship between them the following high-level roadmap document was created, which can be found below.

Figure 1: GOT Roadmap

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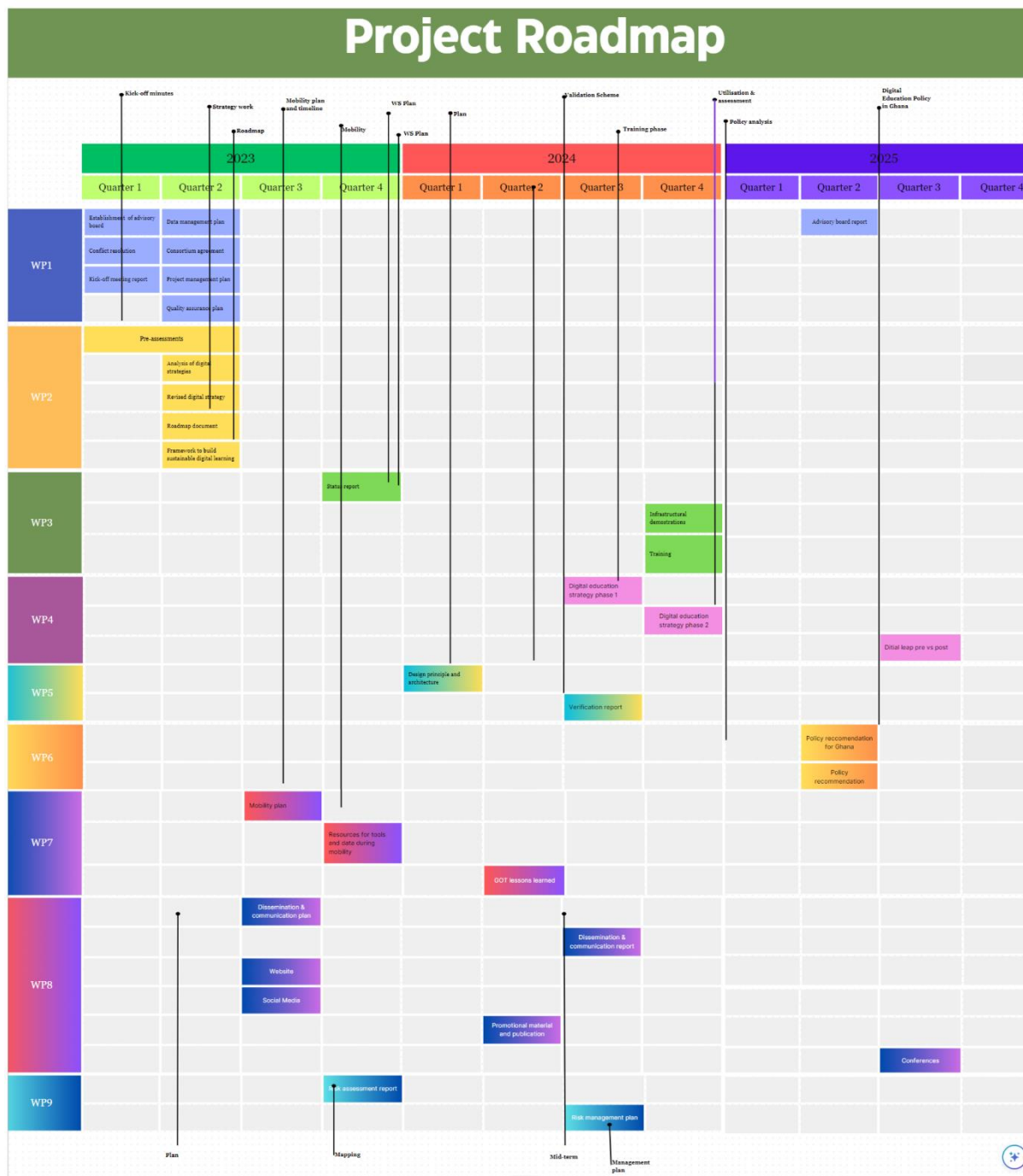
3. Feasibility of plan

To determine the feasibility of the project the project is guided by the D2.2 - Analysis of digital strategies and the D2.3 - Revised joint digital strategy for UCC. These documents utilised the current digital strategies at both at the University of Cape Coast and University of Education, Winneba and at governmental level in D2.1 - Pre-assessments. The Pre-assessment founded that "ICT competency is generally low" as is "the use of ICT for teaching". Tallinn University, in D2.2 provide strategic advice by drawing on Martin and Xie's (2022) ICT Policy Themes, policy implementation and evidence markers table, found in the table below:

Digital Strategy Policy themes	Implementation evidence markers	Description and Functions
Digital Learning Technologies	Learning Management System	The institutional environment for teaching and learning, a repository for teaching and learning resources; learning assessment, forum and communication.
	Synchronous technologies	Real-time teaching and learning; Synchronous applications with functionalities for audio, video, chat/text, sharing, breakout rooms and provision of interactive teaching and learning scenarios.
	Multimedia applications	For leaner engagements in audio, video and other interactive functions; creating content and sharing; using multi-media applications.
	Collaboratoin applications	A web or cloud-based application for word processing, presentations, and social interactions for peers and teachers.
	Cloud-based technologies	Virtual repositories for storage are accessible every and at any time. Usage is not limited to school computers or servers etc.
	Emerging technologies	Enabling innovation in teaching and learning – artificial intelligence (AI), extended reality (XR), Augmented Reality (AR), virtual reality (VR), and learning analytics for decision making
Instructional Modalities	On-campus techology-enhanced	Technology-enhanced teaching and learning modes conducted in person (face-to-face) in a defined learning space
	Hybrid/Blended Learning	Combines in-person and online, facilitated by digital tools and resources/infrastructure.
	Asynchronous online	Teaching and learning modes are characterised by no real-time meetings; teaching and learning activities and resources are stored for later access.
	Synchronous online	Real-time teaching and learning mode; instant interactivity and feedback available.
	Bichronous online	A combination of Asynchronous and Synchronous teaching and learning modes; with students joining from anywhere and operating in which mode is convenient.
	Hyflex	Enhanced flexibility in the choice of study mode; in-person and online learning spaces provided (like hybrid/blended) in the same classroom, but students select made with reference to their personal needs and day-to-day situations.
Personnel and Support services	Instructional designers	Support teachers for digital teaching and learning design
	Technology support specialist	Support teachers in addressing technical issues regarding digital teaching and learning
	Academic and student support services	Support for students to register, identify and access digital services
	Incentives and recognition	Appreciation and acknowledgement for faculties and individuals making strides in integrating technology; and digital teaching and learning pedagogical innovations.
Organisational and planning policies	Policies and standards	Defined digital teaching and learning standards as shared vision or procedures (teaching loads, assessment, course enrolment etc)
	Strategic Planning	Relating resources to targeted strategic actions; and providing the needed resources)
	Funding models	Explore sustainable funding avenues and models internally and externally.

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	Equitable learning opportunities	Provide resources to promote digital inclusion - accessibility, internet connectivity, software and hardware to support student usage
Instructor development	Pedagogical and technological skills	Provision for professional ICT pedagogical skills, training opportunities, and lifelong learning on technology integration in specialities.
	Faculty beleifs	Supporting the evolution of teacher beliefs in Digital teaching and learning
	Accessibility	Training faculty to prepare for inclusive digital teaching and learning practices, meeting the needs of learners with various impairments and disabilities.
	Intellectal property rights and copyrights	Training faculty to build competence in handling issues relating to intellectual property rights and copyright of their materials and that of others
Learner development	Computers and internet access	Accessibility to digital tools and resources put in place for learners. Access should be a principal consideration before digital teaching and learning pursuance
	Time management and self-regualtion	Digital teaching and learning come with flexibility and time managements skills for learners. Training learners to development time management skills and metacognition skills; for self-regulated learning.
	Instructional content and people	Student learning should occur in multi-learning fronts and sources, text, audio, video. After lecture podcast and discussions, engage in peer discussions or with teacher or other resource persons – all in flexible digital learning environments.
	Help	Withing digital environment help should be available (helpdesk)
	Community building	Conditions for students and instructors to instant help when needed. Digital tools and resources, and helpdesk provision are essential.
Partnership	Collaboration with other universities	Strengthen digital teaching and learning pursuits by collaborating with other institutions; pursue global collaboration.
	Collaboration with other professionals	Pursue support in professional organisations that are leaders in digital teaching and learning training. Institutional facilitation should be considered to support training, workshops, and access to resources.
	Collaboration with industry	Cooperate with industries to obtain support for the provision of digital tools and resources (e.g software and hardware), promote digital innovation in the University.

Tallinn University then went on to employ an analysis of both the University of Cape Coast and University of Education, Winneba's ICT policies. The analysis identified 20 themes, which need to be addressed which provided additional support to make strategic policy changes in changes which align well with Martin and Xie's (2002) ICT policy changes. These will be discussed in greater detail below:

Digital Learning Technologies

Digital transformation routes in digital technologies. Digital technologies play a crucial role in the learning process. Both UEW and UCC have substantial baseline actions and policies in place to ensure stable computing and authoring systems in place. The next step from these would be to ensure some commonly used digital learning and teaching technologies.

Learning Management systems

Both universities have incorporated the theme of LMS systems into their strategies and policies. Starting with managing the data and ending with the copyright and authoring of the content which is uploaded to the systems.

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Synchronous technologies, Multimedia applications, Collaborative applications, Cloud-based technologies, and Emerging technologies.

Both university have not addressed the previously listed technologies in their strategies. Both of the institutions leave this open: UEW lists a sequence of actions and regulations which have to be met before implementing any new technologies. Therefore, leaving it open. All the software that is planned to implement needs to comply with the existing systems. Both of the strategies also indicate that there is a need to monitor the list of hard- and software and policies regularly to update both. The use of emerging technologies such as AI use in learning and coursework should be addressed.

Instructional Modality

From the strategy and policy documents, it is not clear which modalities the universities plan to focus their teaching more or what is the current situation in teaching modality.

Six possible modalities are most commonly used: on-campus technology-enhanced, hybrid/blended, asynchronous online, synchronous online, bichronous online, and hyflex. Which modality to focus on should depend on the possibilities of the students and the university. The least digitalized modality is the on-campus technology-enhanced. And would suit when students are lacking personal devices. Hybrid/blended modality gives the possibility to add some parts of the course online. Asynchronous online modality leaves the opportunity for learners to choose when they do their learning tasks. This would be suitable when the students don't have equal access to the internet or have to work besides learning. Giving them the freedom to plan their learning based on their possibilities. Other modalities would demand possibilities to be involved online at a specific time. It is also important to note that these modalities need different digital and pedagogical competence from the teacher. Suitable training and support should be planned based on the focus.

Personnel and support service

Transforming teaching and learning into more digital would need investments to support services and personnel. Both universities have incorporated the baseline activities for training and maintaining the personnel for the ICT services. But there are no specific actions planned regarding the digital learning tools, training and support (the only exception is the LMS).

If there is a goal to develop online learning courses, then instructional designers could be helpful. They would help to plan and design effective courses for different modalities.

Academic support services - Students need to have access to resources and tools. Students also need to have support and training to be competent in digital learning. These are targeted in UEW and UCC policies under the LMS theme. It is unclear how it is organised or planned in the case of other learning environments and tools.

Recognition systems should be offered for employees who develop their digital teaching materials and skills. Regular monitoring of employees' digital competence should be planned to estimate the need for training and support. DigiCompEdu, OPEKA, etc. could be used.

In this analysis, we have also worked through Tallinn University Digital Learning Strategy which is especially focused on increasing the digital competence of employees and learners. This could be used as an example to develop the digital learning strategy for UEW and UCC.

Organizational Policies and Planning

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The ICT policies and strategies in both universities are very technology-driven and equipment based. The documents included a lot of policies about different technology use aspects. Often these activities and actions were more like a common set of rules and consequences rather than aims and goals for the future. Which are also important. Neither of the universities had addressed digital teaching in their policies. Therefore, we suggest also creating a policy and strategy for digital teaching and learning which would emphasize research-based decision-making. The policies should also be complemented with standards, like workload, enrolment, course evaluation etc. The universities would benefit from strategic planning on how to achieve set goals for digital teaching and learning. Also how to measure the effectiveness of the strategy and the budget for it.

Both universities had addressed the issue of equity and access. To ensure that students have access to hardware. This could also be widened to the access to the software and internet connection. Although it was not identified how these goals would be achieved specifically.

Instructor Development

The institutions should strategically plan the development of the digital competence of employees and students. There should be possibilities to develop their skills to integrate new content. These attempts could be met with reluctance. It is important to motivate the staff to develop their skills. The employees also need to be aware of intellectual property rights. The institution's policy could target these issues more as well. In the UEW strategy this topic was targeted, in UCC this topic was not addressed.

Learner development

For digital learning transformation to happen, it is important to make sure that students have the opportunities to learn in various modalities and that they have access to computers, and the internet. The digital learning's different modalities also demand different skills from the learners, for example, some modalities need students to be self-regulated learners who manage their time and learning. Also, students need to have different content formats to learn from (text, video, audio) but they also need to interact with each other. Therefore, it is suggested to incorporate the theme in the future strategy to develop the necessary skills for learners to cope with digital learning.

Partnerships

Collaboration with other universities, organizations and industries should also be addressed in the strategies. Collaborations could make digital learning stronger and up to date. The collaboration could be also on the level of research on digital education. The partnership was addressed in the UCC strategy but not with a focus on digital learning. UEW did not address this topic.

During this analysis also Ulster University ICT policy was analyzed. This document sets the main emphasis on the development of partnerships and cooperation with industry and alumni. Aiming to build a stronger community between academia and society, which would bring them more students. It could be beneficial to adapt some possible themes from the strategy to improve the partnerships part of the policies.

4. Next steps

The next step for the GOT project is to hand a detailed workshop where team members and PI reflect on the strategic goals to help create a map ensuring greater success of the project.

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