



UNIVERSITY OF NAIROBI

INTERNATIONAL INSTITUTE OF ONLINE EDUCATION-KENYA NATIONAL CENTRE (IIOE-KNC)

I. Background

The International Centre for Higher Education Innovation under the auspices of UNESCO (UNESCO-ICHEI) (Party A) and the IIOE Kenya National Centre (Party B), hosted at University of Nairobi (UoN), agreed to jointly launch the Project on *Transforming Online Pedagogy for Effective Curriculum Delivery in Higher Education Institutions in Kenya*. This partnership started in January 2019 and the rotating presidency came to UoN in 2022 with UoN VC appointed as the president.

This partnership was informed by the challenges experienced in providing quality education in Higher Education Institutions (HEIs). African countries have an impediment in providing quality, relevant and sustainable educational services. One of the notable problems in African Universities lies with justifying the relevance of their curricula to meet the local needs of the community while at the same time responding adequately to globalization challenges. While universities in the West and East are rapidly innovating to face these challenges, those in Africa are grappling with (a) massification of higher education at both undergraduate and postgraduate levels in higher education that has posed a challenge to effective delivery of quality education (b) limited resources and infrastructural deficiencies that tend to compromise the quality of teaching and learning and (c) the ever increasing teaching workload coupled with the demand that lecturers must conduct and publish research in quality journals in order to remain relevant in their career.

This ever increasing demand for higher education, service providers are challenged by the need to strike a balance to the cost and access to education without compromising the quality. It is a challenge to achieve the balance among cost, access and quality, using traditional pedagogical practices that emphasize on physical interaction. Transition to online digital transformative pedagogical practices was adopted to address this problem by enabling a large number of learners to access good quality education at an affordable cost.

In response to this need, the International Institute of Online Education, Kenya National Centre (IIOE-KNC) was launched on April 25, 2022. A pilot project implementation plan on Transforming Pedagogy in Higher Education Institutions in Kenya was launched on 30th September, 2022.

As part of the project, the University of Nairobi, in collaboration with UNESCO-ICHEI, organized and delivered training on digital transformative online pedagogy from the 21st November to 21st December 2022. The project undertook the

training of the university teaching staff covering fundamental concepts and immersed participants in practical application of a variety of toolsets, digital resources and strategies for course planning, design as well as creative facilitation and innovative assessment.

The objectives of the training were to :

1. Empower university lecturers on transformative online curriculum delivery
2. Monitor, evaluate, and improve online blended teaching and learning practice in higher education institutions in Kenya
3. Document adoption of digital transformative online tools by lecturers in enhancing quality education through accessible and affordable online platforms

II. Overall Performance

The IIOE-KNC project involved a training program on digital transformative pedagogy and had a vision of transforming teaching and learning practices to enhance the quality of programmes offered in HEIs across Africa. This project component involved the University of Nairobi, Umma University, Egerton University and Pwani University in Kenya. There were a total of Eighty Seven (87) participants out of which Sixty Two (62) completed all the sessions in the training which gives a completion rate of about 71%. The project trained the university lecturers in three main areas of pedagogy namely, Course Design, Course Facilitation and Innovative Assessment. The activities were both synchronous and asynchronous.

The implementation of the training was as follows:

The first week entailed Course Design training using asynchronous sessions over a period of seven days from 21st to 27th November 2022. This was followed by a 3-hour synchronous session on the 28th of November, 2022. This was a face-to-face online interaction between facilitators and participants via Zoom. During the synchronous session, the facilitators introduced Course Design theory in a 1- hour interactive session. This was followed by a 30-minutes session of group activity during which participants took part in reflective discussions on their own practice and the relevance of digital online transformative pedagogy to Course Design. After group work, a 30-minute plenary was held for each group to present their reports from the discussion breakout rooms. The synchronous session concluded with a 30-minute session for Question and Answer (Q & A) sessions where questions and concerns of the participants were taken into account.

In the second week, Course Facilitation training was conducted with Asynchronous learning taking place over a period of seven days from 29th to 5th of December, 2022. The participants were required to design a 7-minute session for micro-teaching during this period. This was followed by a 3-hour synchronous session on the 6th of December, 2022 via Zoom. The participants went into small groups to deliver a 7-minute session of micro-teaching. During micro-teaching, the group members were required to evaluate the quality of their colleague's session. At the end of the group work, a 30-minute plenary was convened where each group leader presented to the whole group a report on what was done well and what needed to be improved during

micro-teaching. This was followed by a 30-minute Question and Answer session where participants raised issues of concern and sought further clarifications on the training.

In the third week, asynchronous learning was undertaken for 6 days between 7th and 12th December, 2022. On the 13th of December, 2022, a 3-hour session for synchronous learning was held. During this session participants were introduced to rubric generation templates and other online innovative assessment methods such as Concept Maps, Concepts Tests and e-portfolio among others. This was followed by a 30 minutes of group activity. A 30-minute plenary session was conducted after group work with group leaders presenting their reports. This was followed by a 30 minute Question and Answer session. On the 14th December 2022, we had a synchronous session with a consultant who was to elucidate on the future of online teaching using various digital resources. The consultant highlighted the triangle of cost, access, and quality which online learning must consider to be effective and sustainable in the long run. This session was vital in illustrating the future for HEIs when they fully adopted digital transformative pedagogy.

Post training (Naivasha) Workshop

The DTP online resource persons and facilitators thereafter proceeded for a post DTP training workshop which took place in Naivasha, Kenya during the period 19th December 2022 through 23rd December to reflect on the training deliberations and to finalize documentation on the collection of best practices compiled by the resource persons. During the workshop, the process of further domestication of the DTP online training course through further development of the online courses was carried out. Two rubrics were developed for assessment in courses drawn from the departments of mathematics (assessment of student group project presentation) and computer science (programming exercise for a computer game). The tasks were carried out using group work to draw participation from expertise of the participants coming from various disciplines. The group tasks also involved presentation from the groups for refined inputs from the participants. Some of the presentation and group sessions may be found in <https://advancement.uonbi.ac.ke/latest-news/digital-transformative-pedagogy-dtp-facilitators-workshop> and appended (see annex 6).

III. Gender equality

The aim of the training was to offer the teaching staff awareness in their efforts to fight discrimination, respect equal opportunities and to apply gender sensitive teaching and learning activities in their curriculum delivery. The selection of participants and facilitators adhered to the gender equality requirements of at least $\frac{1}{3}$ gender rule. There were nineteen (19) female participants against twenty five (25) male participants. During group activities, it was mandatory to have gender equality with an equal opportunity to lead. In the facilitators section there were seven (7) female facilitators among the eighteen (18) facilitators.

IV. Describe and Measure Results

The performance in these areas was as follows:

Course Design: the objectives were to enable lecturers to use appropriate digital tools in designing courses and applying multimedia in a gender-sensitive and inclusive manner incorporating the constructive alignment principles. These objectives were successfully achieved.

Course Facilitation: the objective was to enable participants to learn how to plan and deliver courses both synchronously and asynchronously using online tools and technologies. The participants were able to prepare a 7-minute micro-teaching session and delivered it synchronously. They were also able to identify and use appropriate technologies and tools for asynchronous delivery.

Innovative assessment: the purpose was to enable the participants to identify tools for online assessment using 21st century skills both synchronously and asynchronously. The participants developed and used online assessment rubrics for 21st century skills that brought out a transformative paradigm shift. The participants were also able to generate e-portfolios which have monitoring, evaluation and learning outlook.

In order to monitor progress, the participants were given assignments to be undertaken asynchronously as they were monitored and supported by the facilitators through online interactive forums. The evidence of the process and products are found in the following links;

(a) Self-reports of participants:
<https://eskills.uonbi.ac.ke/mod/journal/report.php?id=327>

(b) Change of lesson plans to reflect transformative pedagogy:
<https://eskills.uonbi.ac.ke/mod/assign/view.php?id=274&action=grading>
<https://eskills.uonbi.ac.ke/mod/assign/view.php?id=126&action=grading>

(c) Group forum discussions:
<https://eskills.uonbi.ac.ke/mod/forum/view.php?id=305>

(d) E-portfolio: <https://eskills.uonbi.ac.ke/mod/assign/view.php?id=202>

V. Engagement and Management of Stakeholders

In 2019, "International Institute of Online Education" (IIOE) was jointly founded by UNESCO International Centre for Higher Education Innovation (UNESCO-ICHEI) with 11 partner HEIs in Africa and Asia, including University of Nairobi as one of the founding partner HEI. The training programmes and resources of IIOE have supported lecturers on how to enhance learning in higher education institutions through online digital transformative teaching. University of Nairobi became the IIOE Rotating Presidency Unit for 2022.

To better support the needs of lecturers at the national level of Kenya, the

International Institute of Online Education, Kenya National Centre (IIOE-KNC) was launched on April 25, 2022, and a pilot project implementation plan on Transforming Pedagogy in Higher Education Institutions in Kenya launched on 30th September, 2022.

The University of Nairobi, in collaboration with UNESCO-ICHEI organized and delivered a training on transformative online pedagogy. The course covered fundamental concepts and immersed participants in practical application of a variety of toolsets, digital resources and strategies for course planning, design as well as creative facilitation and innovative assessment.

To achieve this goal, the University of Nairobi created partnerships with three (3) universities namely; Umma, Egerton, and Pwani universities. The partners appointed participants from the Science, Technology, Engineering and Mathematics (STEM) Faculties and/or Departments for the training. The IIOE- appointed facilitators from the STEM Faculties, Faculty of Education and Department of Psychology who had been previously trained on Digital Transformative Pedagogy.

The delivery was both Synchronous and Asynchronous. The synchronous one was via zoom and the Asynchronous learning was through the Moodle Learning Management System.

The beneficiaries of the project are listed in **Annex one (1)**; communication to participants was through email (**Annex two (2)**) and the summary of their feedback on the project is listed in **Annex three (3)**.

VI. Impact and Sustainability

Kenya has identified "raising the quality of teaching mathematics, science and technology" as a foundation of its Vision 2030 development plan. Universities "will be encouraged to expand enrollment, with an emphasis on science and technology courses". With traditional teaching methods reaching their limits, the University of Nairobi is urgently seeking a solution to rapidly increase numbers on large STEM courses.

The Nairobi IIOE-KNC represents a wide demographic: over half of its beneficiaries are from low income households and the university embraces religious and cultural diversities. For Kenyan universities to provide high quality graduates to boost growth and address engineering problems, face climate change effects, redesign manufacturing, and rework sustainable food systems, data science solutions will be required in expanding digital pedagogy experts as an essential, and this project provides for evidence based a way forward. Following enthusiasm in the pilot implementation and measure of the effectiveness from the benefiting faculty, the importance of the training and partnerships cannot be overemphasized.

The training has a strong potential to be sustained because lecturers have a positive attitude and a will to continue training in digital transformative pedagogy. It can be upscaled to the whole of University of Nairobi beyond the STEM to Arts and Social sciences. The University of Nairobi Management and that of partner universities are supportive of online teaching. The Partnership between UNESCO ICHEI, IIOE,

IIOE-KNC and Partner Universities should be sustained and enhanced through implementation of the transformative digital pedagogy in the subsequent phase.

The results of the project can be institutionalized by implementing the results achieved to short courses first before scaling to full time courses. That way, the impact can be measured and will also aid in upgrading the existing digital infrastructure.

VII. Communication and Visibility

The project was communicated specifically through the IIOE website and through the IIOE-KNC email.

The communication and visibility was facilitation through the following links:

<https://eskills.uonbi.ac.ke/course/index.php?categoryid=5;>

<https://advancement.uonbi.ac.ke/latest-news/uon-launches-smart-classroom-iioe-kenya-national-centre>

<https://academics.uonbi.ac.ke/latest-news/launch-smart-classroom>

<https://ict.uonbi.ac.ke/latest-news/uon-smart-classroom-launched>

<https://www.facebook.com/uonbi.ac.ke/posts/10159102162422705/>

<https://advancement.uonbi.ac.ke/latest-news/uon-launches-smart-classroom-iioe-kenya-national-centre>

VIII. Lessons Learnt

The success of this project was made possible by a number of factors namely:

The University of Nairobi management and that of partner universities was supportive of the program. The Vice-Chancellor, University of Nairobi was hands-on in ensuring that the program runs smoothly from the beginning to the end. He was present during the opening and closing ceremony of the workshop.

The lecturers have embraced online pedagogy as a viable mode of facilitation. They were therefore eager to learn new skills for digital transformative pedagogy.

University of Nairobi and partner universities have invested in the ICT infrastructure which provided stable internet services to enable the facilitation of the training.

The training created a learning environment that was inclusive, gender sensitive and responsive and illustrated the practical ways of ensuring discrimination and marginalization is curbed. It also explicated the beauty of diversity and how digital transformative pedagogy can transform geo-locations to a 'global classroom'.

A number of challenges were encountered such as:

The program involved participants from various universities with varying timetable of activities hence some participants could not attend the interactive sessions fully because they had to break off to attend to other duties which were running parallel to the digital transformative pedagogy training schedule.

Since the training was online, some participants experienced internet connectivity challenges. Another challenge was inadequate proficiency in digital applications for online pedagogy. This meant that some participants had difficulty in completing the assignments on time since they first had to learn how to use the digital applications. In this regard, it would be important to budget for a special training on use of the basic ICT applications that will be used in the digital transformative pedagogy training.

Additionally, in order to smoothen the implementation of a similar project in future, it would also be resourceful to convene both participants and facilitators in the same location so as to avoid the inconvenience of clashing mainstream university schedules with those of the training program. This will also standardize the access to the internet so as to avoid the disruptions caused by poor connectivity resulting from participants working away from their university premises.

LIST OF ANNEXES

Annex 1

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Annex 2

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DIGITAL TRANSFORMATIVE PEDAGOGY TRAINING OPENING CEREMONY

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Tue, Nov 22, 2022 at 3:39 PM To: f.namasaka@pu.ac.ke, j.muthiani@pu.ac.ke, steamukune@gmail.com, f.keheze@pu.ac.ke, Nancy.abwalaba5@gmail.com, c.andisi@pu.ac.ke, fkeraro@egerton.ac.ke, jkngeno@egerton.ac.ke, eklelmen@egerton.ac.ke, ewambugu@egerton.ac.ke, mngigi@egerton.ac.ke, gichuki@egerton.ac.ke, caleb.orenge@egerton.ac.ke, grace.ndeke@egerton.ac.ke, Tabitha.amollo@egerton.ac.ke, wnyaora@egerton.ac.ke, s.ung'ai@pu.ac.ke, l.alii@pu.ac.ke, r.adenyah@pu.ac.ke, s.nyale@pu.ac.ke, b.wachira@pu.ac.ke, a.juma@pu.ac.ke, l.mwagandi@pu.ac.ke, v.gichuru@pu.ac.ke, r.damaris@pu.ac.ke, cmwasaa@gmail.com, awanja@umma.ac.ke, ndukuiga@gmail.com, ammohamed@umma.ac.ke, mmmbole@umma.ac.ke, rnangithia@umma.ac.ke, ckaluwa@uonbi.ac.ke, rojoo@uonbi.ac.ke, mkibegwa@uonbi.ac.ke, conura@uonbi.ac.ke, mahacla@uonbi.ac.ke, onyangopaulos25@gmail.com, joseph.nguta@uonbi.ac.ke, dsenerwa@uonbi.ac.ke, snmbindyo@uonbi.ac.ke, tadhola@uonbi.ac.ke, mutavi.teresia@uonbi.ac.ke, kefa.bosire@uonbi.ac.ke, mosmasika@uonbi.ac.ke, ekihara@uonbi.ac.ke, jaluvaala@uonbi.ac.ke, roseopiyo@uonbi.ac.ke, edwin.walong@uonbi.ac.ke, muthomi@uonbi.ac.ke, akuon@uonbi.ac.ke, jbiriri@uonbi.ac.ke, bndunge@uonbi.ac.ke, asala@uonbi.ac.ke, Hussein.jama@uonbi.ac.ke, rahma@uonbi.ac.ke, stemureithi@uonbi.ac.ke, akaruma@uonbi.ac.ke, jjcheboi@uonbi.ac.ke, kitonyi@uonbi.ac.ke, Caroline Muthike <cwakuthie@uonbi.ac.ke>, mulwa.dasel@uonbi.ac.ke, hillery@uonbi.ac.ke, lnkarega@uonbi.ac.ke, njogurachel@uonbi.ac.ke, musembirj@uonbi.ac.ke, vatunga@uonbi.ac.ke, janew@uonbi.ac.ke, dbundi@uonbi.ac.ke, selinao@uonbi.ac.ke, vwangondu@uonbi.ac.ke, laiboue@gmail.com, ettamadete@gmail.com, danieltoo2005@gmail.com, victormahinda@yahoo.com, mutongapeninah@uonbi.ac.ke, asya.abdulatif@gmail.com, abdillahizahra@gmail.com, pondasamantha@gmail.com, fridah.mugo@uonbi.ac.ke, beatrice.koech@uonbi.ac.ke, jakach@uonbi.ac.ke, charles.osengo@uonbi.ac.ke, bessyk@uonbi.ac.ke, daniel.gakunga@uonbi.ac.ke, ongaro@uonbi.ac.ke, raphael.nyonje@uonbi.ac.ke, linda.karea@uonbi.ac.ke, petronilla@uonbi.ac.ke, justus.inyega@uonbi.ac.ke, lukke7@gmail.com, janet.wanjira@uonbi.ac.ke, dnkaranja@uonbi.ac.ke, roboko@uonbi.ac.ke, betsy@uonbi.ac.ke, richard.onwonga@uonbi.ac.ke, cecilia.onyango@uonbi.ac.ke, jobiero@uonbi.ac.ke, bngaruiya@uonbi.ac.ke, ibrahim_khatete@uonbi.ac.ke

Dear Members,

This is to kindly invite you to the DTP Training Opening ceremony via zoom link on Wednesday November 23, 2022 at 9am . It will be graced by the University of Nairobi Vice Chancellor who is also the IIOE Rotating President, Prof. Stephen Kiama.

Kindly find

attached the

training

schedule and;

Below is the

zoom meeting

link and details:

Join Zoom Meeting
<https://us02web.zoom.us/j/83396997578?pwd=RVpXeFdZdGNTOEJhdm1vTXdzUjVidz09>

Meeting ID: 833 9699 7578

Passcode: 950506

Kind regards,
D.K. Wachira

for--

Prof. Justus O. Inyega, PhD (Sc. Ed.)

Assistant Director General

**International*

Institute of

Online

Education

(IIOE) &*

Director,

International Institute of Online Education-Kenya National Centre (IIOE-KNC)

under UNESCO-International Centre for Higher Education Innovation (UNESCO-ICHEI)



Revised - training and delivery schedule novemberdecember2022.pdf
1405K

Annex 3

1. Live Session 1

https://us02web.zoom.us/rec/share/uT0HjLaWm-xm1eC4AzIJM_fqTo2waRPci6wbdEmGGWEdlTtUekDMMPfX18B3HV-E.dWgtYN-Q0tTRO1R2

Passcode: 8M=R@e@%

2. Live Session 2

https://us02web.zoom.us/rec/share/hu-RxW8WudJaebcX-QsqWZwV4a2Hk2E7rEe-5iHRRl64B6DzyOau5W8PYKToxm5Lxj6WL94F90_Day6s

Passcode: J8*WWvz5

3. Live Session 3

https://us02web.zoom.us/rec/share/ZLf0DB5aDM9ZLoCG0mtRKJgaVVZZQzYSuCOocPd4ZDdfI4jivAFgALXFnYagt-Xy.eM_ROFe1lwCxI7mz

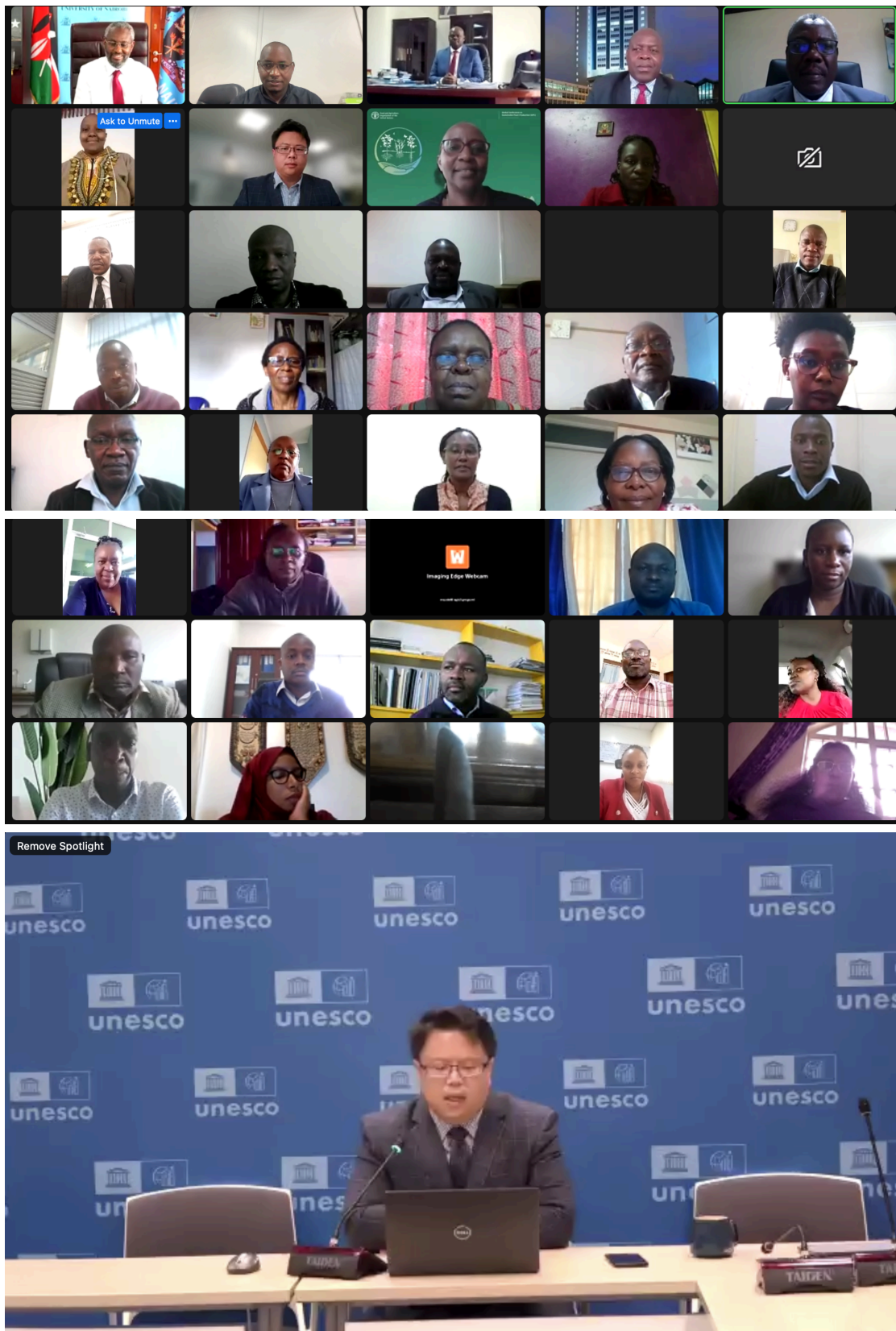
Passcode: 4v+1%eX9

4. Live Session 4

https://us02web.zoom.us/rec/share/h9ahMfxQ0JMpv_nyteOFm6wzlucncgdDpvPKraSeNKm_TmaVMbvBznX6gxfMlci.JJomNNQzf_mzkoeJ

Passcode: cr\$ru2kq

Annex 4: Launch of the Digital Transformative Pedagogy Project



ANNEX 5: TRAINING ROLLOUT AND DELIVERABLES



**ANNEX 6: DIGITAL TRANSFORMATIVE PEDAGOGY (DTP)
FACILITATORS WORKSHOP**

