



# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

Presented at the FIG Working Week 2024,  
19-24 May 2024 in Accra, Ghana

## Impact of COVID-19 on land administration and surveying education: online education, teaching innovations, challenges and future implications - experiences from eight universities Africa

**Monica LENGOIBONI, The Netherlands; Mireille BIRARO, Rwanda; Katcho KARUME, Democratic Republic of Congo; Agnes MWASUMBI, Tanzania; David SIRIBA, Kenya; Jossam POTEL, Rwanda; ACHAMYELEH Gashu Adam, Ethiopia; SANTA Jima Ali, South Sudan; Tatien MASHARABU, Burundi; Menare Royal MABAKENG, Namibia; Jaap ZEVENBERGEN, The Netherlands**

ORGANISED BY



PLATINUM SPONSORS



GEOSA  
General Authority for Surveying  
and Geospatial Information





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## Introduction

Both at graduate and undergraduate levels, education systems teach subjects covering legal and policy frameworks in:

- theory – usually using traditional/conventional teaching approaches.
- practical: technical teaching approaches and applications and lessons: typically, fieldwork and laboratory exercises, or engaging with various surveying instruments and equipment

In 2020, the Covid-19 pandemic disrupted the traditional teaching methods of both theory and practical subjects - prompting sudden shift to online education, globally.

The sudden shift has raised questions about the impact of online education on teaching both theory and practical during the lockdown period.

This paper provides experiences, insights into the benefits and challenges faced by both educators and students at different member universities of the Eastern Africa Land Administration Network (EALAN), or members of the ‘Network of Excellence on Land Governance in Africa’ (NELGA) as a response to the COVID-19 pandemic.

The paper highlights success, challenges, and suggests future directions that extend beyond the pandemic.

ORGANISED BY



PLATINUM SPONSORS







# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## Methodology: Qualitative Synthesis



**Data collection:** August and November 2023

**Respondents:** lecturers (representatives) from eight universities

### Questions

- 1) Platform used to ensure continuity of education during the pandemic;
- 2) Teacher preparedness for online teaching at the onset of the pandemic;
- 3) Student preparedness on the onset of the pandemic;
- 4) Student population and management of class sizes during online education;
- 5) Duration of the online teaching during the pandemic;
- 6) Positive elements brought by online teaching (for theory lessons);
- 7) Positive elements brought by online teaching (for practical lessons);
- 8) Challenges faced when implementing online education (for theory lessons);
- 9) Challenges faced when implementing online education (for practical lessons);
- 10) Innovations in teaching;
- 11) Innovations in learning as seen by students;
- 12) Future directions of online education beyond covid.

- Qualitative synthesis allows pooling findings of qualitative studies
- aggregating of a group of studies allows discovering the essential elements in the results



# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## Respondents

EALAN: Eastern Africa Land  
Administration Network

\* NELGA's East Africa Regional  
Node

\*\* NELGA's Southern Africa  
Regional Node

	University	Network
1	<i>Université Evangélique en Afrique</i> (UEA) from <b>Democratic Republic of Congo</b>	- EALAN - *EARN
2	University of Nairobi (UoN) from <b>Kenya</b>	- EALAN - *EARN
3	<i>Institut d'Enseignement Supérieur de Ruhengeri</i> (INES) from <b>Rwanda</b>	- EALAN - *EARN
4	Bahir Dar University (BDU) from <b>Ethiopia</b>	- EALAN - *EARN
5	University of Juba (UoJ) from <b>South Sudan</b>	- EALAN - *EARN
6	Ardi University (AU) from <b>Tanzania</b>	- EALAN - *EARN
7	University of Burundi (UB) from <b>Burundi</b>	- EALAN - *EARN
8	Namibia University of Science and Technology (NUST) from <b>Namibia</b>	- **SARN



# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

Years of teaching experience	UEA	UoN	INES	BDU	UoJ	AU	UB	NUST
1-5								X
6-10			X					
11-15					X			
16-20		X						
21-25				X			X	
26-30								
>30	X					X		

Most of the respondents have more than 20 years of teaching experience





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 1: Platforms used to ensure continuity of education during the lockdown

Platform	UEA	UoN	INES	BDU	UoJ	AU	UB	NUST
1. Zoom	X		X	X		X		
2. Moodle system		X	X					X
3. Microsoft Teams		X		X				X
4. Google Meet		X				X		
5. Google classroom		X						
6. Email	X							
7. Whatsapp groups	X							
8. Distance Learning					X			
9. Live teaching (no lockdown)							X	

Open-source platforms most used





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 2: Teacher preparedness for online teaching at the onset of the pandemic

Teacher preparedness across the six universities:

- Inadequate or lack of ICT divides, or appropriate devices by teachers and by a large proportion of students.
  - More challenging with large classes as such devices were limited inside and outside the university;
- Lack of and exposure, experience or and skills about online education/teaching.
  - Challenges with effectiveness: learning the technology and delivery of education simultaneously affected effectiveness of delivery and time management.
    - However, all responding universities report support by administration to provide training sessions for staff.
    - In the case of DRC, the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) and other networks played a crucial role in facilitating knowledge sharing and collaboration among educators, allowing them to learn from each other's experiences and best practices.
    - UoN for example put up eLearning platforms for both teachers and students.
- Limited access to stable internet connections; or limited access to the internet when outside the university;
- Absence of regulations to guide online teaching and learning.

ORGANISED BY



PLATINUM SPONSORS





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 3: Student preparedness on the onset of the pandemic

Students also were hindered to effectively participate in virtual classrooms and associated activities

### i) Access to ICT devices:

- Majority of students lacked the necessary digital literacy skills, leading to frustration and disengagement.
- Digital divide – it was observed that students in the urban areas had better chances of access to technology than those in the rural areas.
- Many students, particularly those in rural areas, faced barriers to accessing digital technology such as computers and smartphones.
- High costs associated with digital devices.

### ii) Unreliable internet:

- Unreliable internet connections interfere with both lesson delivery or content access → led to delays in submissions of assessments.

### iii) Electricity challenges;

### iv) Financially burdensome: costs associated with purchase of internet data

### v) Lack of in-person interactions: The absence of in-person interactions and collaborative learning experiences negatively impacted the overall educational experience

For inclusiveness, (because of internet connectivity challenges for both the lectures and the students) - teaching largely continued in hybrid format/live streaming as **coping strategy**

ORGANISED BY



PLATINUM SPONSORS



GEOSA  
General Authority for Surveying  
and Geospatial Information







# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 4. Student population and management of class sizes during online education

Average 100 to over 200 students

- BSc: as in the case of UoN, INES, AU, and the UB.

Average 30 students

- MSc: as in the case of NUST and TLU.

PhD: Not indicated

- programs exist at AU and BDU

Virtual classrooms handles large class sizes fine.

In the case of BDU, online teaching and supervision services received wide acceptance by the PhD students, which has maintained post the Covid 19 pandemic.



# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 5: Duration of the online education during the pandemic

Duration of the lockdown vary across the participating institutions.

- no lockdown in Burundi,
- one-month lockdown by the UEA in DRC,
- a semester at AU.

Regardless of the lockdown length, the experiences of online teaching prompted a reflection on the role of online education and how to ensure equitable access and quality in a digital learning environment as in the case of the UoN and UEA

ORGANISED BY



PLATINUM SPONSORS





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 6: Positive elements brought by online teaching: theory lessons

- Teaching and learning
  - Acceptance and adoption of ICT technology - as alternative to the conventional face-to-face classes and meetings
  - Exposure to diverse learning resources applications, platforms and educational resources that support distance or online education.
  - Resource portal – recording of live lectures provided digital resource portal for study materials
  - Flexibility – resource portal for lectures and other learning materials enabled a self paced learning by students, at their own time
  - Ease of sharing learning materials for both teachers and students
- Tracking student attendance
  - Recording of attendance, easier to track the level of class attendance
  - Tracking progress on assignments completion
- Reduction in travels and related costs
  - Instructors can attend virtual meetings and training beyond their local universities i.e. educational seminars across the country or abroad have been reduced.
  - Limitations experienced en route to work e.g. time wasted on traffic jams was alleviated.

Positive elements are mainly new insights and skills, which have the potential to shape the future of education at the universities.

ORGANISED BY



PLATINUM SPONSORS







# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 7: Positive elements brought by online teaching: practical lessons

Majority of institutions:

Suspended practical educational sessions till traditional teaching resumed.

Refer students to already existing online learning materials or videos for practical demonstration (case of UoN), and practical sessions planned when convenient.

ORGANISED BY



PLATINUM SPONSORS





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 8 & 9: Challenges faced when implementing online education: theory & practical lessons

### Theory lessons

- Poor and/or absence of internet connection, electricity mainly in rural area;
- Reduced engagement;
- Lower focus and motivation from the students leading to decreased learning outcomes;
- Competition for the use of electronic devices in some households as multiple family members may have used these devices for work or education simultaneously;
- Poor performance in education:
  - online teaching reduced the opportunity peer learning in exclusively classes (cheating and use of AI like chatGPT for exams and assignments).
  - isolation of students - negatively impacted students' emotional well-being and their ability to collaborate effectively;
  - struggling to self-discipline themselves and effectively manage their studies, leading to lag and minimal performance

### Practical lessons

- suspended

ORGANISED BY



PLATINUM SPONSORS





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 10: Innovations in teaching

Platform	UEA	UoN	INES	BDU	UoJ	AU	UB	NUST
Webinars	X							
Turnitin		X						
Mobile phone (calls & sms)				X				
Email				X				
Social media (Telegram & Facebook)				X				
Blended teaching and learning						X		X
Open exam					X			

UEA: students found webinars most helpful for to receive feedback.

UoJ: adopted open exams- taken home by the students and submitted the next day.

AU initiated the development of curricula for blended learning for 13 MSc programs

UB: even without a lockdown, ICT and virtual classes were adopted for PhD students from foreign countries; or with visiting professors.

ORGANISED BY



PLATINUM SPONSORS







# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 11: Innovations in learning as seen by students

Some courses currently entirely virtual

Supervision of students mostly of fully online

ORGANISED BY



PLATINUM SPONSORS





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## 12: Future directions of online education beyond COVID

### Blended learning

- foresee a future for online education that combines the best aspects of digital learning with the strengths of traditional education. For example blended learning to enhance flexibility and access to education, regardless of the location, and time.
- Innovative pedagogical methods that combine online and in-person experiences to improve learning outcomes.

### Entirely virtual education at universities

- Kenya has opened a fully online university after the pandemic. → there is a realization that it is possible to have online credentials.
- At NUST, a course (MSc) currently entirely online – post the pandemic.

Investing in online assessment tools: needed for quality assurance in assessments and evaluations.

ORGANISED BY



PLATINUM SPONSORS



GEOSA  
General Authority for Survey  
and Geospatial Information





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## Conclusion

This study raise questions about the applicability of online teaching/learning as its access could be limited to those who can afford the associated cost.

The Eastern Africa universities to go fully digital may require a lot of investments and lecturers' preparedness with online education. This would have implication on the SDG 4 on quality education.

Universities' role is to prepare competent professionals to work in government agencies, land management organizations, surveying and mapping firms, consulting firms, and other land administration related sectors. With the difficulties that both students and teachers some faced during the pandemic, Universities will need to invest in how best to implement virtual teaching and learning for especially the practical part of land administration and management education.

ORGANISED BY



PLATINUM SPONSORS







# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

*Impact of COVID-19 on land administration and surveying education: online education, teaching innovations, challenges and future implications - experiences from eight universities Africa*

*Thank you for your attention.*

ORGANISED BY



PLATINUM SPONSORS





# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

## SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

# Commission #

Commission's name

---

Serving Society for the Benefit of People and Planet



ORGANISED BY



PLATINUM SPONSORS

