TRANSFORMING EDUCATION TROUGH INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) AND PROBLEM- AND PROJECT BASED LEARNING (PBL)
- EXPERIENCES FROM THE BUILDING STRONGER UNIVERSITIES PROGRAMME (BSU III) WITH GULU UNIVERSITY, UGANDA.

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DDRN PUBLIC SEMINAR:
SOUTH-NORTH RESEARCH COOPERATION AT AALBORG UNIVERSITY COPENHAGEN
THURSDAY 23 MAY 2019, 15.00-18.00
VENUE: AALBORG UNIVERSITY (AAU) COPENHAGEN, A.C. MEYERS VÆNGE 15, 2450 KØBENHAVN SV.

Transforming education trough information and communication technology (ICT) and problem- and project based learning (PBL).
- Experiences from The Building Stronger Universities Programme (BSU III) with Gulu University, Uganda.

- The research problem
  - Why and how to transform higher education
  - ICT & PBL as springboards
- Setting the context
  - BSU III – building research capapcity
  - Gulu University, Northern Uganda
  - Related literature
- Participatory methods for changes
  - Future workshops
  - PD-design workshops
- Preliminary findings

Significance

- In the East African region, Higher Education (HE) is regarded as a symbol of regional and national development[1] and a key for modernization and personal and professional development[2]; see also [3].
- However, universities face challenges regarding quality, resources, teaching and learning traditions, attitudes and the use of ICT.
- In Uganda, nearly 25% of undergraduates are unemployed or underemployed, a rate that is even worse for female graduates, at 11% more than males [4].

Transforming Education

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The aim and problem formulation

The aim:

to develop new knowledge in the scientific field of educational research on transforming HE in a resource-constrained setting with a focus on the necessary shift from teacher-centred to student-centred learning.

- *How can historical and current practices within the field of ICT for learning in an East African Context facilitate blended learning, Problem-Based Learning (PBL) and mobile learning, and through participatory methods expand education?*

- *A case study approach (Gulu University)*

SETTING THE CONTEXT

Building Stronger Universities: 2011 - 2021

Phase III: 2017 – 2021

- Kwame Nkrumah University of Science and Technology (Kumasi, Ghana) [Project doc],

- University of Ghana (Accra, Ghana) [Project doc],

- Gulu University (Gulu, Uganda) [Project doc],

- Kilimanjaro Christian Medical University College (Moshi, Tanzania) [Project doc]

- Sokoine University of Agriculture (Morogoro, Tanzania) [Project doc]

- State University of Zanzibar (Zanzibar, Tanzania) [Project doc]

BSU III – Objectives, outcomes and outputs
Gulu University

- ***Development objective:*** Significant social problems in northern Uganda are addressed through uptake of collaborative research that generates knowledge relevant for community transformation, as well as research-based teaching and learning (PBL and e-learning) that prepares graduates for working with such problems by 2021. More PhDs and Master students within the thematic areas graduate and more graduates get employed.

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- ***Immediate objective:*** Academic staff undertake selected collaborative/action research projects with local economic and social actors and engage students in problem-based learning together with those actors by 2019

- **Outcome Area 1: Administrative Capacity**
- **Outcome Area 2: Research and outreach capacity at system and organizational level**
- **Outcome 3: Research and outreach capacity at the level of individuals**

Building Stronger University III – Gulu University

GU established in 2002/3   Motto: For Community Transformation

Background and overall frame

- The need for community transformation and participatory approach to community solving community problems has become an important strategy for enhanced employability through institutional capacity building.

- Gulu is the only project dealing with Institutional capacity building in relation to humanities and social sciences.

- The two thematic areas the partnership are: Transforming Education; and Right, resources and gender forms the basis of partnership in the project.

- Action research and partnership is a fundamental need to show relevance of University to the community in the resource constrained setting including identification and building internet band width and electronic resources.

  - Ms. Awacorach Judith

Partnership at Gulu University

- Partnership at Gulu University are drawn from the Faculty of Education and Humanities, Institute of Peace and Strategic Studies, Faculty of Business and Development Studies, and Institute of Research and Graduate Studies.

- The Danish partners include researchers from four Danish Universities: University of Copenhagen; University of Southern Denmark; Roskilde University; and Aalborg University.

- Of the two Thematic areas: rights, resources and gender draw support from University of Copenhagen, University of Southern Denmark and Roskilde University.

- Problem Based Learning, E- learning, blended learning and ICT are supported by Aalborg University.

  - Ms. Awacorach Judith

Related literature - PBL

- PBL is a student-centred approach bringing theory and practice together to deal with <u>real-world problems</u> [5],[14]. This makes PBL promising to adopt in a <u>resource-constrained setting,</u> as the students' projects provide input to <u>solve and develop alternative</u> and critical responses to development matters [15],[16].

- Ugandans are viewed as some of the most <u>entrepreneurial</u> in the world [17]. Still, the impact of entrepreneurial education has been questioned [18-21],[8-9]. In this project <u>entrepreneurial thinking</u> is promoted through the PBL approach dealing with real-world cases with a perspective of turning them into small scale business opportunities.

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Related literature – ICT and learning

- Related research within East Africa on the status and challenges of ICT confirms that elearning and blended learning promote multiple positive effects, though some of them still are waiting to be implemented in a resource-constrained setting [22].

- Challenges staff and student attitude are reported in leading Ugandan universities in elearning adoption [26],[27]. Similarly, a Tanzanian research finding indicates challenges to sufficient capacity in terms of human resources, infrastructure and technology use [28]–[30].

- Although elearning and ICT still face challenges, a study with farmers in Kenya reports on success with elearning due to the use of participatory methods[31].

No quick fix:

It is evident that elearning promotes flexibility of time, space and enrolment[32] and compensates for scarcities of resources in traditional settings while providing inexpensive distribution channels [24],[33], however research also shows that teachers, students and managers should become actively involved in ICT.

Participatory methods for change

Future Workshop (FW)	Understand the social and historical perspectives. Underscore the need of change and future activities	Participation in understanding the past and present and shaping future work through democratic means	Teachers, administrators and ICT support staff
Design Workshop	Engage with stakeholders in a co-Design workshop environment to define and design for future interventions Determine some design principles Produce a prototype	Co-Design activities based on the needs identified by FW, Prototyping with the users and evaluating these prototypes against requirements	Teachers, administrators and ICT staff
Focused Group Interviews	Revisit design principles against prototypes New iterations	Evaluation of the running prototypes, revisiting the challenges, design issues, new requirements and technologies Revisiting the adoption of sociocultural and sociotechnical perspectives in the design	Purposively sampled administrators, ICT support and User communities.

(Tabo, forthcoming)

Immediate lessons learned – in BSU III

- PBL is a resource for working with communities and social actors (business, government, NGOs and civil society)
- Skills in problem formulation and innovative solutions
- "learning to learn" and to go beyond rote learning.
- Combining theory and practice
- Collaborative way of working
- More approvals of thesis proposals
- ICT literacy and digital Scholarship (to come)

Gulu, MBA 2016

Awacorach, Olanya, Tabo, Zakaria, Jensen & Lassen (2018).

Lessons learned - BSU

- Transformation takes time
  - Small steps method
- "There are limitations in the IT infrastructure for assess and communication. For infrastructures being transparent, it's design is an iterative process that never ends as long as users needs are not stable". (Tabo, forthcoming)
- Buttom-up processes through participatory design are a prerequisite for sustainable change
- Reifications: in policy documents, managers' strategies and material infrastructure – ICT, PBL lab, etc….
- Partnerships must build on longterm, mutual and genuine communication & collaboration

BSU III – GU: a comprehensive and entangled innovation and transformation of education concept:

Expansive learning:

- Cultural
- Social
- Economic
- Environmental
- Technological

Photo: Lone Dirckinck-Holmfeld

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