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INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

ENVISION 2030

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CENTRE FOR EXCELLENCE IN LEARNING & TEACHING

PROJECT HAMBISA

HAMBISA Team and Working Group

TEACHER EDUCATION BED PROGRAMME: NATURAL SCIENCES-STEM

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FACULTY OF ARTS & DESIGN

Key highlights for Hambisa Pilot: B.Ed SP + FET: Natural Sciences

Performance Data: 2018 to 2022 - > benchmarks

- **92%** Pass rates
- **69%** Throughput rates
- **15%** Dropout rates
- **2.0** SEQ Analysis
- **1.7** LEQ Analysis
- **28** Students in 'middle' from **2020**

HOD & Staff Engagement:

Key findings were relayed

- Curriculum issues
- Assessment issues
- Very high workloads- 1 lecturer for majors across all levels-3 modules per semester
- Lack of ongoing PD

Literature Review identified challenges & HIPs:

- Teaching practice-WIL
- Maths anxiety
- Language issues/Oral Proficiency
- Insufficient pedagogical content knowledge (PCK)
- Teacher identity

Student Engagement:

- Student Feedback
- Maths module - contact mode
- Language barriers
- Theory-practice gap
- Communication
- Online learning challenges

Interventions in place:

- Students supported through SSDU programmes – REP, AA, FYSE, Tutorials, etc.

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LITERATURE REVIEW

Teaching practice-WIL challenges	Improve teachers' pedagogic reasoning. *(*Rusznyak & Bertram, 2021). Improve the professional skills of preservice teachers; enhanced the inspiration and confidence; supported their life and career goals and preparation. (Bamrungsin & Khampirat, 2022). Innovative and inclusive Natural Science lessons are inseparably associated with the collaborative practices in lesson planning and preparation- lesson study-(Botes, Moreeng & Mosia, 2020). WIL is expected to be an organized programme-tough seems fragmented-ineffective in assisting student-teachers, and this was evident from the student-teacher's inability to cope with teaching tasks.
Language issues/Oral Proficiency	Poor academic achievement was leveled in LoLT. Students had difficulties with "grammar, words pronunciation, expression, comprehension of module contents, and interferences of first language when using English second language for teaching and learning purposes". (Mutepe, Makananise & Madima, 2021).

Key highlights for Hambisa Pilot: B.Ed SP + FET: Natural Sciences

Curriculum Analysis & Revision:

- ✓ Careful review/analysis of the pilot (including other 3 specialisations) resulted in significant changes in the curriculum structure, content, etc. - Senate approved in 2022
  - feedback from staff and students during implementation
  - other key stakeholders in the schooling sector- Advisory Board & DBE
- ✓ The changes address the depth and breadth in disciplinary knowledge as well as in pedagogical content knowledge necessary to attain the learning outcomes and to develop the competences expected of educators. Changes included:
  - **Curriculum structure** - **credit redistribution and re-sequencing** of modules to promote learning that ensures the acquisition, integration, and application of knowledge for teaching purposes, at the correct levels
  - **Removed duplication** of the Learning Outcomes (LOs) through the removal of three GenEd modules from the old Academic Structure
  - **Development of a new research project module** as a capstone module in the 4th year, with the Education suite of modules.
  - **Increased duration for teaching practice (WIL)**

Key highlights for Hambisa Pilot: B.Ed SP + FET: Natural Sciences

Student Focus Group Interviews:

Completed in Q4 of 2022.

N = 60 transcriptions are ready for analysis

1st yrs - 22 2nd yrs - 23

3rd yrs - 15 4th yrs - April 2023

Prelim analysis:

- Mental health issues among students
- Residence issues – unstable WiFi, violence, crime, safety, student transport challenges
- Slow/unstable Power and WiFi on campus
- Learning materials to suit all learning styles
- Study Guide alignment
- Registration issues
- Over-assessing/assessment overload
- Assessment matrix
- Require extra classes/quizzes/more tutors
- Teaching practice/WIL
- Spiritual support – 'access to church'
- Recreational support – sports, …..

Student Survey Data:

Completed in Q4 of 2022

N = 134 (out of total of ±400)

1st yrs - 71 2nd yrs - 15

3rd yrs - 36 4th yrs - 12

Prelim analysis:

- >50% are school leavers
- 50% - Male to female ratio
- 60% are 1st gen university students
- 50% - 1st choice
- >95% live in residence
- 32 students (25%) disagreed that self-study was important for success (n=17 neutral)

Key highlights for Hambisa Pilot: B.Ed SP + FET: Natural Sciences

Implementation HIPs/Innovative/ Transformative Practices:

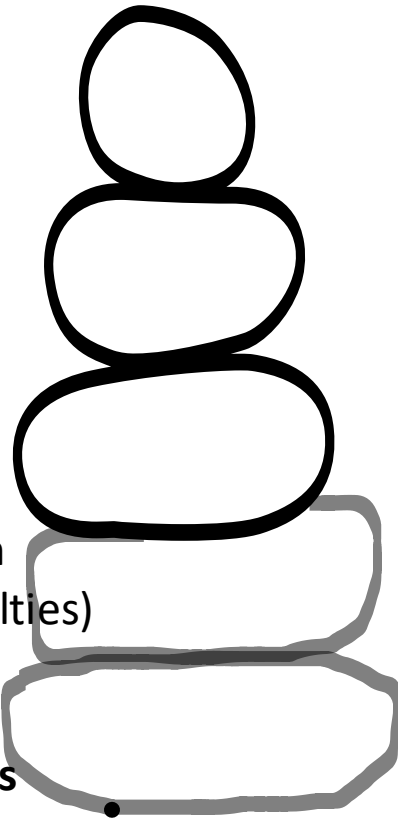
This will be refined post FGDs with staff and students in the 'middle'

- Strategies for addressing the theory-practice gap – PCK, Subject Didactics
- Language & Literacies challenges – both for LOLT as students but also as pre-service teachers
- Maths education needs additional support – tutorials?
- Reflective Practice strategies

Key highlights for Hambisa Pilot: B.Ed SP + FET: Natural Sciences

2023 Big Rocks/priorities

1. **Complete remaining Staff & Student FGDs – April 2023**
2. **DATA ANALYSIS – ongoing (but a retreat off-campus would be good)**
3. **STAFF DEVELOPMENT WORKSHOPS:**
   i. **Transformative assessment practices**
   ii. **Embedding reflective practice in the curriculum & understanding reflexivity as practitioners**
4. **WEBINAR with international partners (Nepal, Indonesia & Mozambique):** Innovative & transformative practices in STEAM education using Design Thinking and/or PBL. (to include FAS & other interested faculties)
5. **STUDENT DEVELOPMENT WORKSHOPS:**
   i. **Design thinking workshops for solutions to the identified challenges**
   ii. **Rollout of SSDU programmes (prescriptive) – emphasis on AA & REP**
   iii. **Developmental support for students stuck in the middle**



- Student Voices

The biggest challenge is that the teaching method or approach is still similar to high school as teachers.

Language barrier caused contradictions when I want to reflect on my learning experiences- during lectures and when writing assignments and tests.

Shift assessment to class presentations, as this will help us develop our teaching skills.

Too much work, overload, presentation quiz, test.

Accommodation, Wi-Fi, Busses challenges.

Require WIL stipend to buy formal clothes for teaching practice.

We must have extra time with our tutor, because the tutor explains my course content well.

Shortage of busses resulted with bus overcrowding.

Electricity problems in residence rooms makes learning difficult, particularly when preparing for test and exams.

Key highlights for Hambisa Pilot: B.Ed SP + FET: Natural Sciences

2023 Big Rocks/priorities

Planned outputs	✓ 1 x Poster for DUT Data Day ✓ 1 x 'Occasional' Paper to share best practice/s - LT Imbizo & other internal forums ✓ 1 x Journal article (at least but could be a few more in 2024)

References

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THANK
YOU
NGIYABONGA
धन्यवाद Dhan'yavāda