# RESTRUCTURING EDUCATIONAL ASSESSMENT PRACTICES IN UGANDAN SECONDARY SCHOOLS: BRIDGING THE GAP BETWEEN 21ST CENTURY SKILLS, CURRICULUM OBJECTIVES AND CLASSROOM EXPERIENCES

BY

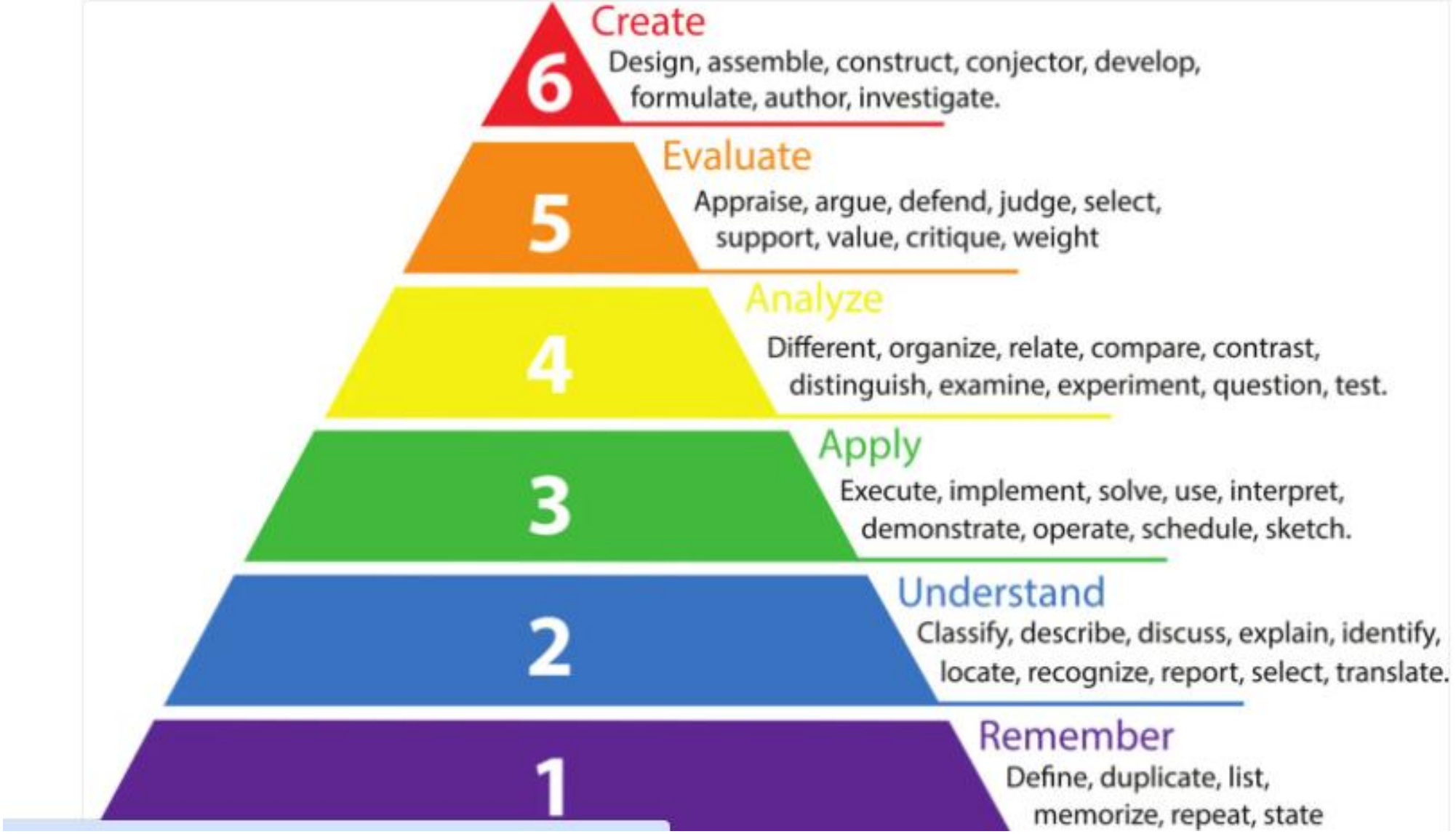
FABIOUS KARLS AMBAMA

# PRESENTATION OUT LINE

OVERVIEW OF THE STUDY/BRIEF BACKGROUND

- STATEMENT OF THE PROBLEM
- PURPOSE OF THE STUDY
- OBJECTIVES OF THE STUDY
- SIGNIFICANCE
- METHODLOGY
- FINDINGS
- RECOMMENDATIONS

# Theoretical Framework: Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001)




- The Bloom's revised taxonomy emphasizes 6 cognitive levels

# STATEMENT OF THE PROBLEM

- Uganda rolled out the Lower Secondary School CBC in 2020 with emphasis on 21st-century competences. In this process teachers were trained in both classroom practices and assessment in order to adapt to the new curriculum &its Assessment
- However, (Matovu & Lubega, 2021) reported that Teachers faced challenges in designing tasks that assess critical thinking, creativity, and collaboration
- There is limited evidence on whether the assessments conducted in schools measured 21st-century competences effectively.
- It was on this bases that this evaluation study was designed. Without this study it would be difficult to know whether learners attained the essential 21st-century skills they need to survive in the 21st Century world.

**Purpose:** To examine the effectiveness of CBC assessments in measuring 21st-century competences in Ugandan Secondary Schools with the aim to generate evidence to inform policy and improve assessment systems.

## Objectives

1.Analyze how teacher factors affect assessment of 21st-century competences

2. Evaluate the extent to which current assessments measure 21st-century competences.

3. Compare how 2024 UNEB and mock exams assessed 21st-century skills

4. Examine how institutional challenges affect the assessment of 21st Century competences

# RESEARCH QUESTIONS

1. How do teacher-related factors such as teaching experience, workload, awareness of 21st-century skills, and assessment practices influence the assessment of 21st-century skills in Ugandan secondary schools?
2. To what extent do assessments in Ugandan secondary schools measure the attainment of 21st-century competencies?
3. How does the assessment of 21st-century skills by UNEB compare with that of regional mock examination bodies in Uganda?
4. To what extent do institutional challenges affect the assessment of 21st-century skills in Ugandan secondary schools ?



**Null Hypotheses**

**There is no statistically significant difference in the assessment of 21st-century skills between UNEB examinations and regional mock examinations across different regions in Uganda**

## SIGNIFICANCE OF THE STUDY

- This study is significant because it will provide UNEB, NCDC, and the Ministry of Education with empirical insights into gaps in assessment practices and evidence-based recommendations for aligning examinations with 21st-century competencies.
- It will also benefit teachers, learners, and researchers by promoting innovative assessment strategies, improving learning outcomes, and contributing to academic literature on competency-based assessment in Uganda

# SCOPE OF THE STUDY

**Content Scope:**

The study examined the effectiveness of assessments in Ugandan secondary schools in measuring 21st-century skills. It evaluated UNEB and regional mock examinations, reviewed 2024 UCE papers in Biology, Chemistry, Physics, Mathematics, History, Geography, and Christian Religious Education, and explored teacher-related and institutional challenges affecting assessment practices.

**Geographical Scope:**

The study covered secondary schools across Uganda, with participants (item writers) drawn from all 17 sub-regions to ensure national representation of assessment practices.

**Time Scope:**

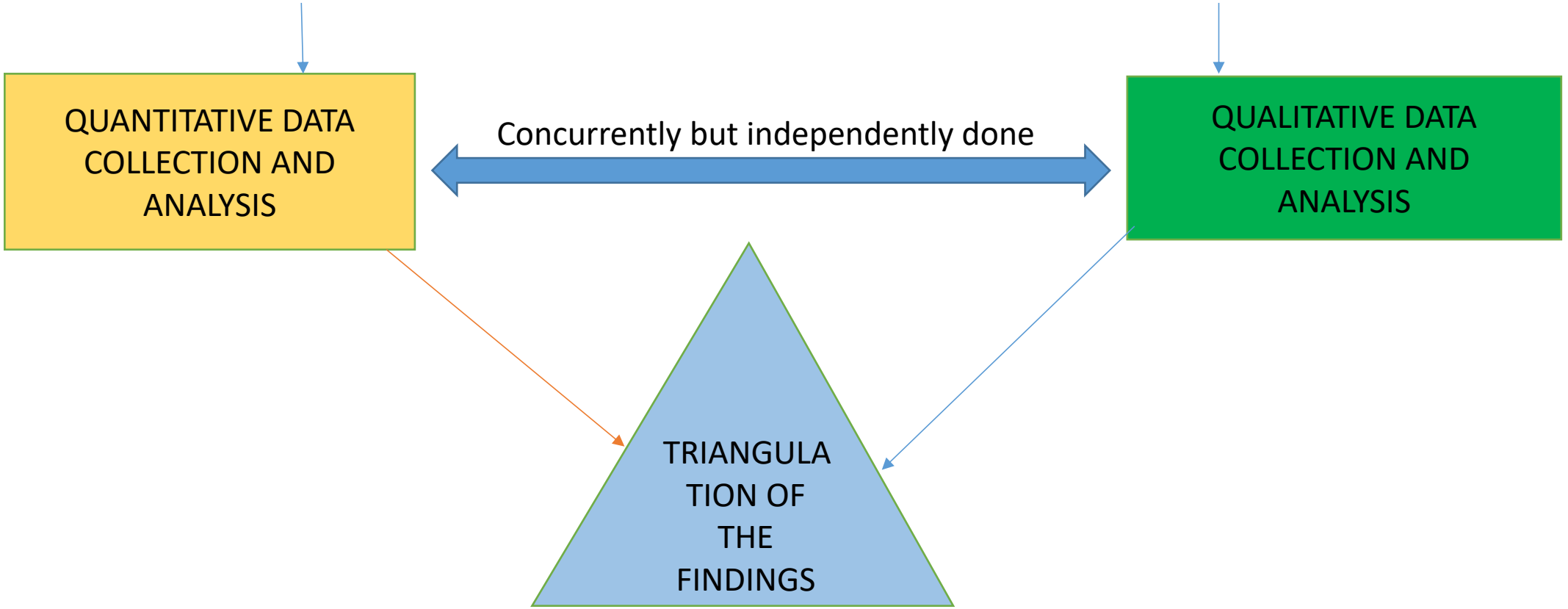
The study focused on the period from 2020, when the CBC was introduced, to 2024, when the first UCE cohort sat examinations under the new curriculum

# RESEARCH METHODOLOGY

## RESEARCH PARADIGM ADOPTED

PRAGMATISM (Constructivists +positivist view)

**CONCURRENT PARALLEL MIXED METHOD RESEARCH DESIGN**



# STUDY POPULATION

| Subject | Expected Item Writers | Sampled Item Writers |
|---|---|---|
| English Language | 8 | 8 |
| History and Political Education | 8 | 7 |
| Geography Paper 1 | 8 | 6 |
| Christian Religious Education (CRE) | 8 | 7 |
| Mathematics | 8 | 7 |
| Physics Paper 1 | 8 | 7 |
| Physics Paper 2 | 8 | 7 |
| Physics Paper 3 | 8 | 8 |
| General Science Physics | 8 | 6 |
| Chemistry Paper 1 | 7 | 7 |
| Chemistry Paper 2 | 8 | 8 |
| Chemistry Paper 3 | 8 | 7 |
| General Science Chemistry | 9 | 8 |
| Biology Paper 1 | 8 | 7 |
| Biology Paper 2 | 8 | 8 |
| Biology Paper 3 | 8 | 7 |
| General Science Biology | 8 | 8 |
| Total | 136 | 123 |

# SAMPLE SIZE DETERMINATION

The minimum sample size of **102** for the study was determined using **Yamane's (1967) formula** for a finite population

$$n = \frac{N}{1 + N(e)^2}$$

**n** = required sample size

**N** = population size (in this study, 136)

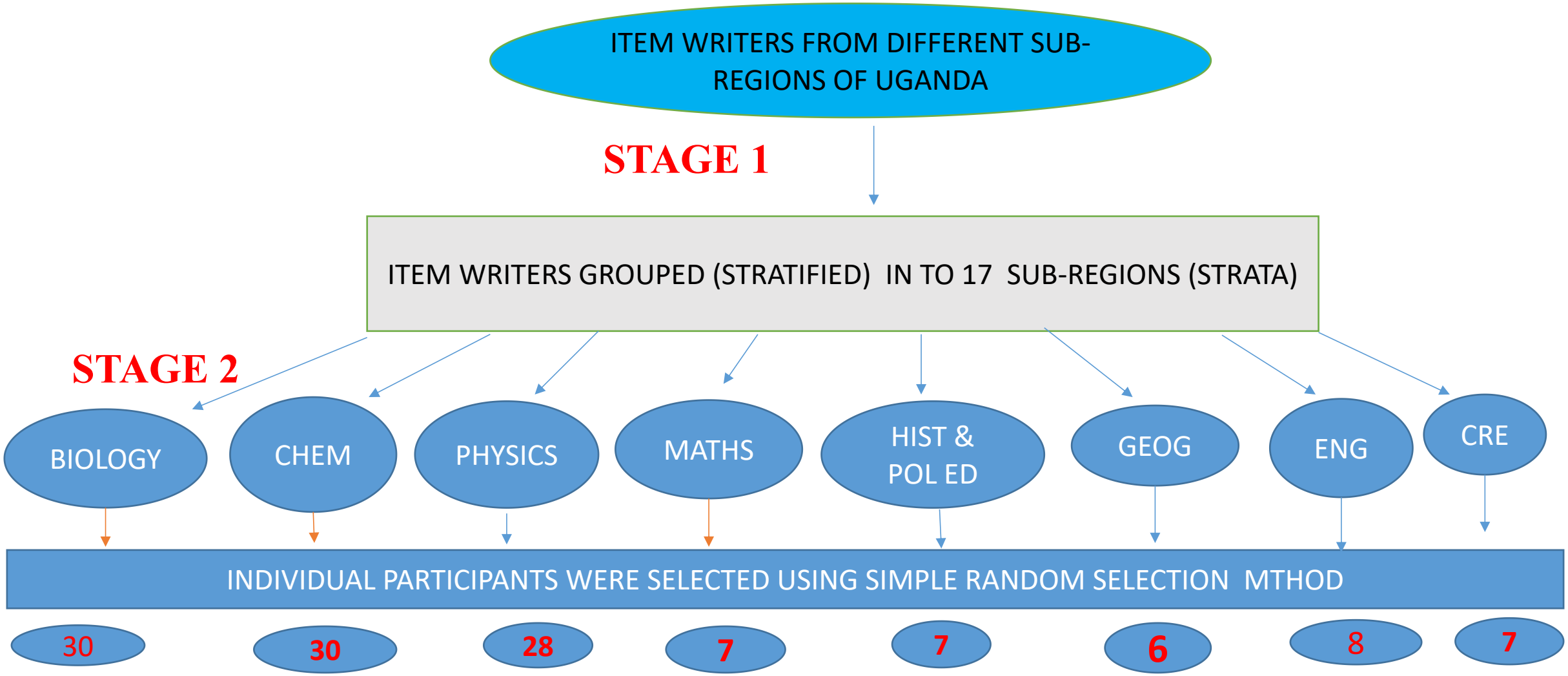
**e** = level of precision (5% or 0.05)

**Z** = z-score corresponding to the desired confidence level (for 95% confidence, Z = 1.96)

To account for 20% possible non-response or incomplete participation, the study intentionally **Sampled 123 item writers.**

# SAMPLING STRATEGY

## TWO-STAGE STRATIFIED SIMPLE RANDOM SAMPLING



# METHODS AND TOOLS USED FOR DATA COLLECTION

1- **A Survey using structured questionnaire-**administered to 123 respondents.

2- **Document review using Content Analysis Matrix** was used to evaluate both theory and practical papers of the UNEB past papers of 2024 and 2024 Mock paper collected from 5 different regions

**Subject papers reviewed were:** Physics, Mathematics, Chemistry, Biology, English, History, CRE and Geography, as well as their corresponding syllabi under the New Lower Secondary curriculum

# DATA QUALITY CONTROL MEASURES

- **Validity**
- Face and content validity were established through expert review by three senior examiners who confirmed the relevance, clarity, and coverage of items in relation to the research objectives.
- **Reliability**
- Survey Instruments were designed and **pre-tested** on 7 non-sample teachers.
- Reliability analysis was assessed using SPSS version 21 by calculating Cronbach's Alpha for the Likert-scale items in Sections C, D, E, and G. The analysis yielded an overall alpha coefficient of 0.82, which exceeds the acceptable threshold of 0.70
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# DATA ANALYSIS

**Qualitative data –From** Structured questionnaire responses and documents contents were analyzed using **deductive content analysis** based on the Bloom's revised taxonomy and content analysis frame work.

- During document review using **Content Analysis Matrix** , item word cues that aligned with 21st century skills - were coded, counted and converted in to percentages. Word cues that reflect cognitive, Affective and Psychomotor domains were also mapped, counted and converted in to percentages.
- Findings from surveys and documents were **compared and merged** to revealed alignment and gaps in assessment practices. Percentages, frequencies, and cross-tabulations were used to present the findings.

# Quantitative Data Analysis

- To determine whether there were statistically significant differences in the assessment of 21st-century skills between the Uganda National Examinations Board (UNEB) and regional mock examination bodies across five major regions in Uganda (WNSSEC, WAKISHA, JINJA, KABALE, and ASSEC),

. A one-way ANOVA was used.

. SPSS version 21 was used with tests for normality and homogeneity of variance done.

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# PRESENTATION OF FINDINGS AND DISCUSSION

## OBJECTIVE 1

## To Analyze how teacher factors affect assessment of 21st-century competences

**Years of Classroom Teaching Experience and the assessment of 21st Century skills**

| Years of Teaching Experience | Number of Respondents (n) | Percentage (%) |
|---|---|---|
| 0–5 years | 7 | 6% |
| 6–10 years | 47 | 38% |
| 11–15 years | 22 | 18% |
| 16+ years | 47 | 38% |
| Total | 123 | 100% |

## 1-Teaching Experience of Respondents

- **Only 6%** of respondents had **0–5 years** of teaching experience, indicating a **large majority** had extensive experience: **56 %** with **6–15 years while 38 %** with **16 years** and above. This shows that **over 94 % of teachers** had **6** and above years of teaching experiences

**Implications –**

- The high proportion of experienced teachers provided a solid base for implementation of 21st-century assessments
- These teachers have deep subject knowledge and assessment skills making them better positioned to reflect on and refine assessment strategies that align with 21st-century skills

# 2-Teachers' Awareness & Commonly Assessed Skills

| Awareness of 21st-Century Skills | Number of Respondents | Percentage |
|---|---|---|
| Aware | 123 | 100% |
| Not Aware | 0 | 0% |
| Total | 123 | 100% |

- All teachers (100%) were aware of 21st-century competences.
- A review of syllabi across 8 subjects indicated that each syllabus lists all the required 21st-century skills as generic skills on the front page supporting teachers' awareness claim.

## Implications

- This demonstrated teachers' professional alertness and readiness to integrate the 21st century skills in their classroom engagements with the learners and to effectively assess these skills

# TEACHERS MOST COMMONLY ASSESSES SKILLS

| Skill | Frequency of counts | Percentage |
|---|---|---|
| Creativity | 40 | 32.5% |
| Problem-Solving | 39 | 31.7% |
| Communication | 35 | 28.5% |
| Critical Thinking | 34 | 27.6% |
| Digital Literacy | 20 | 16.3% |
| Collaboration | 17 | 13.8% |
| Other (e.g., presentation) | 1 | 0.8% |

Despite all the experiences of the teachers and awareness of the 21st century skills ,not all skills were assessed. The most commonly mentioned assessed skills were creativity, problem-solving skills, communication and critical thinking skills,

The least assessed skills were digital literacy, and collaboration skills. This implies that other factors beyond teacher knowledge and experience played role

# 3-Teacher Workload & Assessment Practices

| Number of Class Streams Taught | Number of Respondents | Percentage (%) |
|---|---|---|
| 1 Class | 34 | 27.6 |
| 2 Classes | 19 | 15.4 |
| 3 Classes | 34 | 27.6 |
| 4 Classes | 35 | 28.5 |
| Total | 123 | 100.0 |

A total of 56.1% of teachers surveyed taught in 3 and 4 classes, indicating high workload and inadequate number of teachers in schools.

## Implications-

- A high teacher workload undermines the effective assessment of 21st-century skills. It limits time, creativity, and energy needed to implement the performance-based, learner-centered, formative assessment practices envisioned in the CBC.
- Addressing this requires strategic interventions like recruiting more teachers, redistributing teaching loads, and providing administrative support.

# TEACHERS COMMONLY USED ASSESSMENT METHODS IN SCHOOLS

| Assessment Method | History (n=32) | CRE (n=25) | Geography (n=46) | Mathematics (n=32) | Physics (n=95) | Chemistry (n=113) | Biology (n=49) | English (n=26) |
|---|---|---|---|---|---|---|---|---|
| Project-based learning | 4 (12.5%) | 6 24.0%) | 10(21.7%) | 6 (18.8%) | 20(21.1%) | 24(21.2%) | 9 (18.4%) | 5 (19.2%) |
| Problem-solving tasks | 7 (21.9%) | 4 (16.0%) | 7 (15.2%) | 7 (21.9%) | 22(23.2%) | 28(24.8%) | 9 (18.4%) | 6 (23.1%) |
| Group work | 13(40.6%) | 5 (20.0%) | 8 (17.4%) | 6 18.8%) | 21 22.1%) | 26(23.0%) | 11 22.4%) | 8 (30.8%) |
| Peer assessment | 5 (15.6%) | 1 (4.0%) | 6 (13.0%) | 3 (9.4%) | 15 15.8%) | 20(17.7%) | 6 (12.2%) | 4 (15.4%) |
| Self-assessment | 3 (9.4%) | 0 (0.0%) | 4 (8.7%) | 2 (6.3%) | 8 (8.4%) | 14(12.4%) | 3 (6.1%) | 3 (11.5%) |
| Observations of practical activities | 0 (0.0%) | 0 (0.0%) | 7 (15.2%) | 3 (9.4%) | 17 17.9%) | ‘28(24.8%) | 11 22.4%) | 0 (0.0%) |
| Portfolios | 0 (0.0%) | 0 (0.0%) | 2 (4.3%) | 1 (3.1%) | 2 (2.1%) | 6 (5.3%) | 0 (0.0%) | 0 (0.0%) |
| Digital Methods | 0 (0.0%) | 3(12.0%) | 2 (4.3%) | 7(21.9%) | 8 (8.4%) | 5 (4.4%) | 0 (0.0%) | 0 (0.0%) |

## Commonly Used Assessment Methods in Schools

- **Group Work** was the most frequently used method across all subjects:

  Highest in History (40.6%), followed by English (30.8%), Chemistry (23.0%), Physics (22.1%), Biology (22.2%). This reflects assessment of **communication** and **teamwork skills**.

- **Problem-Solving Tasks**:

  Widely used in both Sciences and Arts Chemistry (24.8%), Physics (23.2%), and History & Mathematics (21.9%). This Reflects assessment of **critical thinking across** both science and humanities.

- **Project-Based Learning**:

  - Most applied in Chemistry (21.2%), Physics (21.1%), Geography (21.7%), Biology (18.4%).Less used in History (12.5%) and English (19.2%). This highlights **inquiry-based learning skills** in science subjects.

## 2. Subject-Specific Observations:

**Science Subjects (Chemistry, Physics, Biology):**

- Frequently use project-based learning, problem-solving, observation of practicals, and peer/self-assessment.
- Demonstrates a strong alignment with practical and inquiry-based assessment.

- **Humanities Subjects (History, CRE, English):**
  - Tend to use group work and traditional methods.
  - Low use of peer/self-assessment and practical observation.
  - Indicate a gap in applying modern assessment strategies.

## Implications:

- There was a **stronger uptake of 21st-century assessment methods in science subjects**.
- **Humanities subjects lag** in integrating innovative and learner-centered assessment strategies.

- **Teacher capacity building** is needed in:
  - Peer and self-assessment
  - Portfolio assessment
  - Digital assessment

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# 5-Tools Used By Teachers for Assessing and Evaluating Learners in Specific Subjects

| Assessment Tool | HIST (n=29) | CRE (n=23) | GEO (n=39) | MTC (n=29) | PHY (n=84) | CHE (n=107) | BIO (n=79) | ENG (n=37) |
|---|---|---|---|---|---|---|---|---|
| Paper-based Written tests/exams | 8 (27.6%) | 7 (30.4%) | 11(28.2%) | 7(24.1%) | 22 (26.2%) | 30 (28.0%) | 22 (27.8%) | 9 (24.3%) |
| Observation checklists | 8 (27.6%) | 7 (30.4%) | 10 (25.6%) | 7 (24.1%) | 21 (25.0%) | 30 (28.0%) | 24 (30.4%) | 10 (27.0%) |
| Project Assessments Guide | 5 (17.2%) | 2 (8.7%) | 7 (17.9%) | 5 (17.2%) | 16 (19.0%) | 21 (19.6%) | 21 (26.6%) | 4 (10.8%) |
| Portfolios | 1 (3.4%) | 0 (0.0%) | 2 (5.1%) | 0 (0.0%) | 0 (0.0%) | 4 (3.7%) | 2 (2.5%) | 0 (0.0%) |
| Peer assessment forms | 4 (13.8%) | 0 (0.0%) | 4 (10.3%) | 5 (17.2%) | 5 (6.0%) | 8 (7.5%) | 4 (5.1%) | 5 (13.5%) |
| Self-assessment forms | 3 (10.3%) | 0 (0.0%) | 3 (7.7%) | 3 (10.3%) | 10 (11.9%) | 7 (6.5%) | 1 (1.3%) | 3 (8.1%) |
| Digital tools | 0 (0.0%) | 0 (0.0%) | 2 (5.1%) | 2 (6.9%) | 8 (9.5%) | 7 (6.5%) | 5 (6.3%) | 6 (16.2%) |

## Commonly used Assessment Tools in Schools :

- **Paper-based Written Tests/Exams-** was used widely across all subjects
- **Observation Checklists-**Also commonly used across all subjects but mostly used in Sciences
- **Project Assessments Guide-**Moderately used with high percentage usage in Sciences

## Least Used Assessment Tools:

- **Digital Tools-**Least used overall despite growing relevance in modern education.
- **Portfolios-**Rarely used tool with most subjects showing 0 responses except in Geography.
- **Self-Assessment Forms-**Mostly unused tool

# 6-Teachers Rating of the effectiveness of the tools in assessing the 21st century skills

| Type of Assessment Tool | Effectiveness of the Tools | | | | | |
|---|---|---|---|---|---|---|
| | Very Ineffective (1) | Ineffective (2) | Neutral (3) | Effective (4) | Very Effective (5) | Total |
| tests/exams papers | 0 (0%) | 38 (31%) | 38 (31%) | 42 (34%) | 5 (4%) | 123 |
| Observation checklists | 0 (0%) | 24 (20%) | 4 (3%) | 52 (42%) | 43 (35%) | 123 |
| Rubrics for the project | 0 (0%) | 11 (9%) | 18 (15%) | 46 (37%) | 48 (39%) | 123 |
| Peer assessments | 0 (0%) | 5 (4%) | 9 (7%) | 46 (37%) | 63 (51%) | 123 |
| Self-assessment forms | 0 (0%) | 4 (3%) | 35 (28%) | 34 (28%) | 50 (41%) | 123 |
| Digital tools | 0 (0%) | 8 (7%) | 27 (22%) | 44 (36%) | 44 (36%) | 123 |

# Tool Effectiveness & Usage

**Effective tools**

observation checklists and  project guides.

Digital, peer, and self-assessment tools effective but rarely used.

**Least effective tool**

Written paper based tests yet it was the most preferred tool despite claims that they assess lower-order skills (Uwezo, 2021). However, document review of the examination papers showed that there was Shift towards scenario-based questions improving quality of written paper based tests.

# TEACHERS ENGAGEMENT IN CONTINUOUS ASSESSMENT IN SCHOOLS

| Focus Area | Findings | Implications |
|---|---|---|
| Project-Based Learning (PBL) | Learner engagement in PBL<br>Frequently: 11%<br>Occasionally: 77%<br>Rarely: 12%<br>Never: 0% | PBL not fully integrated as a routine assessment strategy as Majority (77%) of teachers engage learners occasionally→ limits development of critical thinking & creativity in learners |
| Activities of Integration (AoI) | Often: 59.3%<br>Occasionally: 40.7%<br>Never: 0% | AoI was often used & widely practiced → promotes real-life, interdisciplinary learning. |
| Use of RACE Framework for assessing AoI | Use RACE: 78%<br>Aware but not using: 22%<br>Not aware: 0% | Structured assessment supports objectivity in evaluating skills. |
| School Support for AoI | Strongly Agree: 53.7%<br>Agree: 13%<br>Strongly Disagree: 20.3% | Inconsistent support → some schools lack enabling environments. |
| Subject Achievement Assessment (SAA) | Consistent in all classes: 68.3% Agree<br>S.1 & S.2 serious: 50.4% Strongly Agree | Disparities in lower classes → affects early skill development. |

**Summary**

- The findings reveal that while there is a growing recognition and adoption of 21st-century assessment practices in Ugandan secondary schools, implementation of Continuous Assessment (CA) remains inconsistent.
- Project-Based Learning (PBL) is still irregularly used, often treated as supplementary rather than integral to teaching and learning.
- On the other hand, Activities of Integration (AoI) and the RACE framework are more widely embraced, indicating progress toward competency-based education.
- Subject Achievement Assessments (SAA) are largely conducted on a continuous basis, aligning with the Competency-Based Curriculum (CBC). However, disparities in school-level support and varied commitment across class levels—particularly in S.1 and S.2—highlight systemic gaps that may hinder learners' holistic skill development.

# OBJECTIVE 2

## TO EVALUATE THE EXTENT TO WHICH CURRENT ASSESSMENTS MEASURED 21ST-CENTURY COMPETENCIES

| Subject | No. of Items | Cognitive (%) | Psychomotor (%) | Affective (%) |
|---|---|---|---|---|
| **Sciences & Math** | | | | |
| Chemistry | 6 | 45 | 10 | 13.3 |
| Biology | 9 | 42.8 | 14.4 | 15.6 |
| Physics | 4 | 38.8 | 21.3 | 5 |
| Mathematics | 7 | 45 | 36.4 | 15 |
| Subtotal (Sciences & Math) | 26 | 43.3 | 20.4 | 13.3 |
| **Humanities & English** | | | | |
| CRE (C) | 6 | 51.7 | 38.3 | 10 |
| English (E) | 7 | 42.1 | 33.6 | 24.3 |
| Geography (G) | 6 | 52.5 | 24.2 | 23.3 |
| History (H) | 4 | 46.3 | 22.5 | 31.3 |
| Subtotal (Humanities & English) | 23 | 48 | 30.4 | 21.5 |

Assessment items aligned with all **three learning domains**: **Cognitive**, **Psychomotor**, and **Affective**. This indicates 2024 UCE assessment aligned with the objectives of **CBC**

**1-Cognitive Domain was the Most Assessed**

**91.3%** of items assessed **higher-order thinking skills**: Analysis, Evaluation, Application, and Creation. **No recall-based questions** were found.

**2- Psychomotor Domain** was Moderately Assessed which accounted for **50.8%** of assessment items.

- Mainly appeared in **practical-based subjects**: Physics, Chemistry, Biology, Geography.
- Tasks included: Apparatus manipulation, Graph drawing, Map sketching, Measurement tasks.
- However, focus remained more on **cognitive understanding** than skill execution.

**3- Affective Domain was Least Assessed-**Represented only **34.8%** of items.

- Mostly found in Humanities and Language subjects. Items Required students to: Show values, attitudes, ethics, Debate on moral issues, Demonstrate social awareness and empathy.

- **IMPLICATIONS**
- The results show  all the three domains of learning were assessed.
- However, there was a strong bias towards **cognitive assessment**.
- **Psychomotor and affective domains** are underrepresented.
- **40**

# ASSESSMENT OF 21ST CENTURY SKILLS BY UNEB

| Skill | CHEM | BIO | PHY | MTC | ENG | GEO | CRE | HIST | Overall (%) |
|---|---|---|---|---|---|---|---|---|---|
| **Critical Thinking (15%)** | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | **100%** |
| **Problem Solving (15%)** | 83% | 86% | 100% | 100% | 43% | 67% | 17% | 75% | **70%** |
| **Creativity (10%)** | 50% | 29% | 25% | 29% | 43% | 0% | 0% | 25% | **25%** |
| **Communication (10%)** | 33% | 57% | 0% | 0% | 57% | 67% | 83% | 75% | **47%** |
| **Collaboration (5%)** | 0% | 0% | 0% | 43% | 0% | 0% | 0% | 0% | **6%** |
| **Math Skills (5%)** | 17% | 29% | 50% | 100% | 0% | 17% | 0% | 0% | **27%** |
| **Digital Literacy (5%)** | **17%** | **14%** | **50%** | **0%** | **0%** | **0%** | **0%** | **0%** | **13%** |

Analysis of 47 UNEB Examination items comprising of 24 from Science/Mathematics and 23 from Humanities / English Language revealed that;

- There was a strong evidence and effort put by UNEB to integrate 21st Century skills in its 2024 UCE assessment.

- **Critical thinking** was the most consistently assessed across all (100%) of the subjects analyzed.
- **Problem solving** majorly well integrated in Science accounting for 92% of all the items analyzed but moderately integrated in humanities/English language accounting for 48%.
- **Communication skill** assessment appeared predominantly in Humanities at 70% compared to the sciences and mathematics at only 25%. This was observed particularly in CRE and English.
- This is in agreement with what teachers mentioned as The most commonly assessed skills were creativity, problem-solving skills, communication and critical thinking skills,

WEAKLY ASSESSED SKILLS WERE;

- Creativity and innovativeness. It appeared in just 33% of sciences and 17% of Humanities
- Very alarming is the complete absence (0%) of items demanding application of ICT skills commonly known as digital literacy in humanities.
- This findings are in agreement with what teachers reported that the least assessed skills were digital literacy skills and Collaboration.

- **SUBJECT SPECIFIC ASSESSMENT**
- Geography, CRE, and History scored highly in critical thinking (100%), communication and problem solving but lacked adequate integration of mathematical skills and complete absence of ICT skills (0%).
- science subjects scored highly in Critical thinking at (100%) problem solving at (92%) and Moderately in mathematical skills at (50%), but scored low in creativity ,Very low in communication, and collaboration among all the subjects.
-

**In summary**,

- the UCE assessments performed well in assessing the 21st Century skills particularly problem solving, critical thinking, and communication, which are fundamental for lifelong learning and adaptability. This aligns with CBC goals

- However, the low level of assessment of collaboration, and absence of digital literacy raise a concern. These gaps reflect the need for more holistic and innovative assessment designs that cover a full range of 21st-century skills learners require to survive in the 21st- century world.

# ASSESSMENT OF 21ST CENTURY SKILLS BY MOCK EXAMINATION BODIES

Most assessed skills

Critical thinking and problem solving assessed (100%) especially in Sciences and mathematics . In addition to the above **communication** was highly assessed in humanities and English language.

**Weakly Assessed Skills**

creativity, collaboration and ICT /digital literacy at 30%. Collaboration was almost absent from all the assessments. These findings are similar to assessment by UNEB and what teachers said. This indicates Assessments at school levels driven by assessment by UNEB.

# COMPARING UNEB AND MOCK ASSESSMENT

## Prove of the Null Hypotheses

To prove if there was no statistically significant difference in the assessment of 21st-century skills between UNEB examinations and regional mock examinations across different regions in Uganda

**One-way between-groups Analysis of Variance (ANOVA)**

| Source | SS | df | MS | F | p |
|---|---|---|---|---|---|
| **Between Groups** | 762.81 | 5 | 152.56 | 0.121 | **.987** |
| **Within Groups** | 50413.71 | 36 | 1400.38 | | |
| **Total** | **51176.52** | **41** | | | |

*Note.* p > .05 indicates no statistically significant difference.

- **RESULT ANALYSIS**
- The results indicated that there was no statistically significant difference in the percentage of 21st- century skills assessed across levels, $F\ (5,\ 36) = 0.121,\ p = .987$.
- This suggests that the level of integration of 21st-century skills is relatively consistent between UNEB and school-level mock assessments. Therefore the null hypothesis is held.

# Objective 4

# Examine how institutional challenges affect the assessment of 21st Century competences

| | Respondents' Rating of the level of Severity of the challenges | | | | | |
|---|---|---|---|---|---|---|
| T | Not at All a Problem | Slightly | Moderately | Severely | Moderate + Severe | % Moderate + Severe |
| Teacher shortages | 36 (29.3%) | 7 (5.7%) | 43 (35.0%) | 37 (30.1%) | 80 | 65.40% |
| Overcrowded classrooms | 28 (22.8%) | 28 (22.8%) | 11 (8.9%) | 56 (45.5%) | 67 | 54.50% |
| Inadequate science lab facilities | 41 (33.3%) | 35 (28.5%) | 25 (20.3%) | 22 (17.9%) | 47 | 38.20% |
| Lack of ICT resources | 36 (29.3%) | 36 (29.3%) | 14 (11.4%) | 37 (30.1%) | 51 | 41.50% |
| CA not counted | | | | | | |

## INSTITUTIONAL CHALLENGES AFFECTING ASSESSMENT OF 21ST-CENTURY SKILLS

**1. Teacher Shortages**

65.4% of teachers identified this as a major challenge.

30.1% teachers reported teacher shortage as severe challenge in their school

35.0% reported it as a moderate challenge.

**Implication**: Leads to burnout and limits implementation of formative and performance-based assessments.

**2. Overcrowded Classrooms**

54.5% of teachers cited this as a major hindrance:

45.5% said it was a severe challenge.

8.9% cited it as moderate. **Impact**: Affects delivery of learner-centered assessments.

**Note**: 22.8% said it's not a challenge—shows variation in infrastructure and enrolment levels across schools.

**Disparity**: Some schools lack the resources to support the large class sizes

## Science & ICT Infrastructure Challenges

### 3. Inadequate Science Laboratories

66.7% of teachers acknowledged some level of inadequacy:

17.9% severe, 20.3% moderate.

**Challenge**: Limits inquiry-based learning and hands-on science assessment under CBC.

### 4. Inadequate ICT Infrastructure

41.5% viewed it as a major challenge.

30.1% reported it as severe, 11.4% as moderate.

Challenge: Limits ICT assessment

# CONCLUSIONS

Teachers were experienced, aware of 21st-century skills, but actual assessment practices remain limited under CBC in Schools

- Most skills were accessed but Collaboration, creativity (esp. in science/mathematics), and ICT skills are rarely assessed.
- Written tests still dominate despite recognition of their limitations.
- **Teachers Integrated Methods in CA**: Real-life scenarios and project work are used, but peer/self-assessment and portfolios are inconsistently applied.
- **Systemic Barriers**: Large class sizes, inadequate resources, and insufficient in-service training hinder effective assessment.
- **UNEB and Mock examinations both** National exams and school based mock examinations showed effort in assessing most of the 21st Century skills such as critical thinking and problem-solving, but cognitive domain remains overemphasized. ***Digital literacy and collaboration were less assed.***

## STRATEGIC POLICY RECOMMENDATIONS FOR IMPROVED ASSESSMENT

- **Teacher Capacity Building**: Provide continuous, hands-on training on digital and performance-based assessment methods.
- **Infrastructure Investment**: Expand labs, ICT resources, and classroom space, especially in underserved areas.
- **Reduce Teacher Workload**: Recruit more teachers, reduce class streams, and implement balanced timetables.
- **ICT Integration**: Make ICT mandatory up to Senior Four and provide nationwide internet connectivity.
- **Strengthen CA Usage**: Incorporate CA scores from Senior One & Two into national grading to enhance formative assessment.

**END** **THANK YOU FOR LISTENING** 