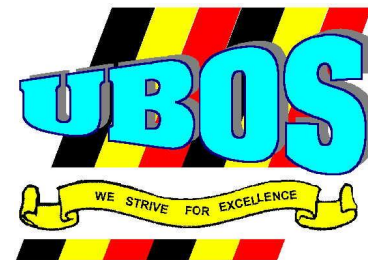


ANALYTICAL & CRITICAL THINKING INVIEW OF STATISTICS: DAY 1

UGANDA BUREAU OF STATISTICS (UBoS)



Presentation Outline



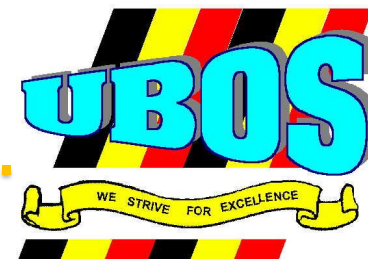
DAY 1: Monday, September 3, 2018

- ☐ Facts on SESRIC (video show)
- ☐ Expected Training Outputs
- ☐ Overview/Definitions of Analytical and Critical Thinking
- ☐ Understanding Analytical and Critical Thinking
- ☐ Group Discussions and/or Presentations on:
 - Analytical and Critical Thinking Skills: Similarities and Differences
- ☐ Importance and Benefits of Analytical and Critical Thinking
- ☐ Group Discussions / Q&A on Survey Instruments, Survey Design & Data Collection



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Presentation Outline cont..



DAY 2: Tuesday September 4, 2018

- ☐ Review of DAY 1 (key points)
- ☐ What are good Analytical/Critical like?
- ☐ Group Discussions and/or presentations on:
 - Challenges and Opportunities for the Critical Analysis in the Assessment / National Statistics System (NSS)
- ☐ Practical Application of Analytical and Critical Thinking Skills in Statistical Production
- ☐ Group Discussions on:
 - The way Forward/Recommendations for Analytical and Critical Thinking for the Development of Statistics

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Facts on SESRIC (Video Show)



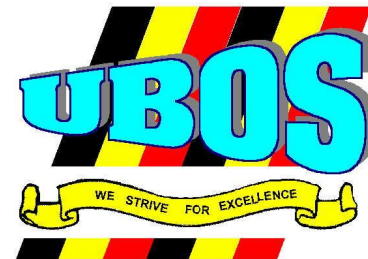
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Expected Training Outputs (Objectives)



- ❑ Staff/Participants equipped with Analytical and Critical Thinking Skills
- ❑ Staff are in position to identify some of the Analytical and Critical Skills that they possess
- ❑ Practical Application of Analytical and Critical Thinking Skills in Statistical Production

Overview of Analytical and Critical Thinking



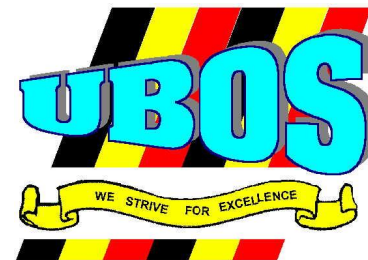
Definitions:

❖ Analytical Thinking:

- ❖ “The tendency to be habitually alert to potential problems and vigilant in anticipating consequences and to foresee SHORT-TERM and LONG-TERM outcomes of events, decisions and actions” e.g. South Sudan, New Gambia etc.



Overview of Analytical and Critical Thinking



Definitions:

Definitions: cont..

- ❖ Analytical Thinking:
- ❖ “Analytical thinking describes a thinking style that enables a person to break down complex information or a series of comprehensive data. It uses a step-by-step method to analyze a problem and then come to an answer or solution”.



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Overview of Analytical and Critical Thinking

Definitions:

- ❖ Critical Thinking:
- ❖ “The application of logical principles, **rigorous standards of evidence** and careful reasoning to the analysis and discussion of claims, beliefs and issues”
- ❖ “The application of rational, skeptical, unbiased analysis, evaluation of **factual evidence**”

Overview of Analytical and Critical Thinking



Definitions: cont..

❖ Critical Thinking:

❖ “The intellectual disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action” – Michael Scriven and Richard Paul (summer 1987)



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Overview of Analytical and Critical Thinking



Definitions: cont..

- ❖ Critical Thinking:
- ❖ “Critical Thinking is the purposeful, self-regulatory judgment. This process gives reasoned consideration to evidence, context, conceptualizations, methods, and criteria” — **American Philosophical Association Delphi Consensus definition.**



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Understanding Analytical and Critical Thinking

Analytical Thinking:

- is a thinking style that enables a person **to break down** complex information or a series of comprehensive data.
- uses **a step-by-step method** to analyze a problem and then come to an answer or solution.
- represents a **cause** and **effect** style of looking at a problem, and is sometimes referred to as perceiving something through **multiple lenses**.

Understanding Analytical and Critical Thinking



Analytical Thinking: cont..

- “Analytical Thinking would help you to ask **WHY, WHEN, WHERE, and WHO?**
- In other words, you would want to know **why** you are doing what you do and **when** it has to be done and **Where** it has to be and by **Who?**
- It is basically identification of processes and why they have to be done the way it is being done as well as how it can be improved upon (if necessary)”.

- Mr Yaw (Tableau expert)

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Understanding Analytical and Critical Thinking

Critical Thinking:

- “has to do with evaluating information that is fed to you, and determining how to interpret it, what to believe and whether something appears to be right or wrong.
- style of thinking that thinker employs reasoning to come to a conclusion about how he wants to perceive the information.
- also takes outside information into account during the thought process, rather than sticking strictly with the information presented, critical thinking lets the thinker explore other elements that could be of influence”.

Understanding Analytical and Critical Thinking



Critical Thinking: cont...

- “is about the application of Knowledge in decision making.
- what kind of reports (dashboards) do I have to produce now that I know who my audience are?” – (Mr. Yaw – Tableau expert).

Similarities and Differences: Analytical and Critical Thinking

These would be discussed on the following points:

➤ Facts-based

➤ Process

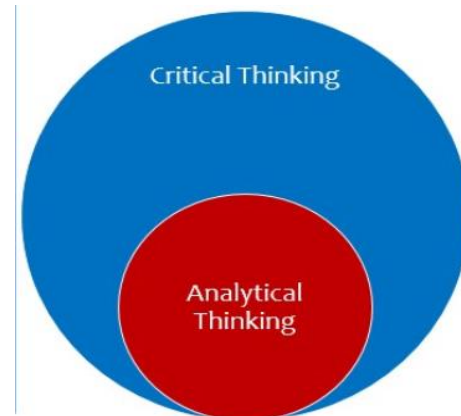
➤ Purpose

Similarities and Differences

Facts-Based



- “Analytical and critical thinking styles both look at **facts**, but those **facts** are then used for different **purposes**”.
- When it comes to **analytical thinking**, **facts** are used to build on information and support evidence that leads to a logical conclusion.



- **Critical thinking**, on the other hand, uses **facts** to determine a belief, form an opinion or decide whether something makes sense.

Similarities and Differences Process



➤ **Analytical thinking**
uses a linear and
focused process, with
one thought
following the other
in a stream-like
formation.

➤ **Critical thinking**
occurs more in
circles and can go
around and around
until a conclusion is
stumbled upon or
achieved.

Similarities and Differences

Purpose



➤ **Analytical thinking**
uses strategies to figure out the solution to a complex question or to problem-solve.

➤ **Critical thinking**
methods main goal is to come up with a belief or perception about something.

➤ **Analytical thinking** is the mental process of breaking down complex information or comprehensive data into fundamental parts or basic principles.

➤ **Critical thinking** is the mental process of carefully evaluating information and determining how to interpret it in order to make a sound judgment.

➤ **Analytical thinking involves:**

- Gathering relevant information
- Focusing on facts and evidence
- Examining chunks of data or information
- Identifying key issues
- Using logic and reasoning to process information
- Separating more complex information into simpler parts
- Sub-dividing information into manageable sizes
- Finding patterns and recognizing trends
- Identify cause and effect
- Understanding connections and relationships
- Eliminating extraneous information
- Organizing Information
- Drawing appropriate conclusions

➤ **Critical thinking involves:**

- Gathering relevant information
- Evaluating information
- Asking questions
- Assessing bias or unsubstantiated assumptions
- Making inferences from the information and filling in gaps
- Using abstract ideas to interpret information
- Formulating ideas
- Weighing opinions
- Reaching well-reasoned conclusions
- Considering alternative possibilities
- Testing conclusions
- Verifying if evidence/argument support the conclusions

Importance and Benefits of Analytical and Critical Thinking



❖ Importance of Analytical Thinking:

- encourages the tendency to be habitual alert to potential problem
- enables a person to break down complex information or a series of comprehensive data

❖ Benefits of Analytical Thinking:

- it anticipates consequences to short- and long-term outcomes of events, decisions and actions
- it helps in easy disaggregation of data or information

Importance and Benefits of Analytical and Critical Thinking



cont...

❖ Importance of Analytical Thinking: cont...

- encourages a step-by-step method to analyze a problem and then come to a solution
- represents a cause and effect style of looking at a problem

❖ Benefits of Analytical Thinking: cont...

- it provides a sequential guide to problem solution
- helps to show causations and/or correlations between one variable and the other



Importance and Benefits of Analytical and Critical Thinking cont...



❖ Importance of Analytical Thinking: cont...

- ask the question why, when, where and who in facts finding or data collection?

❖ Benefits of Analytical Thinking: cont...

- it helps to build/draw sound survey instruments or design

Importance and Benefits of Analytical and Critical Thinking



❖ Importance of Critical Thinking:

- encourages independency
- improves one's self-evaluation
- encourages creativity and innovation
- encourages mindedness to change

❖ Benefits of Critical Thinking:

- creates a domain-general thinking skill
- crucial for self-reflection
- promotes creativity and innovations
- requires the critical use of reason in solving a problem



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Importance and Benefits of Analytical and Critical Thinking



cont...

❖ Importance of Critical Thinking:

cont...

- encourages good decision-making
- encourages scientific discoveries and theories
- keeps up-to-date with the economy

❖ Benefits of Critical Thinking: cont...

- provides a check list for one's decision
- forms the bases in experimentation and theory confirmation
- gives guidelines on policy decisions



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Thank you for your attention!

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