

HSRC RESEARCH OUTPUTS

6246

# **Assessment systems in education: Purpose, development and applications**

**National READ meeting**

**12-13 January 2010, Lusaka, Zambia**

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**READ Technical Advisory Group**

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# Presentation outline

- **Definition, purpose and types**
- **Applications at different levels of system**
- **National assessment systems:**
  - **Components of a NAS**
  - **Structure of NAS**
  - **Characteristics of NAS**
  - **Elements**
  - **Development stages**
- **Examples**
- **Questions / Challenges**



# Definition of assessment

Assessment defined as

**“the process of obtaining information that is used to make educational decisions about students, to give feedback to the student about his or her progress, strengths and weaknesses, to judge instructional effectiveness and curricular adequacy and to inform policy”**

(AFT, NCME, NEA, 1990: 1)

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# **Purpose of assessment to gather evidence about learning**

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# How is this evidence used

- Support improvement in learning
- Monitor functioning of schools/the system
- Certify and/or select learners
- Hold institutions and staff accountable



## **How is assessment evidence obtained?**

- Teacher observations and questions
- Classroom tests
- Classroom work & homework
- Performance tasks
- Projects and assignments
- Portfolios of student work
- Standardized tests (large scale surveys)
- Examinations (classroom & national)



## Users of assessment information

- **Learners need feedback on their performance**
- To know where they are doing well and where they need assistance
- **Teachers need information about their learners' understanding in order to make decisions about:**
  - What and how they teach and/or
  - What support required by learners
- **Parents need information about their children's learning progress so they know the areas where their children need additional support.**

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## Users of assessment information

- **School districts** need information about progress of schools and learners so they can know where additional support for teachers and learners may be needed.
- **National and Provincial/State Departments of Education** need to know whether the education system is providing the appropriate environment for enhancing learning in order to support those areas in need of improvement





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**(AFT, NCME, NEA, 1990: 1)**

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# How is assessment evidence used

- **Formative use**

Assessments used to provide specific feedback (to learners, teachers, officials) about how to go about improving learning, i.e. use of evidence here and now

- **Summative use**

Assessments used to determine how much an individual has learned i.e. evidence based on what has already been done



# Summative vs Formative assessment?

## The garden analogy

If we think of our children as plants ...

*Summative assessment* of the plants is the process of simply measuring them. It might be interesting to compare and analyse measurements but, in themselves, these do not affect the growth of the plants.

*Formative assessment*, on the other hand, is the equivalent of feeding and watering the plants appropriate to their needs - directly affecting their growth.

Ref – NZMoe, Online workshop

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# Assessment Cycle

LEARNING  
GOALS

Take

appropriate  
Action

Obtain

Evidence

Interpret &  
Publish

Evidence

Feedback  
to  
Ministry  
Teachers  
Parents  
Learners

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**What are the different parts of an  
ASSESSMENT SYSTEM**

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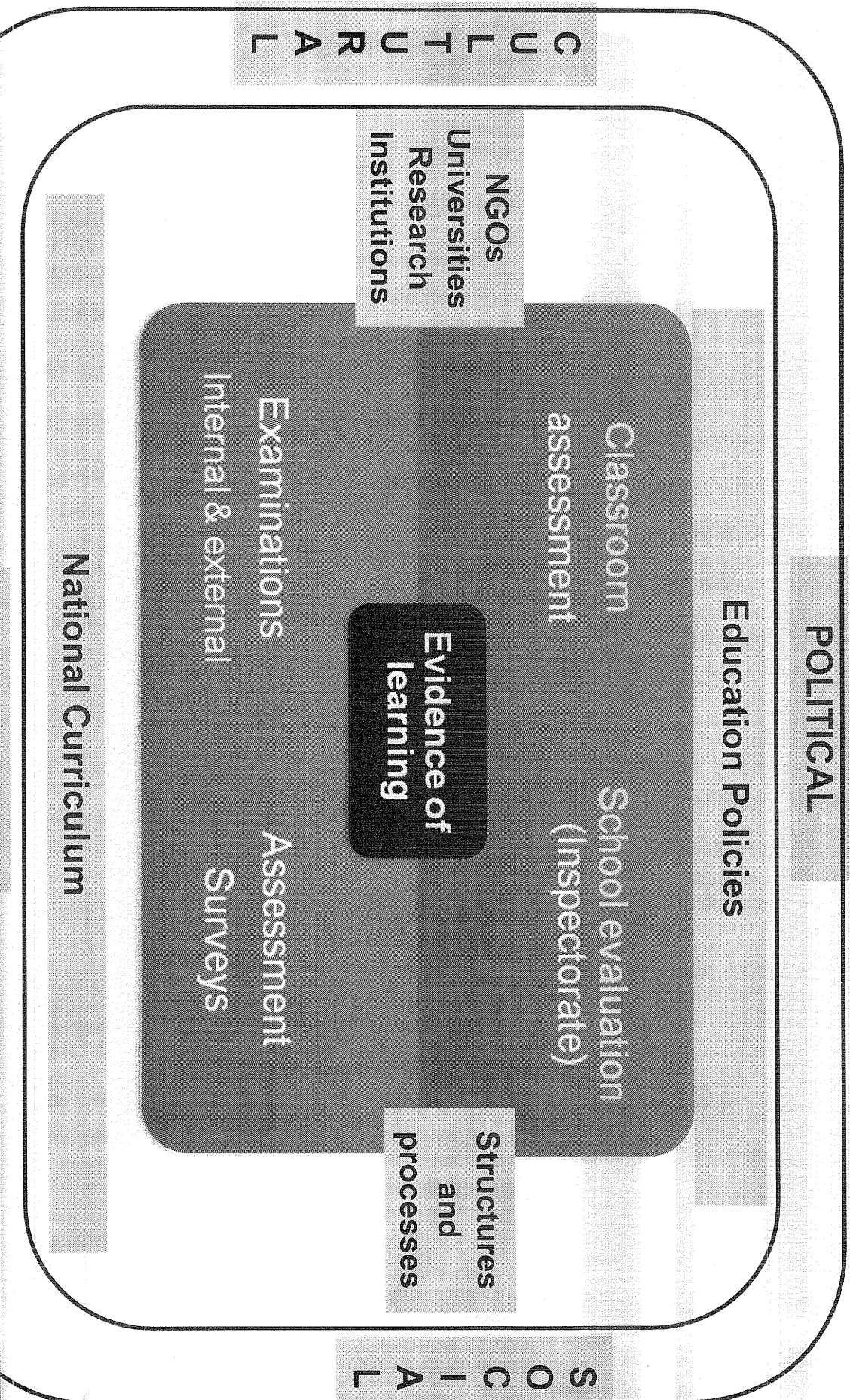
## **DEFINITION – Assessment System**

**an assessment system can be defined as a group of interacting, interrelated, or interdependent policies, practices, structures and processes for obtaining and applying evidence with relevant roleplayers at the different levels of the education system for improving learning**

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# Assessment system

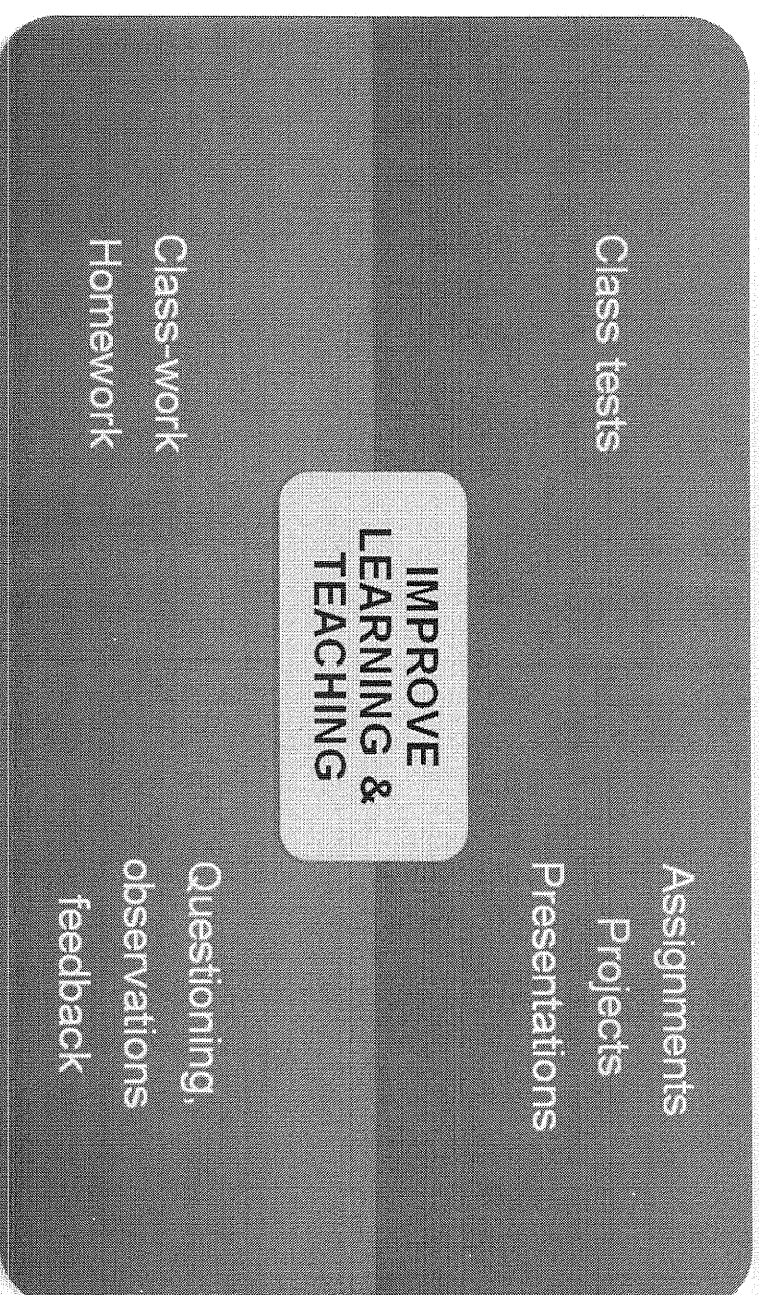


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# Classroom assessment

The process of obtaining evidence on the knowledge, skills and attitudes of individual learners for improving learning



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# School evaluations

The process of obtaining evidence about the effectiveness and efficiency of a school

Improve  
schools

Visits to support  
improvement

Evidence on  
learning outcomes

Dialogue and  
discussion

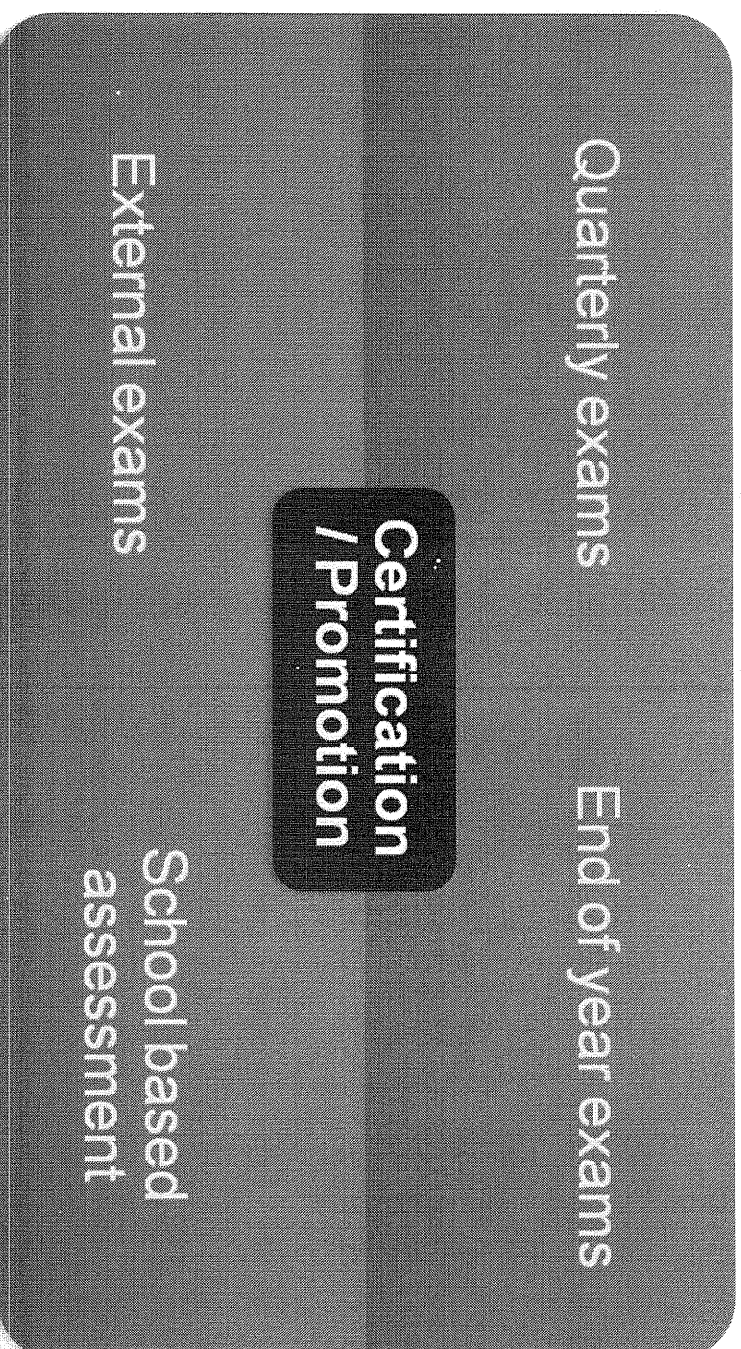
School improvement  
plans

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# Examinations

A process prescribed for testing qualification of candidates

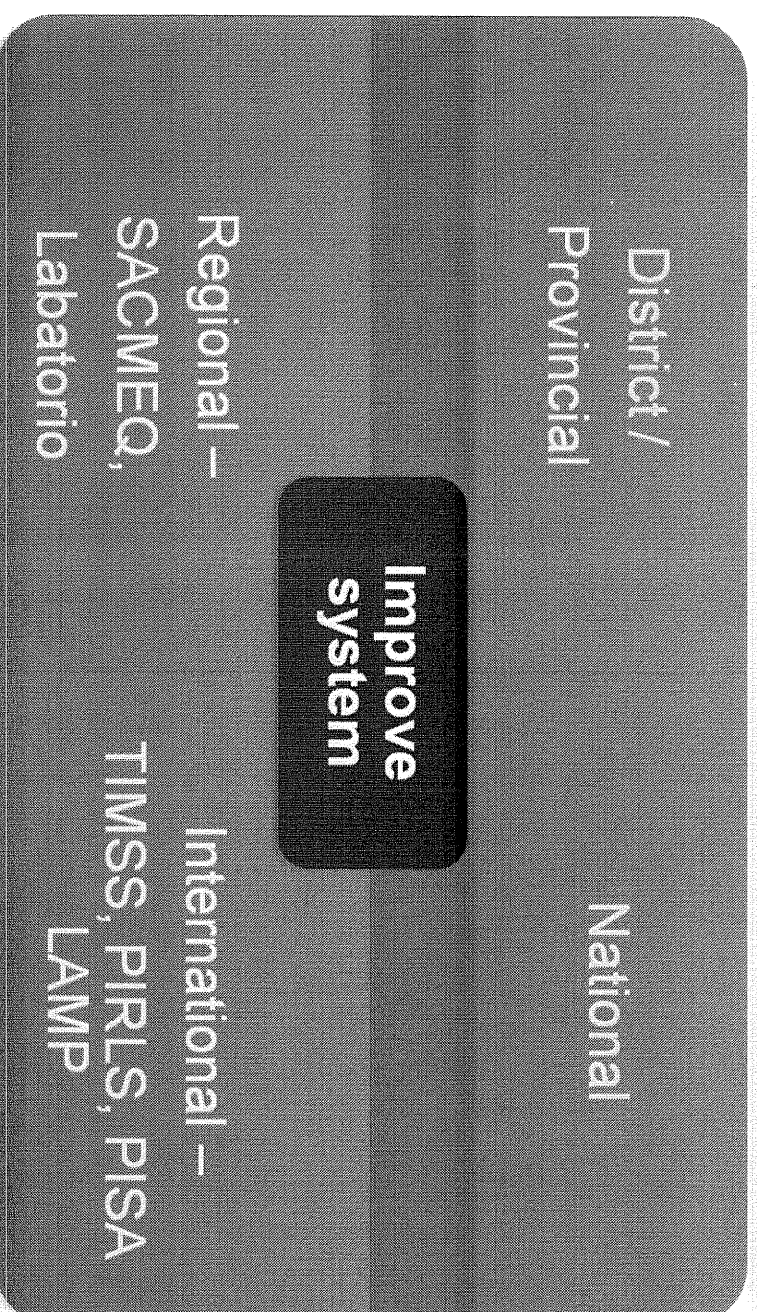


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# Assessment surveys

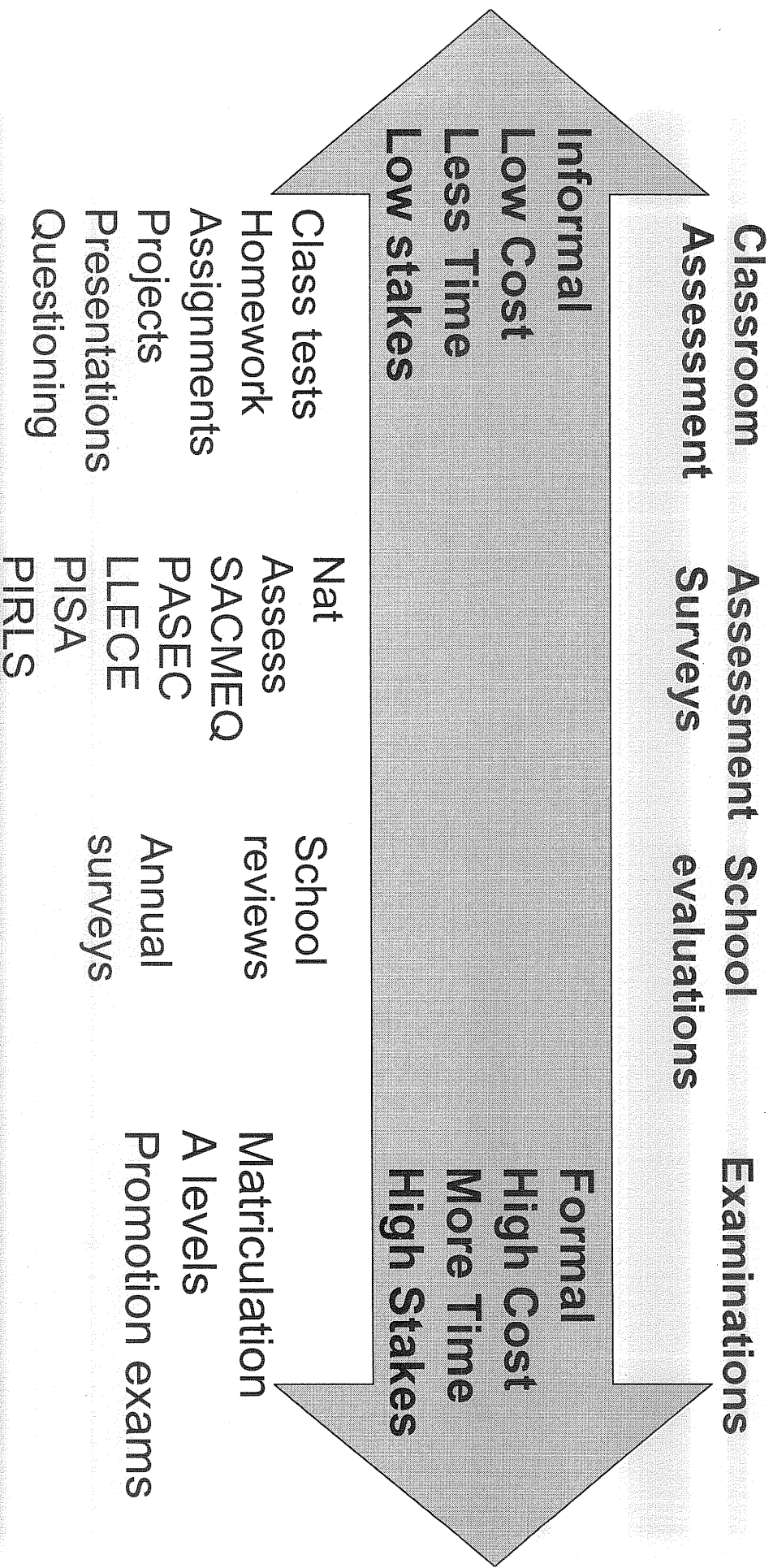
the process of obtaining evidence from an education system (or part thereof) on the performance of learners and other roleplayers as well as on the functioning of structures and programs within the system



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# Assessment Continuum

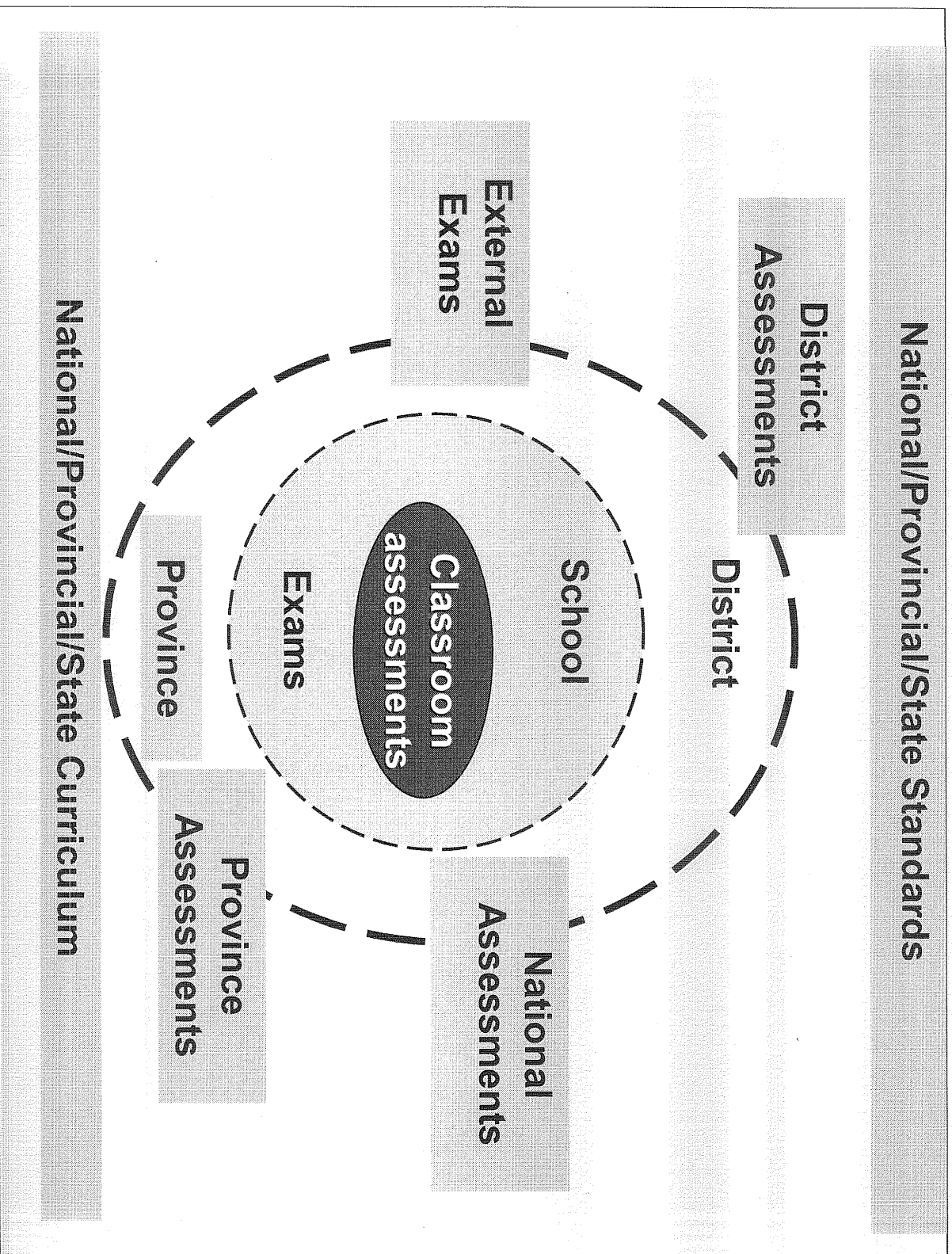


# STRUCTURE OF AN ASSESSMENT SYSTEM

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# Structure of an assessment system



Inter-  
national  
Assess

Regional  
Assess



**CHARACTERISTICS OF  
NATIONAL EDUCATION  
ASSESSMENT SYSTEMS**

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# Characteristics of NEAS

- **Clear purpose – improve learning**
  - **Comprehensive – national and classroom**
  - **Based on relevant curricular/standards**
  - **Valid, reliable**
  - **Involves all key role-players**
  - **Effective dissemination and use of information**
  - **Innovative practices**
  - **Effective monitoring and evaluation**
  - **Others ????**





**ELEMENTS OF**

**NATIONAL EDUCATION  
ASSESSMENT SYSTEMS**

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# Elements of a NEAS

- Purpose
- Aims to measure
- Evidence based on
  - Content areas
  - Target level & audience
  - Frequency
  - Policy link
- Responsibility for administration and reporting
  - Applicable standards
  - Recording
  - Reporting
  - Consequences
- Teacher assessment/Certification
- Assessment & Research institutions
- Training and Capacity development
- Formal authorities for assessment & exams
- Ministry assessment structures/units

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# DETERMINING STAGES OF DEVELOPMENT OF NEAS

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# Developmental stages of NEAS

- **Beginning**
  - Usually on exams system in place
- **Emerging**
  - Classroom / national assessments
- **Established**
  - Adding supporting structures
- **Mature**
  - Adding new innovations

# Stages of development of NEAS

Beginning	Emerging	Established	Mature
Policy / Declaration	Instruments & tools	Capacity development structures	Greater use of info in schools
Dedicated unit/section	Structures to implement	Evidence on use of information – all levels of system	Coherent & effective assess structures
Unit/section head	Analysis, reporting & dissemination	Long term strategy for system components	New innovative methods – e.g. IT
Support staff	Use of info to improve learning	M & E	Updated policies
Available funding	M & E	Integrate with EMIS	<b>Non cognitive outcomes</b>
?	?	Greater support structures	Integrate with M&E system
?	?		Greater subject area



# Phases and building blocks Indicators

ELEMENTS		Beginning	Emerging	Established	Mature
Enabling environment	Policy				
	Capacity				
	Organizing structure				
	Link to policy and practice				
Integration into education system	Coverage				
	Tools				
	Instruments				
Technical					

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# Phases by components

ELEMENTS		Classroom	Exams	School evaluation	Assess Surveys
Enabling environment	Policy				
	Capacity				
	Organizing structure				
	Link to policy and practice				
Integration into education system	Coverage				
	Tools				
Technical	Instruments				

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# Development stages of NAS

**For each stage, determine level of preparedness**

- **4 levels**
  - **Unprepared**
  - **Partially prepared**
  - **Prepared**
  - **Advance**
- **Assign score based on evidence ????**





**EXAMPLE OF NATIONAL  
EDUCATION ASSESSMENT  
SYSTEMS**

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# Country case studies

Beginning

Emerging

Established

Mature

## NATIONAL ASSESSMENT SURVEY

Eritrea

South Africa

New Zealand

## CLASSROOM ASSESSMENT SYSTEM

Malawi

South Africa

Uruguay

New Zealand

## EXAMINATION SYSTEM

?

Malawi

South Africa

Kenya

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## Next steps

- **Identify country strengths**
- **Identify innovative practices**
- **Map countries onto table**
- **Clarify key indicators for different stages**
- **Effect & review rating system**
- **ADDITIONS???**

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**Questions?  
Comments?**

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# **International Review on Assessment Systems in Zambia**

## **National READ Meeting**

**12-13 January 2010, Lusaka, Zambia**

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## Presentation outline

- **Background and context**
- **Purpose of presentation**
- **Examinations**
- **School based assessments**
- **Office of Standards**
- **National assessment system**
- **Questions / Comments**

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# Background and context

- READ project – TA to improve education assessment system in 7 countries
- Process:
  - SD conducted by countries
  - Action plan
  - Implementation of Action Plan
  - Review and Monitoring
- Support by READ Country team, WB Team Leader + READ Technical Advisory

Group

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## **Purpose of presentation**

- **Share findings of the National Education Assessment System Review**
- **Obtain input and comment on SD report**
- **Revise and update report**

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# Approach

- READ Launch October 2010
- READ SD report by Zambia Team
- December 2009 –
  - Review of Grade 9 marking - Lusaka
  - Interviews with ECZ & MOE – Lusaka & Livingstone
  - Update SD report
- January 2010 –
  - Review of Grade 12 marking – 3 Centers
  - READ SD consultation -

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# Process

## **BRIEF”**

Provide an critical review of current assessment system with a view of identifying specific areas of improvement –

Director - ECZ

- Review of relevant documentation
- Site visits to MoE, ECZ, marking centers
- Interviews with different staff members
- Observations of marking process
- No school visits for any interview or observations

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# Overview of Findings

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# Process

- Visits and interviews include:
  - ECZ departments and staff
  - MOE – different directorates
  - District office – Monza
  - Provincial office – Livingstone
  - Teacher education college – Livingstone
  - Examinations centers – Grade 9 and 12
- Schools were all closed for the end of year break



# EXAMINATIONS - 1

- Clear policy directives for the different examinations currently administered
- Used for selection and certification purposes
- Conducted annually in all subjects at the end of Grade 7, 9 and 12
- Also Teacher examinations - “unusual”
- Well established structures and systems:
  - Setting papers, administration, marking,

certification,

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# EXAMINATIONS - 2

- **Challenges:**
  - Weak data entry, storage and access systems
  - Limited secondary analysis of exam scores
    - No school level results
    - No trend analysis reported to schools
    - Limited feedback to schools
    - Disaggregation of results by province, district, etc
  - Paper based system for item banks
  - Need information on predictive validity of exams scores



# Classroom Assessments - 1

- Clear and well defined policy directives
- National curriculum for different grades and subject areas
- Relatively new initiative – <10 years
- Developed comprehensive material – at Grades 5, 6 and 7
  - Teacher guides on CA – information on preparing and administering assessment tasks, curriculum outcomes and performance indicators, and
  - Continuous assessment tasks – comprising assessment tasks for six learning areas arranged according to the school terms
- Pilot study to determine effect of CA on learning outcomes
  - evidence that CA makes a positive difference



# Classroom assessments - 2

- Key Issue –
  - Policy focuses on school based assessment with a dual role
  - Practical challenge – difficult to implement effectively
- Limited information on the extent to which CA implemented in all schools
- Also limited knowledge on:
  - Teacher assessment beliefs, understanding, expertise, experience and practices across different grade levels, school types
  - Support structures and process for improving CA
  - Feedback practices and its effect on learner performance





# Assessment surveys

- The National Policy on Education specifies that the “Ministry of Education will establish a more systematic approach to the use of research in the support of its key activities of policy formulation and evaluation of policy” (p. 149).
- NA effected through the Basic Education Subsector Investment Program (BESSIP) that outlined the rational, frequency, management and methodology
- Manifested in
  - Grade 5 NA
  - SACMEQ Regional assessment
  - 20011 – Grade 9 NA



# National Assessment

- **Objective:** To measure Grade 5 mastery in literacy and numeracy
- Provide information on regional, gender, and geographical disparities to improve learning achievement in schools.
- Conducted in 2001, 2003, 2006 and 2008
- Produced a number of reports and some leaflets
- Stratified two stage sampling procedures employed to ensure representation of urban and rural schools, while learners selected across the grade
- Analysis based on descriptive statistics and regression analysis to identify factors affecting performance
- Achievement scores analysed using CTT



# National assessment - 2

- **Areas of further improvement:**
  - Update items use in Grade 5 assessment – i.e. increase item pool
  - Use of IRT based methods to enhance comparability of scores across time, e.g. equating scores
  - Application of advanced HLM methods to determine factors impacting on learner performance
  - Developing a conceptual (indicator) framework to guide questionnaire development and reporting
  - Long term implementation program
  - No information on non-cognitive outcomes
  - **Enhance dissemination** –
    - Reports for specific audiences - teachers, school heads, policy makers,
    - Policy briefs
    - Workshops with relevant officials
    - Newspaper articles

# SACMEOQ

- Conducted in collaboration with UNESCO by MoE
- Third round in 2007
- Produced two reports to date
- Challenges:
  - Limited dissemination of results
  - No additional research or analysis
  - Weak links between SACMEOQ and NA

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# Office of Standards - 1

- Role and responsibility clearly specified in policy:
- That is to establish, evaluate and promote the highest standards of quality in educational provision
  - Regular M&E classroom teaching
  - Ensures correct educational materials used
  - Ensures the dissemination of policy decisions and guidelines
  - Prepares inspection reports to provide information for decision making; and
  - Carries out general inspection of the school infrastructure.
- Structure decentralized at province and district level



# Office of Standards - 2

- **Challenges**
  - Inadequate use of available information for monitoring and evaluating functions
    - NB – set of key indicators and improve instruments
    - Increasing access to, and improving involvement of, standards officers at all levels of the system in the analysis, dissemination and effective utilization of examination results, continuous assessment and national assessment surveys.
  - Limited capacity/skills to analyse available information to support M&E function at different levels of the system
  - Improving reporting and feedback processes between and within school, district, province and national levels
  - Obtain consensus on indicator framework for the monitoring and evaluation of schools.



## Unknown issue/s

- To what extent does/will challenges like limited resources and capacity impact on the effective implementation of the national education assessment system in Zambia



## Next Steps

- Update and revise SD report
- Finalise Action Plan
  - Expand Action Plan to outline activities and timeframes
- Complete Grant Funding Requests
- Finalise logistics for TA





**Questions?  
Comments?**

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