Education

How systems can improve learning, economic & social outcomes.

Innovation Africa 2014

HP Industry Solutions Organization | Worldwide Education

What does their future look like?

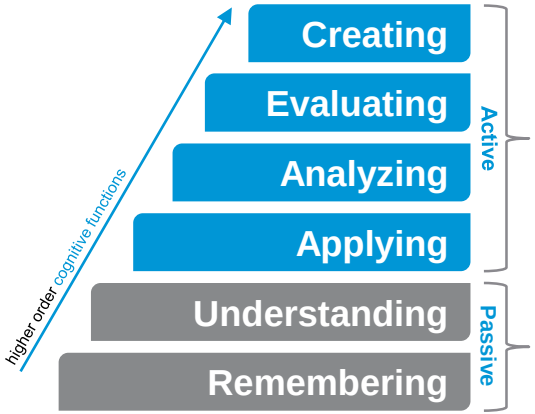
Global Competitive Diverse

Innovation Collaboration Critical Thinking

What skills will he need?

How do students learn?

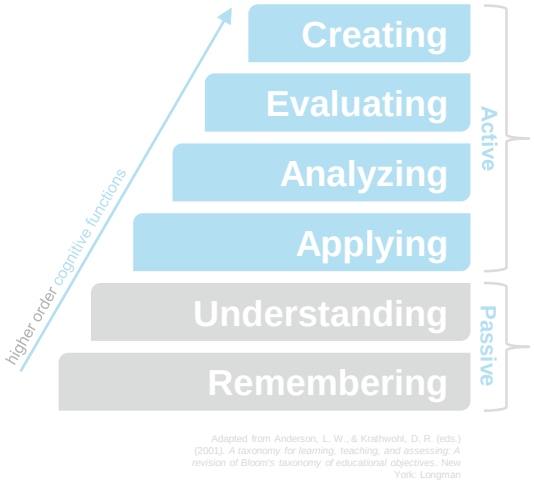
Visual Auditory Kinesthetic



Create

Consume

Adapted from Anderson, L. W., & Krathwohl, D. R. (eds.) (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman



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The most important skill schools can teach is learning itself.

What issues do education systems face?

- Budget
- Reporting
- Effective Technology Use
- Efficiency
- Assessment
- Graduation Rate
- Safety & Security
- Teacher Training
- Scheduling
- Facilities Management

What issues do governments face?

- Economic Development
- Jobs & Employment
- Diversification
- Intense Competition
- Unemployed Youth
- Manufacturing to Services
- Quality of Life
- Citizenry Participation
- Safety & Security
- Sustainable Resources

HP Education Vision

Equal, total access for all students to an education, regardless of gender, income or location.

Real learning based on national standards, teacher readiness and curricular transformation, not just games and social networks.

Measurable, meaningful outcomes for schools, students, communities and economies.

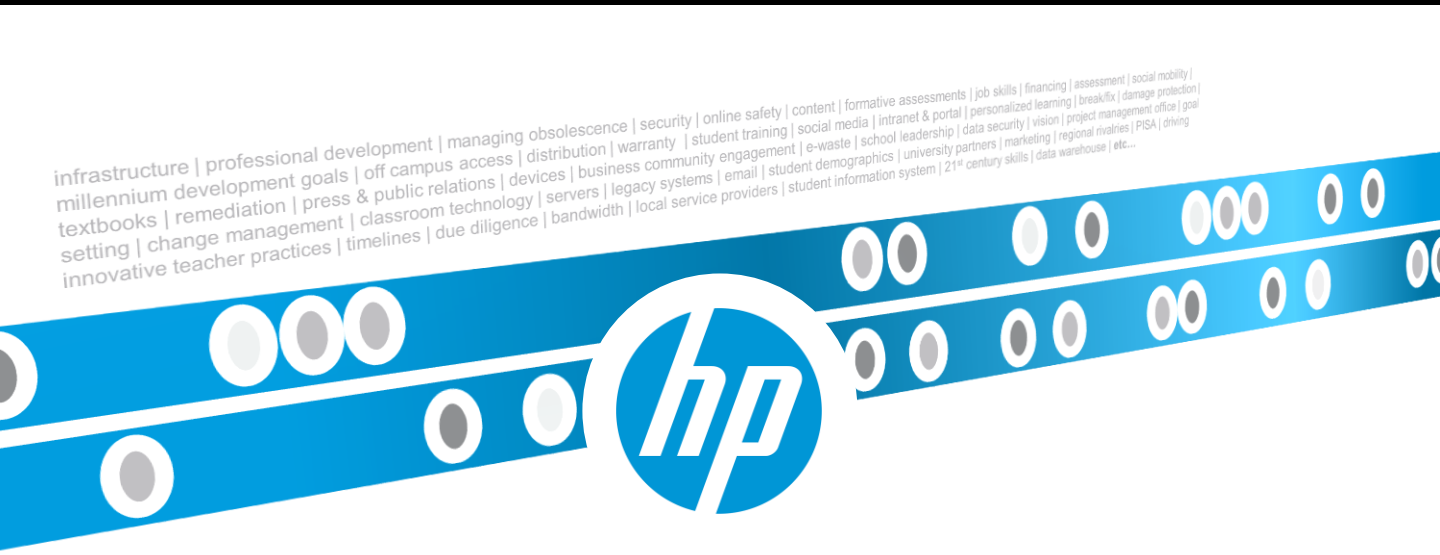
How should governments in Africa plan for 1:1?

What are the intended outcomes for your country?

Are their students, teachers & schools ready?

Will technology be used actively and academically?

How will you measure & communicate success?

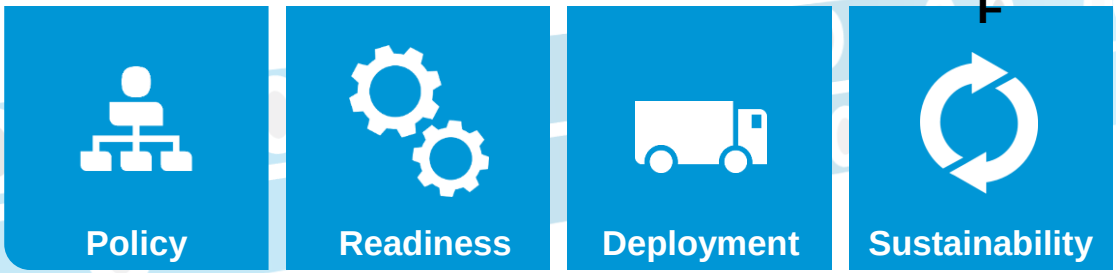


NET^F

National Education Technology Framework

National Education Technology Framework

NET F



Outcomes =

ECONOMIC LEARNING SOCIAL

gdp per capita | employment | student optimism | economic diversification | global competitiveness | participation in government | income per capita | peace | lower criminality | TIMSS | poverty mitigation | secondary completion rate | durable goods market efficiency | technological readiness | innovation | boys:girls in school | PISA math, science & reading | teacher satisfaction | interest in STEM careers

Policy

From national policy to student rules, alignment & clarity are critical

Setting desired outcomes, expectations and timing

Building a strategic vision is one of the first crucial steps in implementing technology-enabled education reform. Ensuring that each stakeholder group has a voice has been a consistent success factor for school systems. These national policies then need to trickle down to regions & schools, and finally to student usage.

National

Alignment with adjacent ministries
Identification of key stakeholders
Re-evaluation current policy & programs
Engaging all groups, including communities
Alignment with national strategic goals

Students & Families

Design student & families acceptable use policies
Social media / online behavior policies & rules
Acceptable content, websites and apps
Device damage, theft & loss policies including penalties

Regions & Schools

Alignment with current school policies & procedures
Create digital school policies
Design teacher & administration acceptable use contract
Design e-Curriculum and Content policies

Readiness

Cultural change and stakeholder engagement are critical, but often overlooked

Are your country's schools ready for technology-enhanced

The critical success factors for readiness include **Total Access** elements like network capacity and a strong server strategy, while **True Learning** readiness requires a solid learning management system, curricular relevance of digital content, and, most importantly, professional development for teachers. By far, the most underestimated factor for readiness is school culture: all stakeholders, from parents to principals, should define their own readiness via self-evaluation.

Culture

Teacher empowerment & enablement
Readiness for re-designed curricula
Systemic change management & readiness

Access

Wireless infrastructure surveys
Cloud access, storage and use testing
Select, provision and deploy device plan
Funding solution methods

Learning

E-Curriculum and content readiness
Learning Management System testing
Personalization & intervention trees
Teacher instructional & admin readiness

Deployment

HP NETA

Configuring, deploying and supporting millions of student and teacher devices

How will your nation ensure operational excellence and up-

Having distributed over 25 million tablets, notebooks, and PCs to schools during the last decade, HP offers schools sound advice. Two difficult decisions must be made prior to deployment: hardware and software. The hardware needs to be compatible, resilient, and connected. The software should enable collaboration, creativity, and critical thinking. Combined with cloud services like learning management systems, online remediation and practice, and student information systems, they form a **Learning Platform.**

Configure & Confirm

Select devices
Build software image
Design, build & test image
Build deployment plan

Deploy & Install

Train students & families
Out-of-box events
Manage packaging recycling
Establish “just in time” depots

Support

Establish break/fix policies & locations
Guides for school technology leaders
Data security best practices
Personal & online safety & security
Continuing professional development

Sustainability

National education technology deployments have a mixed record of success

How will your country prepare for sustained human capital

Beyond the initial ribbon-cutting, national education technology programs require a sustained effort to realize learning, economic and social gains. Activities include ensuring that technology obsolescence is managed, program support is sustained from all stakeholders and the projects are carefully and scientifically assessed for efficacy and constantly improved.

Manage Obsolescence

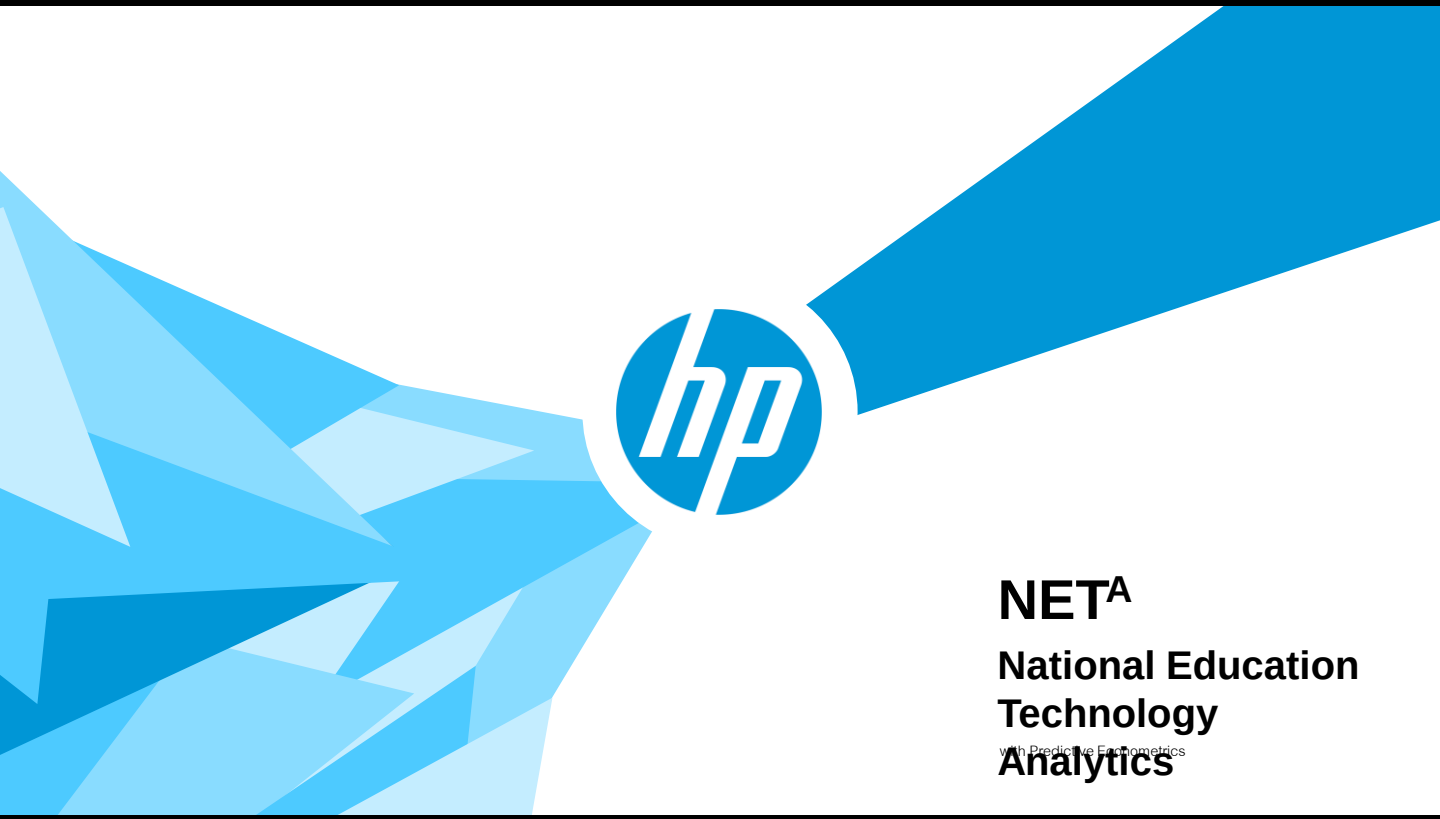
Finance with Refresh
Auto-updating OS
Manage device specifications
Reduce, Reuse, Recycle

Assessment

Create pre, post and interim assessment plans
Include social, economic and learning metrics
Connect the program to national progress
Align with national strategies & public benefits
Ensure active, effective use of technology

Build & Maintain Enthusiasm

Press and Public Relations planning
“Ribbon cutting” events
Public information portal
Cadenced assessment updates
Highlight progress & exceptional use



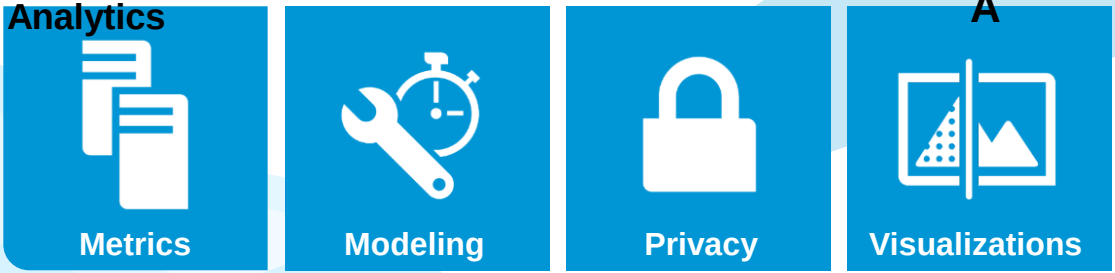
NET^{A}

National Education Technology Analytics

with Predictive Econometrics

National Education Technology Analytics

NET A



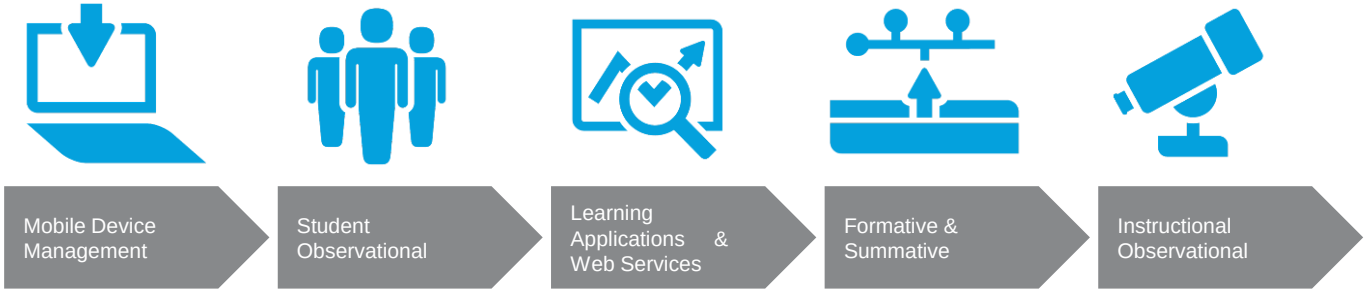
A near realtime view & analysis of access, learning & outcomes with advanced modeling that forecasts future impact

Metrics

Gathering **Access + Learning** data which inform **Outcomes**

What information is available to gather?

What data has a causal relationship with



Determining the proper evidence of learning & relationships among indicators

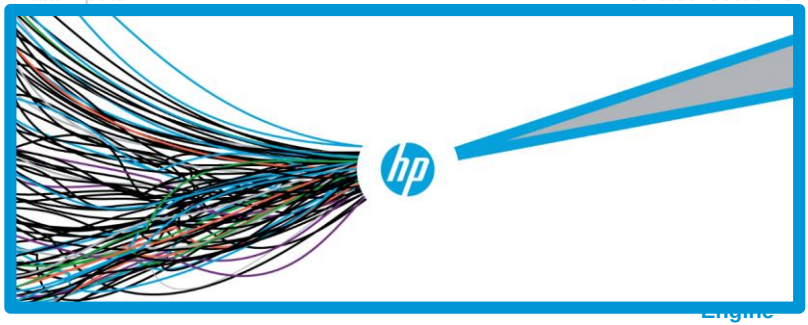
Econometric Modeling

Comparing Local Data to International Benchmarks

Who are your countries regional and categorical peers? How will your students fair as voters, employees

Data Inputs

Predicted Outcome



Engine

Meaningful Outcomes

Learning	Economic	Social
Global	Categorical	Regional

Benchmarks

World Bank: World Development Indicators
UNESCO/EFA Global Monitoring Report
UNICEF ChildInfo
WEF: Global Competitiveness Index
OECD: PISA Results in Math, Science & Reading

Privacy & Security Assurance

Ensuring Student, Faculty & Family Data is Private and Secure

There is no excuse for compromised student data. Prevent the possibility.

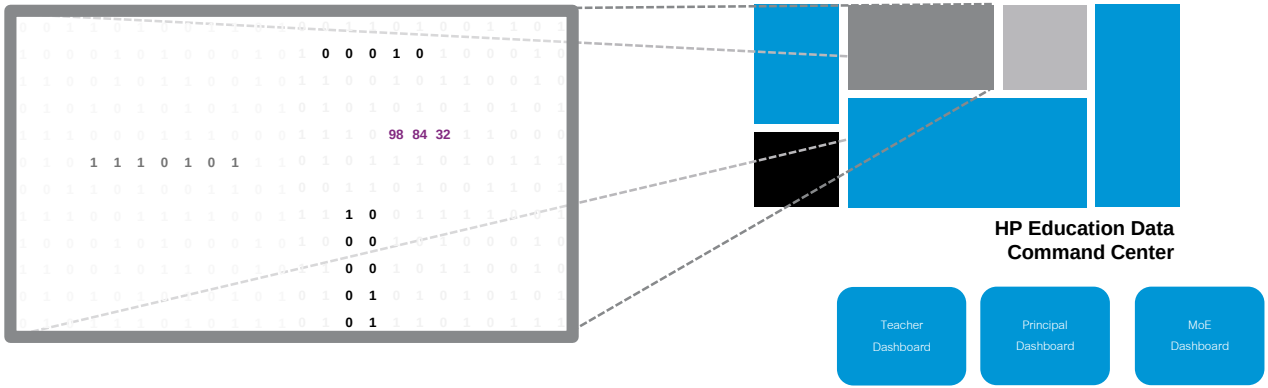
The key security parameters to protect student data

1. Client authentication that prevents unauthorized access to the database.
2. Connection encryption that prevents the interception of data
3. Authenticating encryption to confirm the identity of the server and the client.
4. Client authorization that controls what users can access and change in the database.

Dashboard Visualizations

A Window to the Future: Mapping Predicted Outcomes

Communicating complex calculations in an understandable, actionable format.



Republic of Rwanda

HP NET^{R} Findings Preview

Republic of Rwanda

HP NET^{R} Findings Preview

Social Readiness for Rwanda:

9.4

VERY HIGH*

** Highest on record for any country*

Most referenced outcomes

Learning: Career & Further Education Readiness
Economic: Migrate from agrarian-based to services-based economy
Social: Peace, sustainability & social justice

STUDENTS	TEACHERS	LEADERS
9.2	**9.1**	**10**
Education & Schooling Attitudes	Technology Engagement Score	ICT's Economic Impact

Thank you.