

SABER – ICT POLICY FRAMEWORK

## **THEMES & CHARACTERISTIC COMPONENTS OF ICT IN EDUCATION ('EDTECH') POLICIES**

### ***A Rubric for Quick Analysis***

The SABER-ICT policy framework was developed to assist policymakers as they attempt to analyze and benchmark their own policies on ICT use in education ('edtech') against international norms and those of comparator countries around the world, identifying key themes and characteristics.

Eight policy themes are commonly identified in educational technology policies around the world. These relate to (1) vision and planning; (2) ICT infrastructure; (3) teachers; (4) skills and competencies; (5) learning resources; (6) EMIS; (7) monitoring and evaluation; and (8) equity, inclusion, and safety.

Four stages of policy development can be identified related to each of these themes. Policies related to technology use in education change and evolve over time, often along a somewhat predictable path.

Policymakers may use this rubric to help benchmark the current state of related policy development in their country; aid in the development of new policies; anticipate potential future policy directions; and analyze policies from other countries.

This rubric is an excerpt from:

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full document available at: <https://openknowledge.worldbank.org/handle/10986/26107>

<b>1. Vision and Planning</b> (related SABER domain: Engaging the Private Sector, 1.5)					
	<i>stage:</i>	<i>Latent ●○○○</i>	<i>Emerging ●●○○</i>	<i>Established ●●●○</i>	<i>Advanced ●●●●</i>
1.1	<i>Vision and overall goals</i>	<ul style="list-style-type: none"> <li>•No policies on ICT in education</li> <li>•Introduce ICT into select educational processes and activities</li> </ul>	<ul style="list-style-type: none"> <li>•Draft policy on ICT in education</li> <li>•Integrate ICT into select educational processes and activities</li> </ul>	<ul style="list-style-type: none"> <li>•The policy on ICT in education has been approved/draft serving as a de facto policy</li> <li>•Integrate ICT in education at all education levels</li> </ul>	<ul style="list-style-type: none"> <li>•Explicit policy guidance related to ICT/education topics; ICT in education policy is fully operationalised and seeks to transform learning environments, teaching practices and administrative processes with the aid of ICTs</li> </ul>
1.2	<i>Linkages between ICT in education policy and other sectoral policies</i>	<ul style="list-style-type: none"> <li>•No linkages to ICT/education issues in other policies</li> </ul>	<ul style="list-style-type: none"> <li>•No/few linkages to ICT/education issues in other policies</li> </ul>	<ul style="list-style-type: none"> <li>•Many linkages between ICT policy and other education policies</li> </ul>	<ul style="list-style-type: none"> <li>•Strong, explicit linkages between ICT policy and other sectoral policies</li> </ul>
1.3	<i>Public funding and expenditure for ICT in education</i>	<ul style="list-style-type: none"> <li>•No or minimal regular public expenditure for ICT in education</li> </ul>	<ul style="list-style-type: none"> <li>•Occasional, non-regular public expenditure on ICT in education,</li> </ul>	<ul style="list-style-type: none"> <li>•Regular public expenditure on ICT in education, on infrastructure and some non-infrastructure items</li> </ul>	<ul style="list-style-type: none"> <li>•Regular public expenditure on ICT in education on infrastructure and many non-infrastructure items</li> </ul>
1.4	<i>Institutional arrangements</i>	<ul style="list-style-type: none"> <li>•No dedicated unit/agency for ICT in education</li> </ul>	<ul style="list-style-type: none"> <li>•Only a small number of people with related dedicated responsibility, plan to set up a unit/ agency on ICT in education</li> </ul>	<ul style="list-style-type: none"> <li>•Dedicated, professionally staffed unit/ agency for ICT in education</li> </ul>	<ul style="list-style-type: none"> <li>•Dedicated, professionally staffed focal unit/agency charged with implementing policies on ICT in education actively coordinating with other organizations</li> </ul>
1.5	<i>Public Private Partnerships (PPP) on ICT in education</i>	<ul style="list-style-type: none"> <li>•No PPPs enabling or supporting ICT/education initiatives</li> </ul>	<ul style="list-style-type: none"> <li>•Some PPPs enabling or supporting ICT/education initiatives</li> </ul>	<ul style="list-style-type: none"> <li>•Commitment to coordinating PPP initiatives related to ICT/education</li> </ul>	<ul style="list-style-type: none"> <li>•Explicit commitment to integrating, coordinating and monitoring PPP initiatives related to ICT/education</li> </ul>



2. ICT Infrastructure (related SABER domain: none)					
	stage:	Latent ●○○○	Emerging ●●○○	Established ●●●○	Advanced ●●●●
2.1	<i>Electricity supply</i>	<ul style="list-style-type: none"> <li>•School electrification is an acute issue across the system</li> </ul>	<ul style="list-style-type: none"> <li>•School electrification is an issue only in rural areas</li> </ul>	<ul style="list-style-type: none"> <li>•School electrification is an issue only at the margins</li> </ul>	<ul style="list-style-type: none"> <li>•School electrification is not an issue</li> </ul>
2.2	<i>ICT equipment &amp; related networking infrastructure</i>	<ul style="list-style-type: none"> <li>•Few schools have computers or related devices</li> <li>•Few schools connected to the Internet</li> <li>•e-Waste issues not considered</li> </ul>	<ul style="list-style-type: none"> <li>•Most schools have computers and/or other related devices (usually in dedicated computer labs)</li> <li>•Most schools connected to the Internet (slow connections)</li> <li>•Some use of digital projection equipment</li> <li>•e-Waste issues considered</li> </ul>	<ul style="list-style-type: none"> <li>•All schools have reliable broadband Internet access and computing facilities</li> <li>•Some computers in classrooms</li> <li>•Widespread use of digital projection equipment</li> <li>•Some teachers provided with computers or related devices</li> <li>•Computing facilities being introduced at scale in libraries, science labs and/or other venues inside schools</li> <li>•Some e-Waste policies in place</li> </ul>	<ul style="list-style-type: none"> <li>•Access to computing resources available in multiple places in schools: labs, classrooms, libraries, mobile</li> <li>•Robust broadband wireless and wired networks available for student and faculty use, support for BYOT</li> <li>•All teachers have on-demand access to the Internet</li> <li>•Access to computers and the Internet outside school provided to certain student populations</li> <li>•Comprehensive e-Waste policies in place</li> </ul>
2.3	<i>Technical support &amp; maintenance</i>	<ul style="list-style-type: none"> <li>•No reliable mechanism for systematic maintenance for ICT infrastructure</li> <li>•Maintenance costs are not budgeted</li> </ul>	<ul style="list-style-type: none"> <li>•Technical support mechanisms are insufficient / ad hoc</li> <li>•Maintenance costs are not budgeted regularly</li> </ul>	<ul style="list-style-type: none"> <li>•Generally sufficient, systematic technical support mechanisms in place</li> <li>•Maintenance costs are budgeted regularly</li> </ul>	<ul style="list-style-type: none"> <li>•Robust technical support mechanisms in place and equipment maintenance is not an acute issue</li> <li>•Maintenance costs are sufficient and budgeted regularly</li> </ul>



3. Teachers (related SABER domain: Teachers)					
	stage:	Latent ●○○○	Emerging ●●○○	Established ●●●○	Advanced ●●●●
3.1	<i>Teacher training and professional development (including pre-service and in-service) on ICT – related topics</i>	<ul style="list-style-type: none"> <li>•Teachers do not receive ICT-related training</li> </ul>	<ul style="list-style-type: none"> <li>•Teachers receive one-time technical training on basic computer skills</li> </ul>	<ul style="list-style-type: none"> <li>•Teachers receive training on the pedagogical use of ICTS, and have access to related ongoing technical and pedagogical support , at both the pre-service and in- service levels</li> </ul>	<ul style="list-style-type: none"> <li>•ICT use and related pedagogical training and support is integral to regular, on-going programs aimed at providing targeted pre- service and ongoing professional development opportunities for teachers</li> </ul>
3.2	<i>ICT-related teacher competency standards</i>	<ul style="list-style-type: none"> <li>•No ICT-related teacher competency standards</li> </ul>	<ul style="list-style-type: none"> <li>•A basic level of ICT - related competency standards for teachers have been defined</li> </ul>	<ul style="list-style-type: none"> <li>•ICT-related competency standards have been introduced, are in widespread use, and are linked to some certification scheme(s)</li> </ul>	<ul style="list-style-type: none"> <li>•ICT-related competency standards for teachers and related certifications are in place, and integrated into general competency standards for teachers</li> </ul>
3.3	<i>Teacher networks/ resource centers for teachers</i>	<ul style="list-style-type: none"> <li>•No online teacher support network</li> <li>•No ICT-related resource centers for teachers</li> </ul>	<ul style="list-style-type: none"> <li>•Some online teacher support mechanisms in place</li> <li>•ICT-related resource centers for teachers are being set up</li> </ul>	<ul style="list-style-type: none"> <li>•Online teacher support network in use</li> <li>• ICT-related resource centers for teachers provide support and advice</li> </ul>	<ul style="list-style-type: none"> <li>•Online-and/or mobile teacher support network in widespread use</li> <li>•ICT-related resource centers are funded and play important positive roles in supporting teachers</li> </ul>
3.4	<i>School leadership training, professional development and competency standards</i>	<ul style="list-style-type: none"> <li>•School leaders receive no ICT-related training</li> </ul>	<ul style="list-style-type: none"> <li>•School leaders receive awareness-raising training on ICT-related topics</li> </ul>	<ul style="list-style-type: none"> <li>•School leaders receive ICT-related training, ICT-related competency standards for school leaders are articulated</li> </ul>	<ul style="list-style-type: none"> <li>•ICT-related training for school leaders is readily available and related competency standards are in place</li> </ul>



4. Skills and competencies (related SABER domain: Workforce Development)					
	<i>stage:</i>	<i>Latent</i> ●○○○	<i>Emerging</i> ●●○○	<i>Established</i> ●●●○	<i>Advanced</i> ●●●●
4.1	<i>ICT literacy/digital competency</i>	•No ICT literacy/digital competency efforts	•Some, mostly low level, ICT literacy/digital competency efforts	•Wide-spread ICT literacy/digital competency efforts •Certification	•Digital competency is viewed as an essential 21 <sup>st</sup> century skills •ICT-related competency frameworks defined beyond just technical skills
4.2	<i>Non-formal education/lifelong learning/vocational education</i>	•No ICT-enabled non-formal education/ lifelong learning is provided	•Some ICT-enabled non-formal education/ lifelong learning is provided	•ICT-enabled non-formal education/ lifelong learning is wide-spread	•There is an robust integrated vision for lifelong learning enabled by ICT



5. Learning resources (related SABER domain: none)					
	stage:	Latent ●○○○	Emerging ●●○○	Established ●●●○	Advanced ●●●●
5.1	Digital content/digital learning resources (DLR) and curriculum	<ul style="list-style-type: none"> <li>•No digital content/no DLR are used in teaching</li> </ul>	<ul style="list-style-type: none"> <li>•Some digital content/ DLR are available</li> <li>•Digital content is available in some classrooms</li> </ul>	<ul style="list-style-type: none"> <li>•DLR are widely available, some explicit linkages to curricular objectives</li> <li>•On-line education portal is available</li> <li>•Digital content is available in most classrooms</li> <li>•Some attention is paid to intellectual property issues (e.g. around OER issues)</li> <li>•Some access to DLR outside of school</li> </ul>	<ul style="list-style-type: none"> <li>•Teachers and students access digital content/DLR resources linked to specific curricular and learning objectives, anytime anywhere, using a range of devices and platforms</li> <li>•Teachers and students regularly use, develop- re-use and re-mix develop digital teaching and learning resources</li> <li>•‘Advanced’ digital learning resources (e.g. robotics, simulations, games) are used in teaching</li> <li>•Intellectual property issues are well considered</li> <li>•Users involved in evaluating and assessing quality of digital learning resources</li> </ul>



**6. Education management information systems (EMIS)** (related SABER domain: EMIS)

	<i>stage:</i>	<i>Latent</i> ●○○○	<i>Emerging</i> ●●○○	<i>Established</i> ●●●○	<i>Advanced</i> ●●●●
6.1	<i>ICT use in management of the education system (EMIS)</i>	<ul style="list-style-type: none"> <li>•Little/no mention of EMIS</li> </ul>	<ul style="list-style-type: none"> <li>•EMIS use coordinated centrally by ministry, minimal exchange of data with individual schools</li> </ul>	<ul style="list-style-type: none"> <li>•EMIS in widespread use for a limited number of data points, primarily to feed central education system database</li> </ul>	<ul style="list-style-type: none"> <li>•National EMIS uses ICT to collect, process and store information produced by various levels of the education system and to disseminate data to various level of the education systems as a key decision tool, accessible via multiple channels (e.g. Internet, mobile devices), with some access to EMIS data available to the general public and with robust security and data privacy safeguards in place</li> </ul>



**7. Monitoring and evaluation, assessment, research and innovation** (SABER domain: Student Assessment)

	<i>stage:</i>	<i>Latent</i> ●○○○	<i>Emerging</i> ●●○○	<i>Established</i> ●●●○	<i>Advanced</i> ●●●●
7.1	<i>Monitoring ICT use and evaluating its impact</i>	<ul style="list-style-type: none"> <li>•Little monitoring; what monitoring exists is irregular, incomplete and relates primarily to access to infrastructure</li> <li>•Impact of ICT use is not measured</li> </ul>	<ul style="list-style-type: none"> <li>•Most monitoring is of inputs</li> <li>•Impact of ICT is measured irregularly; most impact measurements related to changes in attitudes and perceptions of changes in activity</li> </ul>	<ul style="list-style-type: none"> <li>•Regular monitoring of system inputs</li> <li>•Impact of ICT is measured regularly; some measures relate to learning outcomes</li> <li>•Some regular or systematic independent M&amp;E of ICT/education activities carried out</li> </ul>	<ul style="list-style-type: none"> <li>•Robust M&amp;E system is in place to measure the use of ICT across a variety of areas and related impacts, including learning outcomes</li> <li>•Policy choices and decisions related to ICT informed by rich evidence base</li> <li>•M&amp;E function or activities related to ICT/education largely independent of project implementers</li> </ul>
7.2	<i>ICT use in assessment</i>	<ul style="list-style-type: none"> <li>•ICT is not used in assessments</li> </ul>	<ul style="list-style-type: none"> <li>•ICT is utilized by students and teachers in formative assessment activities to a minor extent</li> </ul>	<ul style="list-style-type: none"> <li>•ICT is used in formative assessments in most schools to some extent</li> <li>•ICT used in some national or regional summative assessment activities</li> </ul>	<ul style="list-style-type: none"> <li>•ICT-based assessments widely used, at the formative and summative levels, including as part of national or school leaving examinations</li> </ul>
7.3	<i>Innovation, research and development</i>	<ul style="list-style-type: none"> <li>•There is no/minimal R&amp;D activities innovative pilots related to ICT/education</li> </ul>	<ul style="list-style-type: none"> <li>•Irregular / ad hoc activities related to R&amp;D or innovative pilots , little impact on planning</li> </ul>	<ul style="list-style-type: none"> <li>•Regular programs of R&amp;D and innovative pilot activities , some impact on planning</li> </ul>	<ul style="list-style-type: none"> <li>•Special budget or fund for R&amp;D activities</li> <li>•Centers of excellence for R&amp;D of ICT use and services</li> <li>•R&amp;D and innovation central to planning – it is part of the system</li> </ul>





**8. Equity, inclusion and safety** (SABER domains: Equity and Inclusion; Resilience)

	<i>stage:</i>	<i>Latent</i> ●○○○	<i>Emerging</i> ●●○○	<i>Established</i> ●●●○	<i>Advanced</i> ●●●●
8.1	<i>“Pro-equity” provisions and approaches</i>	<ul style="list-style-type: none"> <li>•“Pro-equity” provisions and approaches related to ICT/education listed below are not covered:</li> <li>- <i>gender</i>;</li> <li>- <i>rural/urban divides</i>;</li> <li>- <i>low-income communities</i>;</li> <li>- <i>special needs students</i>;</li> <li>- <i>minority, cultural, religious, linguistic and/or indigenous groups</i>;</li> <li>- <i>gifted students</i>;</li> <li>- <i>older learners</i></li> </ul>	<ul style="list-style-type: none"> <li>•Some of the following provisions and approaches related to ICT use in education are covered:</li> <li>- <i>gender equality</i>;</li> <li>- <i>rural/urban divides</i>;</li> <li>- <i>low-income communities</i>;</li> <li>- <i>special needs students</i>;</li> <li>- <i>indigenous groups</i>;</li> <li>- <i>older learners</i></li> </ul>	<ul style="list-style-type: none"> <li>•Most of the following “pro-equity” provisions or approaches related to ICT use in education are addressed:</li> <li>- <i>gender equality</i>;</li> <li>- <i>rural/urban divides</i>;</li> <li>- <i>low-income communities</i>;</li> <li>- <i>special needs students</i>;</li> <li>- <i>indigenous groups</i>;</li> <li>- <i>gifted students</i></li> <li>- <i>older learners</i></li> </ul>	<ul style="list-style-type: none"> <li>•All “pro-equity” provisions or approaches related to ICT use in education are addressed:</li> <li>- <i>gender equality</i>;</li> <li>- <i>rural/urban divides</i>;</li> <li>- <i>low-income communities</i>;</li> <li>- <i>special needs students</i>;</li> <li>- <i>indigenous groups</i>;</li> <li>- <i>gifted students</i></li> <li>•Specialized software is available for special groups at all education institutions at all levels</li> <li>•There are teachers qualified to provide ICT-assisted instruction to special needs students</li> </ul>
8.2	<i>Digital ethics, safety and citizenship</i>	<ul style="list-style-type: none"> <li>•No policies or legislation on child digital safety issues, education system does not play a role in educating children about related risks</li> </ul>	<ul style="list-style-type: none"> <li>•Legislation covers some aspects of child digital safety, largely focusing on law enforcement issues and filtering</li> </ul>	<ul style="list-style-type: none"> <li>•Legislation covers most aspects of child digital safety, digital ethics and citizenship issues are emerging areas of attention</li> </ul>	<ul style="list-style-type: none"> <li>•Legislation covers all aspects of digital safety, issues are digital ethics and citizenship are integrated into considerations of ICT use</li> </ul>

Cross-cutting themes (SABER domains: ECD, x.3; Tertiary Education, x.4)					
	stage:	Latent ●○○○	Emerging ●●○○	Established ●●●○	Advanced ●●●●
x.1	<i>Distance education / distance learning</i>	• No/minimal distance education/ training opportunities enabled by ICT	• Some distance education/ training opportunities enabled by ICT	• Many distance education/ training / learning opportunities enabled by ICT provided, partially integrated or 'blended' with more traditional educational delivery practices	• Access to distance education / training / learning opportunities enabled by ICT widespread, closely integrated or 'blended' with all other traditional methods of educational service delivery
x.2	<i>Mobiles</i>	• Not considered – possibly deterred	Some attention to mobiles (perhaps only one kind, e.g. only laptops)	• Specific emphasis or attention to use of some types of mobile devices and emerging levels of scale	• Potential for specific advantages or affordances of mobile technologies to be realized, as one tool among many technology choices, including phones, laptops, e-readers, tablets, and a variety of handheld devices
x.3	<i>ECD</i>	• No policies	• ICT use at ECD level mentioned	• ICT use at ECD level considered	• Coherent policies for ICT use in support of ECD activities
x.4	<i>OER</i>	• No policies	• OER mentioned	• OER considered as part of policy	• Clear IP framework (including user generated) • OER repository • Clear targeted directives
x.5	<i>Community involvement</i>	• Not considered	• Some mention of community involvement	• Targeted involvement with specific community members	Engagement with various community stakeholder groups considered integral
x.6	<i>Data privacy</i>	• Not considered	• Data privacy mentioned	• Emerging attention to data privacy issues	• Clear policies related to data privacy, including data management, ownership of data, and safeguards

ECD = Early Childhood Development | OER = Open Educational Resources

