

EdTech Readiness Index

The logo graphic consists of ten vertical bars of varying heights, arranged in a slightly curved line. The bars are blue, with the fourth bar from the left being a darker shade of blue.

Nepal: ETRI Indicators and Results

July 2023



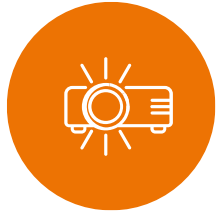
What is the EdTech Readiness Index?

- The **EdTech Readiness Index (ETRI)** is a global tool that assesses the integration of education and technology (EdTech) into the broader education system by collecting country-level data on policies and practices.
- ETRI identifies and measures the **different enabling factors** that are required for EdTech to be effective (e.g., technical infrastructure, and human and technical capacity).
- ETRI provides valuable information for governments to **identify areas for improvement** and **assess the overall readiness** of countries in implementing effective EdTech policies.



EdTech Readiness Index

6 Pillars to Understand the System



School Management



Teachers



Students



Devices



Connectivity



Digital Resources

PRACTICE

- Strategy
- Leadership
- Prioritization

- Self-Efficacy
- Use – planning
- Use – teaching

- Self-Efficacy
- Use – Inside
- Use – Outside

- Student access
- Student use
- Tech Support

- Connectivity
- Student access
- Quality

- Access
- Use
- Quality

POLICY

- Responsibility
- Guidance
- Support

- Standards
- Support
- Evaluation

- Framework
- Curriculum
- Assessment

- Standards
- Monitoring
- Responsibility

- Plan
- Monitoring
- Support system

- Guidance
- Strategy
- Standards

Measuring Practices and Policy

Two surveys

We look at **practices** – activities and conditions associated with the use of digital technologies in the school, and **policies** – how the system defines, articulates and implements strategies to foster desired practices.



School Survey

- Related to ICT in school practices and *de facto* policy implementation at the school level
- Carried out in August 2022 at **327 schools** – nationally representative
- Administered remotely to **school principals**
- Approx. 47-51 questions related to six pillars
- Grade 5 and 9, urban/rural, public/private



Policy Survey

- Related to ICT *de jure* policies in education.
- Completed by **consultant expert** who carried out a legislative review.
- This is **self-administered** and shared electronically.
- Approx. **43 questions** related to the 6 pillars of the index, including a **brief context report**.



Results are summarized for key indicators and compared

- Answers are aggregated into indicators and sub-indicators
 - Scored between 1 (worst) to 5 (best)
- Results are color coded to understand strengths and weaknesses of the system
 - The thresholds used are only indicative at this stage and will be reassessed after the ETRI pilot phase (2023)
- Results are compared between:
 - **Practices** (what is implemented in the schools) and **de facto** policies (how policies are understood on the ground)
 - **De facto** policies (how policies are understood on the ground) versus **de jure** policies (what policies/regulations/strategies are defined by government)
- Analysis is included in bubbles on the slides

Good
Score: 4–5

Data indicate that performance and the quality of the practice/policy are satisfactory to great extent.

Caution
Score: 3–3.99

Data indicate that performance and the quality of the practice/policy can be improved. Although is not in a critical stage, a series of actions will be needed to achieve a satisfactory level.

Needs Improvement
Score: 1–2.99

Data indicate that performance and the quality of the practice/policy are not satisfactory, and a series of improvements are needed.

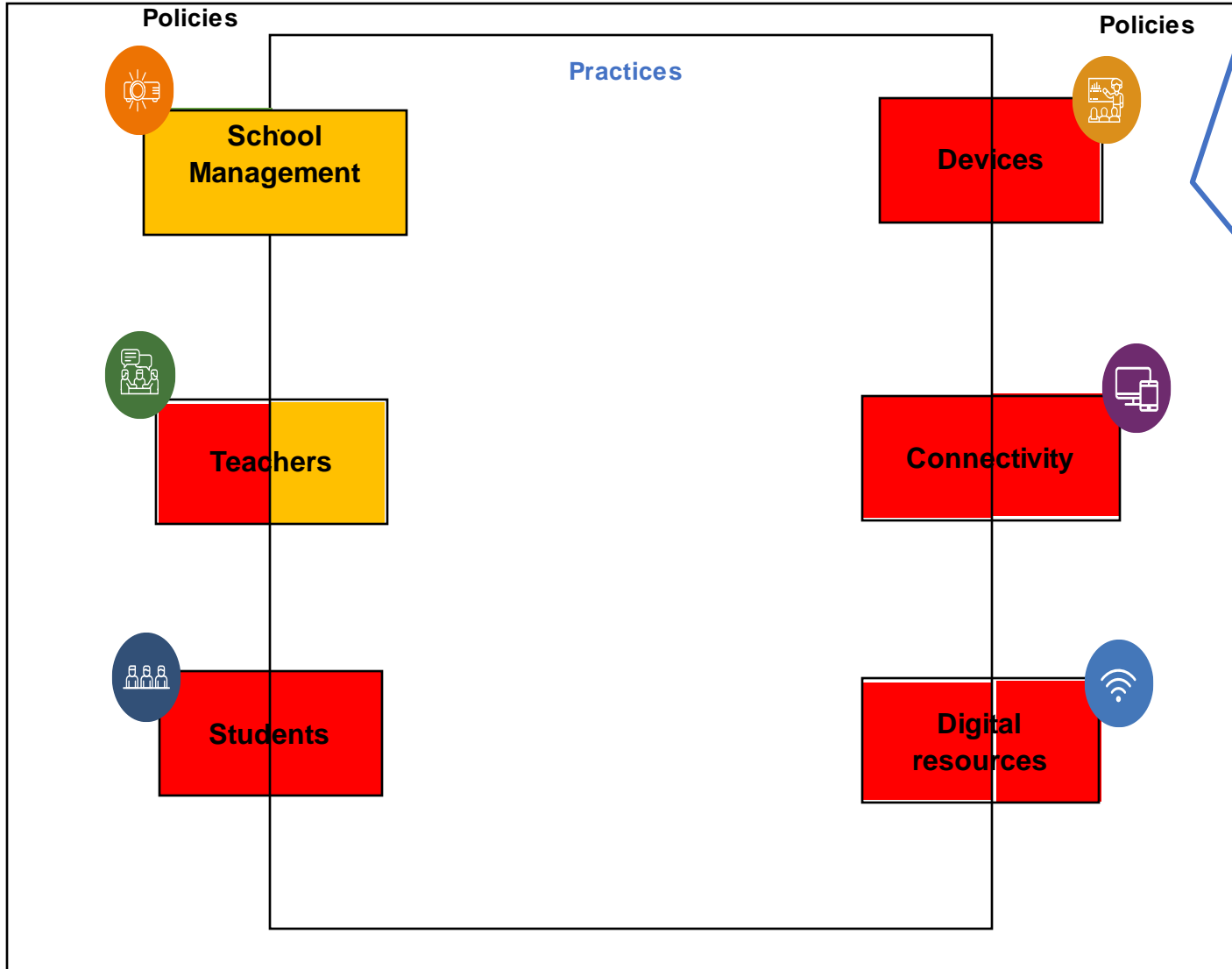


Results



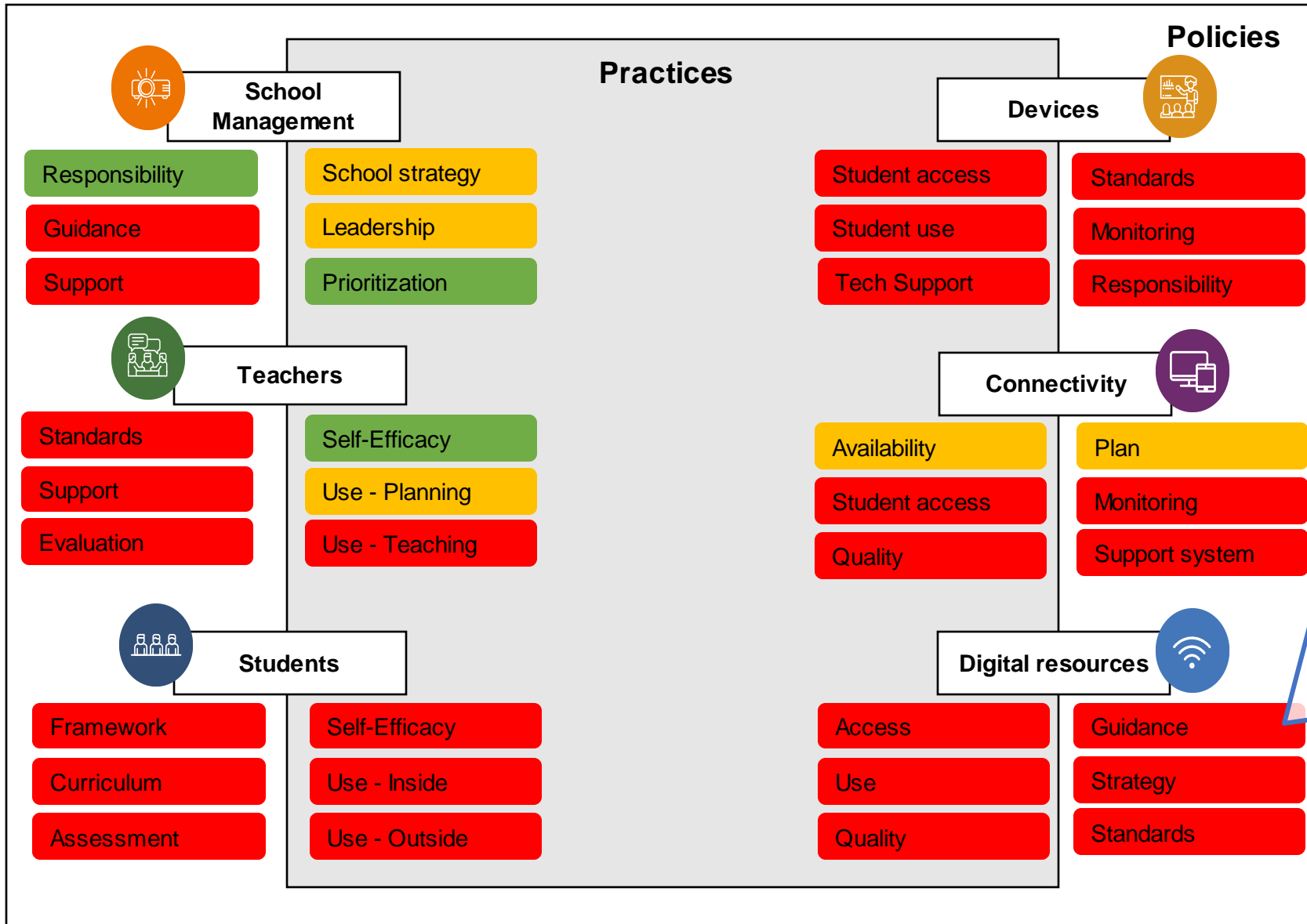


Country level results



- Results show progress in **School Management** and in both policies and practices, but there is still room for improvement. The findings indicate the presence of policy frameworks and guidance, as well as the inclination towards developing ICT strategies and prioritization at the practical level.
- At the policy level, both **Teachers and Students** exhibit low readiness due to the absence of standards, limited integration of ICT activities in the curriculum, and lack of support systems and assessments for ICT competences. While Teachers display high levels of self-efficacy and some utilization of ICT for lesson planning, the use of ICT for teaching and assessment remains significantly limited, resulting in very low levels of ICT utilization among students.
- The implementation of the **Devices, Connectivity and Digital Resources pillars** exhibits limited development in both policies and practices. The absence of standards, guidance and support systems at the policy level, affect the access and use at the practice level.
- Overall, these results indicate that in order to improve the EdTech Readiness of Nepal, the country need to work on improving all Pillars, but specially five of them.

Country level results



Examining the sub-pillar levels, sheds light on specific areas that require improvement.

In terms of **practices**, the weakest points are:

- Use of EdTech by Teachers for teaching (compared to planning and management).
- Utilization of EdTech by Students, both inside and outside of the classroom.
- Student access to Devices and Connectivity, and internet connection quality.
- Access and use of Digital Educational Resources (DER) along with the quality of DERs.

Policies could be improved by:

- Providing guidance and support for incorporating ICT into teaching and learning.
- Establishing teacher standards (Competency framework), providing support through teacher training, and implementing evaluations to measure Teachers' ICT competencies.
- Establishing standards for students and implementing assessments for their ICT skills.
- Developing guidance, strategies and standards for digital resources, devices and connectivity.



School Management

Practices

School strategy 3.7

- 78% of school principals report having a digital strategy or a plan to incorporate the use of ICT into teaching and administration at their school

Leadership 3.8

- % of school principals who report
- Involving teachers in the development of plan to apply ICT in the school: 76%
 - Supporting teachers in trying out new ways of teaching with ICT: 86%
 - That there are discussions on the advantages and disadvantages of teaching and learning with ICT: 89%

Prioritization 4.2

- % of school principals who report ensuring students have the skills to use ICT is important for
- basic computer functions: 87%
 - accessing and using information: 93%
 - using digital devices safely and appropriately: 84%
 - improving their learning generally 91%

Policies

Responsibility 4.8

- 95% of principals reported that responsibilities for integrating ICT use into schools' strategic plans are assigned (at the national, sub-national/local or school levels)

Guidance 2.8

- 47% of school principals aware of guidelines to incorporate ICT into teaching and learning activities
- 43% of school principals find useful guidelines to incorporate ICT into teaching and learning activities

Support 2.2

- 37% of school principals report attending or participating in a training on the use ICT in school over the last 12 months
- 21% of school principals report the training was required

- *Overall, School ICT Strategy and Leadership seems to be moving toward a better adoption of ICT at their schools.*
- *Most school principals report that the Prioritization of ICT skills, along with the Responsibilities for the integration of ICT in schools' strategic plan are clear.*
- *Areas for improvement are providing better Guidance for incorporating ICT in teaching and learning and Support in the form of teacher training on the use of ICT.*



Teachers

Practices

Self-Efficacy 4.5

% of teachers who report being confident in their own ability to:

- Contribute to online discussion/forum: 82%
- Produce presentations for use in class: 77%
- Prepare lessons in which students use ICT: 74%
- Use spreadsheet for keeping records: 79%
- Assess student learning using ICT: 80%
- Collaborate with colleagues using shared resources: 80%

Use – Planning 3.0

% of teachers reporting doing the following using digital devices while preparing/planning their lessons

- Searching for content to use during class: 43%
- Sharing educational content with other teachers: 39%
- Participating in project developed with other: 23%
- Preparing presentations to use for teaching: 47%
- Expanding your knowledge about the use of ICT: 45%
- Carrying out administrative class management: 26%

Use – Teaching 2.0

% of teachers reporting doing the following during direct class instruction:

- Using ICT to search for information for discussions: 20%
- Using ICT to present information during instruction: 19%
- Using classroom management tools: 11%
- Asking students to search for information: 17%
- Asking students to present results using ICT: 12%
- Using digital tools to assess students' learning: 13%

Policies

Standards 2.2

- 33% of teachers report that there is a guiding document that defines the digital competences that a teacher is expected to have or develop
- 29% of teachers find the guiding document useful

Support 2.4

% of teachers reporting that their initial training included the following:

- Learning how to use ICT generally: 44%
 - Learning how to use ICT in teaching: 45%
- 28% of teachers report participating in professional development activities on using ICT in teaching and learning practices, which included unofficial trainings or official trainings with optional or required attendance

Evaluation 1.9

- 23% of teachers report having been formally evaluated on their use of ICT during the last school year

- *Overall, teachers feel confident of using ICT to contribute to forums and share resources, produce presentations, and assess student learning.*
- *The utilization of ICT for lesson preparation and planning among teachers is relatively uncommon, and the use of ICT for teaching purposes is even more infrequent.*
- *Areas for improvement are related with ICT policies and standards for digital competences. Investing in the development and utilization of guidance documents on digital competencies would prove advantageous.*
- *Training on how to use ICT could be improved, as less than half of the respondents reported receiving training on how to use ICT for teaching purposes. Additionally, it seems that these training programs are not mandatory.*

Practices

Self-Efficacy 2.5

% of teachers who report thinking that at least half of the students can perform the following independently:

- Open a new tab in a browser: 46%
- Save a photo that they find online: 52%
- Find a website they have visited before: 49%
- Check if information found online is true: 24%

Use – Inside 1.9

% of teachers who report students use digital devices while in school in most/every lessons for:

- Searching for information for lesson exercises: 45%
- Communicating with students on projects: 36%
- Sharing assignment results with students: 36%
- Submitting completed work for assessment: 32%
- Evaluating information resulting from a search: 32%
- Producing document, presentation, or videos: 32%

Use – Outside 2.2

% of teachers who believe students use digital devices outside of school at least once week for:

- Browsing the Internet for schoolwork: 52%
- Communicating with teacher (social networks or email): 36%
- Doing homework on a digital device: 22%
- Using learning apps/websites: 37%

Policies

Framework 1.8

- 23% of teachers report that there a guiding document defining the digital competences that a student is expected to have or develop

Curriculum 2.9

- 48% of teachers believe that the educational curriculum recommends using ICT in teaching

Assessment 2.3

- 32% of teachers report that the digital competencies of students were formally assessed

- *In terms of **practices**, most teachers report that students' self-efficacy to perform different activities using ICT was relatively low.*
- *Low levels of self-efficacy are likely connected to the low levels of use of digital devices inside and outside the school.*
- *According to teachers, use of devices inside and outside of school is mostly for searching for information (45%) and browsing for schoolwork (52%).*
- *In terms of **policies**, most teachers do not know of or use a guiding document (framework) defining students ICT competencies (23%). This is aligned with the fact that only 32% of teachers formally assess the digital competencies of their students. This highlights the importance of having an ICT framework.*
- *Slightly less than half of respondents (48%) report that the education curriculum recommends using ICT for teaching.*



Practices

Student Access 2.8

- Share of working digital devices that are available to students for learning: 62%
- Proportion of school principals that agree that there is a sufficient number of digital devices for instruction: 22%

Student Use 2.1

- Less than 4% of school principals report that the school has digital devices that are adapted for the use of students with disabilities
- 58% of school principals report that digital devices available at the school were used by students in class at least once or twice a week

Tech Support 2.3

- 26% of school principals agree that there is sufficient technical support to maintain ICT resources so that they are fully functional

Policies

Standards 2.1

- 26% of school principals know if there are standards in place which require that students in all schools have access to functioning digital devices (PCs, laptops, tablets and/or other digital devices)

Monitoring 2.0

- % of school principals who report that there someone or any institution or mechanism that monitors:
- that all schools have access to functioning digital devices: 29%
 - If digital devices and connectivity are used by the students: 21%

Responsibility 1.7

- 18% of school principals report that there is a government legislation that assigns responsibility for maintaining school ICT infrastructure and for providing technical support

- *Student access to devices is still deemed insufficient for instruction (22%), although two thirds of schools seem to have working-devices (62%).*
- *In terms of Student Use, results are mixed: While most principals indicate that 58% of students use devices in class at least once a week, only 4% of schools have devices adapted for students with disabilities. A proactive strategy that trains, guides and explains how and when digital devices can be used in class could help.*
- *Areas of improvement include technical support within schools to maintain ICT resources, and the policies related to access and use of devices: Standards, monitoring and responsibilities for maintaining school ICT infrastructure are considered poor.*



Practices

Availability 3.6

- 66% of schools have Internet access

Student Access 2.5

- 45% of devices available to students are connected to the Internet
- There is a sufficient number of digital devices connected to internet: 20%

Quality 2.3

% of school principals who believe that:

- The school bandwidth or speed is sufficient: 28%
- The Internet stability is sufficient: 22%

Policies

Plan 3.4

- 61% of school principal believe that the government have any strategy or plan to provide or facilitate Internet connectivity to all schools

Monitoring 2.1

- 28% of school principals report that there someone or any institution or mechanism that monitors the availability of an Internet connection in the school.

Support System 1.5

- 12% of school principals believe that, if the school has problems with Internet connectivity, such as stability, low bandwidth, etc., there is a system or mechanism at the government level to assist and resolve the problem

- *Although two-thirds of the schools reported having connectivity, the student access and the quality of the internet are relatively poor: only 20% reported that there are sufficient devices connected to internet, and less than 30% indicate that the bandwidth or stability is sufficient.*
- *Thus, quality of connectivity can be improved across the board (devices connected, speed, and stability).*
- *Support and monitoring systems are seen as greatly lacking.*

Digital Educational Resources (DER)



Practices

Access 2.2

- 25% of school principals agree that his/her school has access to sufficient digital learning resources
- 13% of school principals agree that there is sufficient digital learning resources adapted for students with disability

Use 1.9

% of teachers who report using tools in some/most/every lessons:

- Computer-based information resources: 65%
- Digital resources linked with school textbooks: 68%
- Digital learning games: 57%
- Collaborative software: 43%
- Graphing or drawing software: 36%
- Word-processor software (e.g. Word): 57%
- Presentation software (e.g. PowerPoint): 44%

Quality 2.4

% of school principals who agree that, in his/her school:

- Available digital learning resources are of adequate quality: 29%
- Available digital learning resources are aligned to the needs of the curriculum: 47%
- Available digital learning resources are adapted to the local context: 22%

Policies

Guidance 2.6

- 40% of school principals believe that there is a strategy/plan for ensuring that public schools have access to digital educational resources

Strategy 2.6

% of school principals who believe that there is a government legislation/policy that defines:

- How DERs should be aligned to the curriculum's requirements: 49%
- How DERs should be adapted to the local culture or language: 38%
- How DERs should be adapted for the use of students with disabilities: 31%

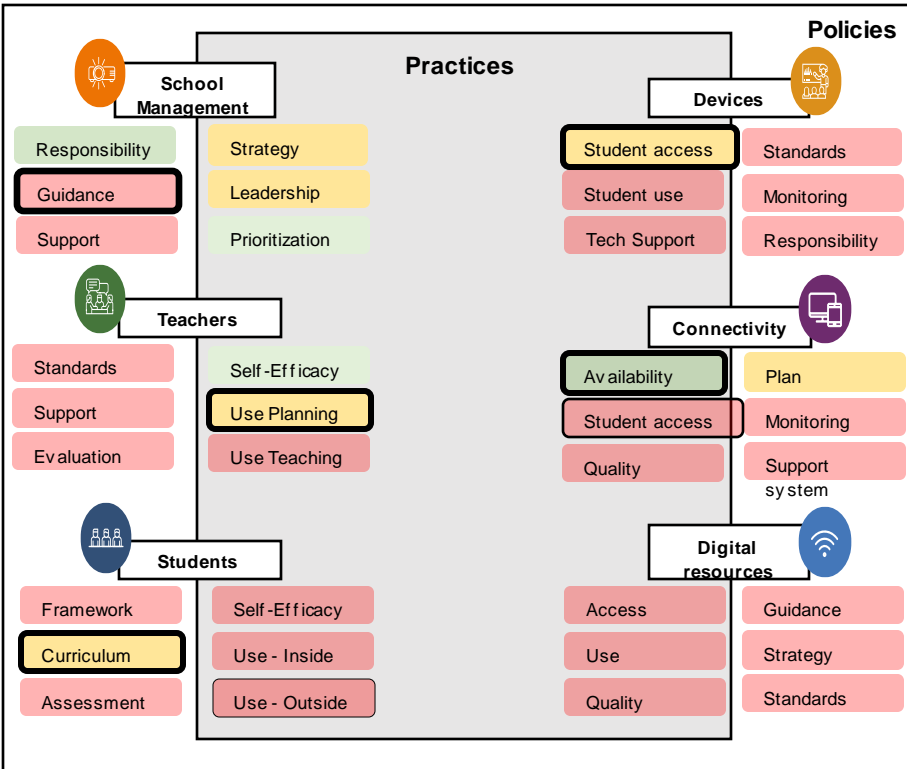
Standards 2.4

- 35% of school principals believe that there is a government legislation/policy defining quality standards for digital educational resources

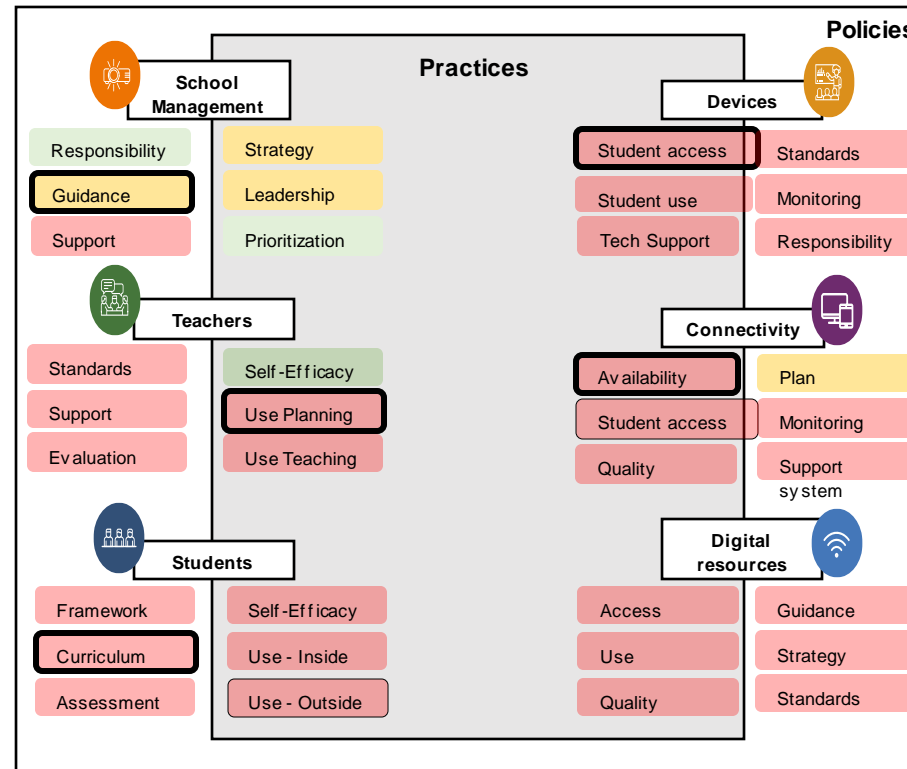
- *Across the board, practices and policies related to digital education resources (DERs) could be greatly improved.*
- *Access to quality Digital Educational Resources is particularly low (25%).*
- *Digital resources linked with school textbooks are used to great extent, but other more recent tools such learning games, collaborative, graphing/drawing software, word-processing, and presentation software, are less used.*
- *On the policy side, guidance, strategy, and standards should be improved, especially again keeping in mind specific needs of students with disabilities.*
- *The strategies for promoting and using DER should consider the limited availability of connected devices (e.g., offline friendly resources)*

Group level results - by location

Urban

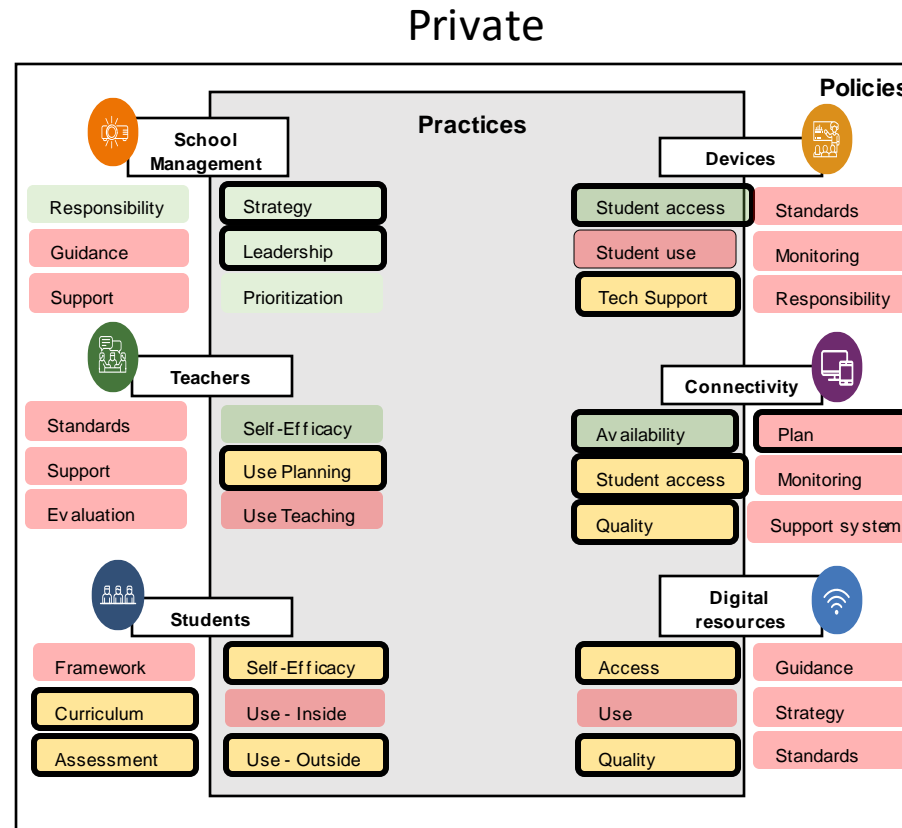
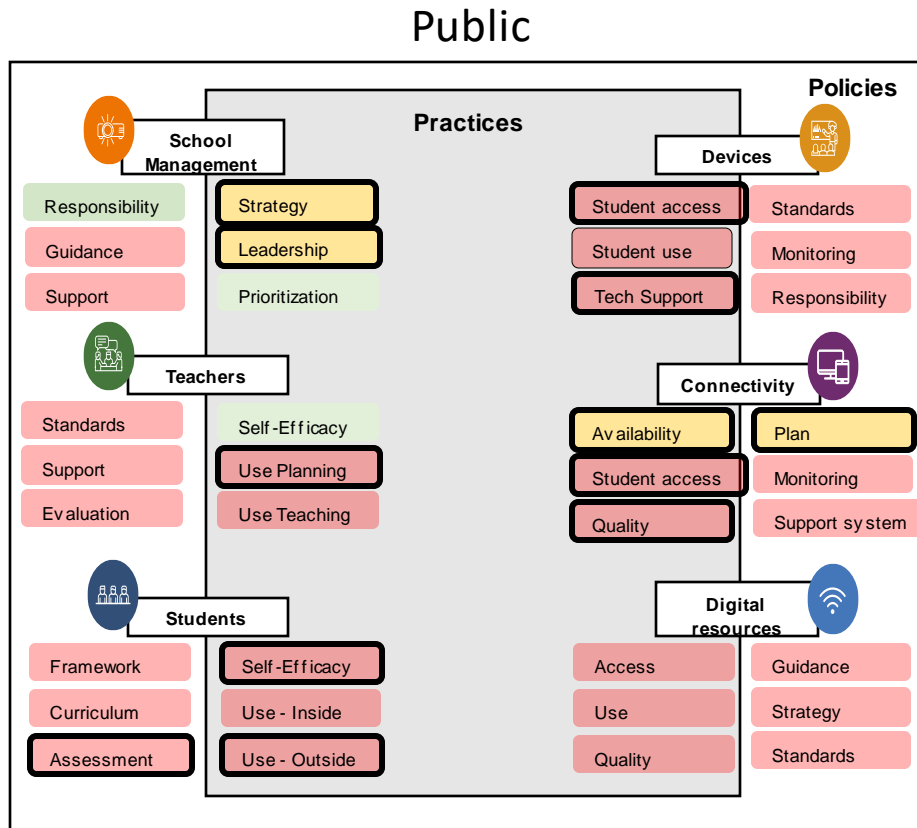


Rural



- Some differences are observed across location.
- More respondents at urban schools (than rural schools) believe that teachers use ICT for lesson planning.
- Similarly, respondents reported that more students at urban schools (than in rural schools) use digital devices, and that the curriculum includes recommendations to integrate ICT-assisted instruction.
- For Connectivity and as expected, more principals in urban areas reported that their schools are connected to internet. The overall perception is that rural schools need better support in areas such as teacher planning, curriculum guidance, availability of devices and connectivity specially to benefit students.

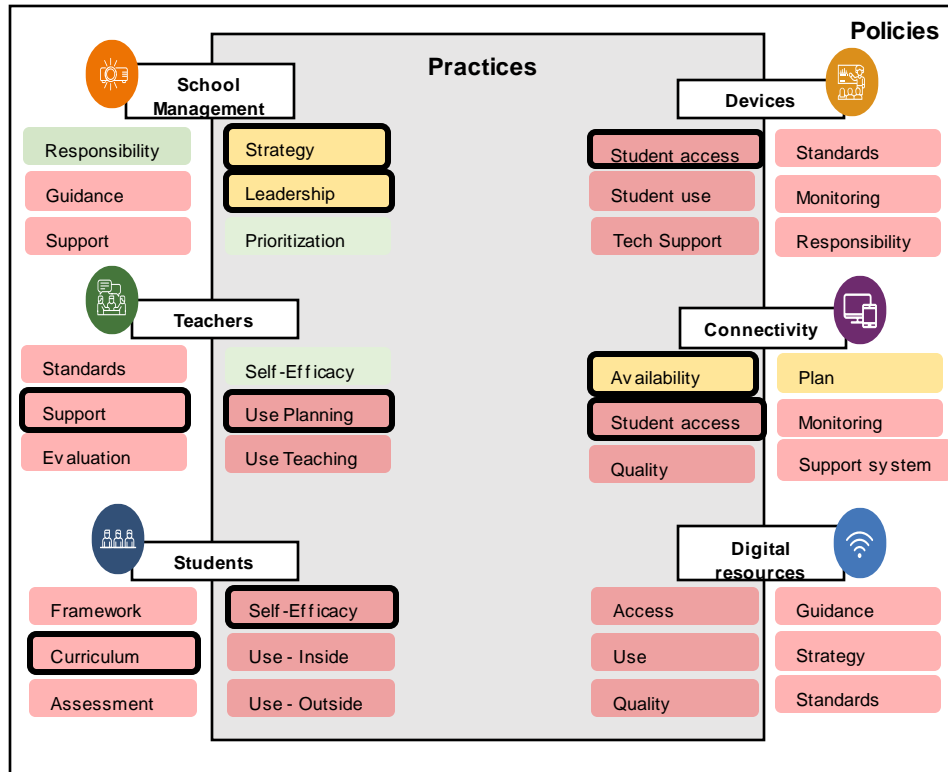
Group level results – type of school



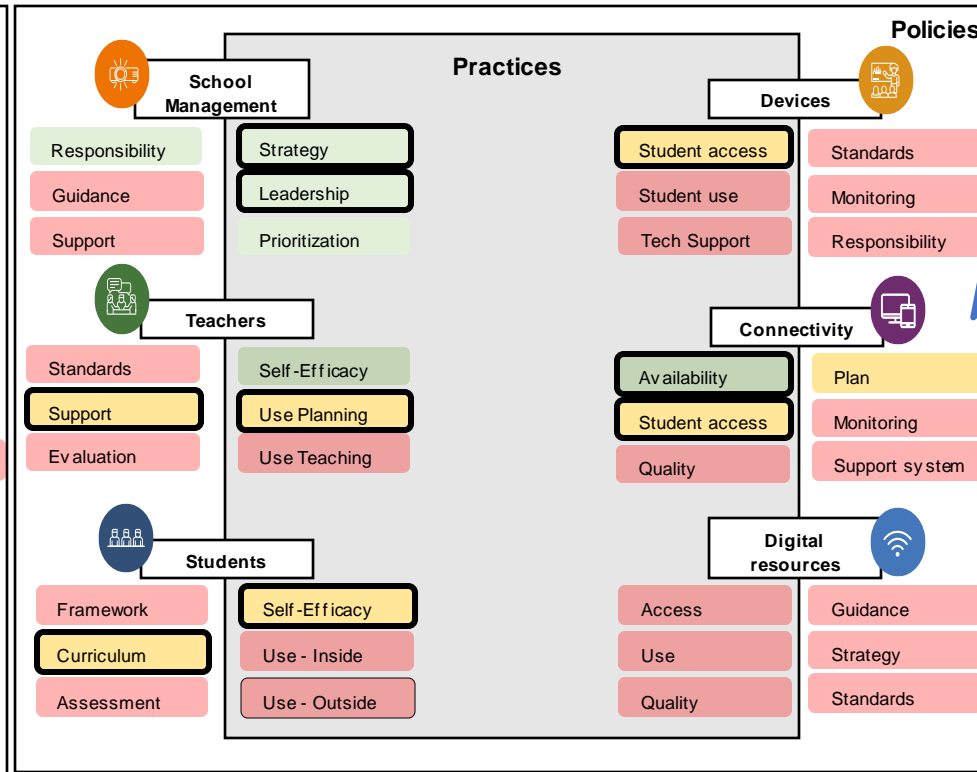
- More respondents in private schools (than in public schools) consider that at the School Management there is an ICT strategy in the school and that school leaders support the use of digital technologies.
- Similarly, more respondents in private schools indicate that Students have higher levels of self-efficacy and that students attending private schools are more likely to use technology outside school.
- For Connectivity and Devices and as expected, more principals in private schools than in public schools reported that their schools are connected to internet; Also, the percentage of digital devices that are available to students and that are connected to internet is higher in private schools.
- Finally, student access to digital resources is perceived as being better and of better quality at private schools compared to public schools.

Group level results - by grade

Grade 5



Grade 9



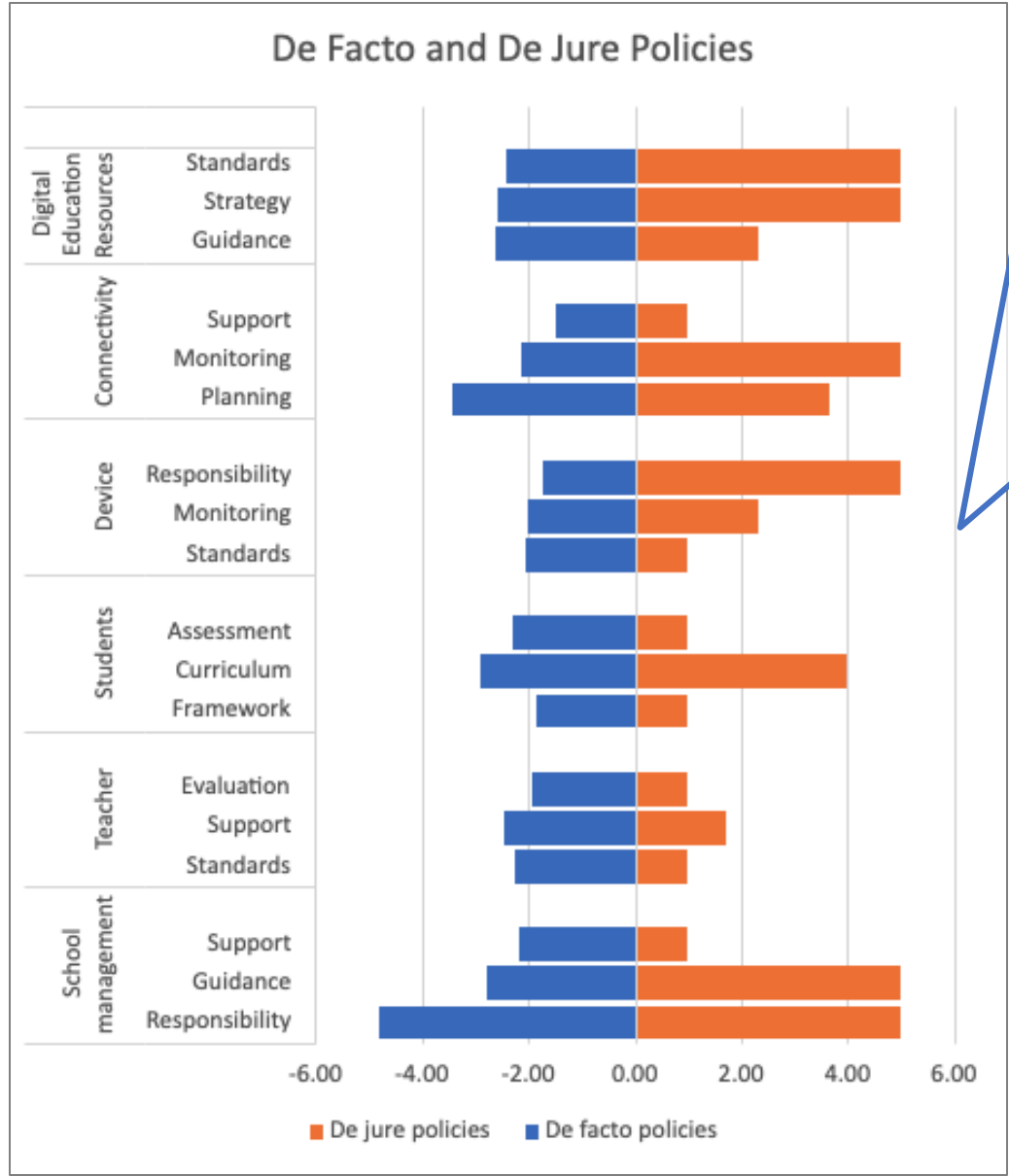
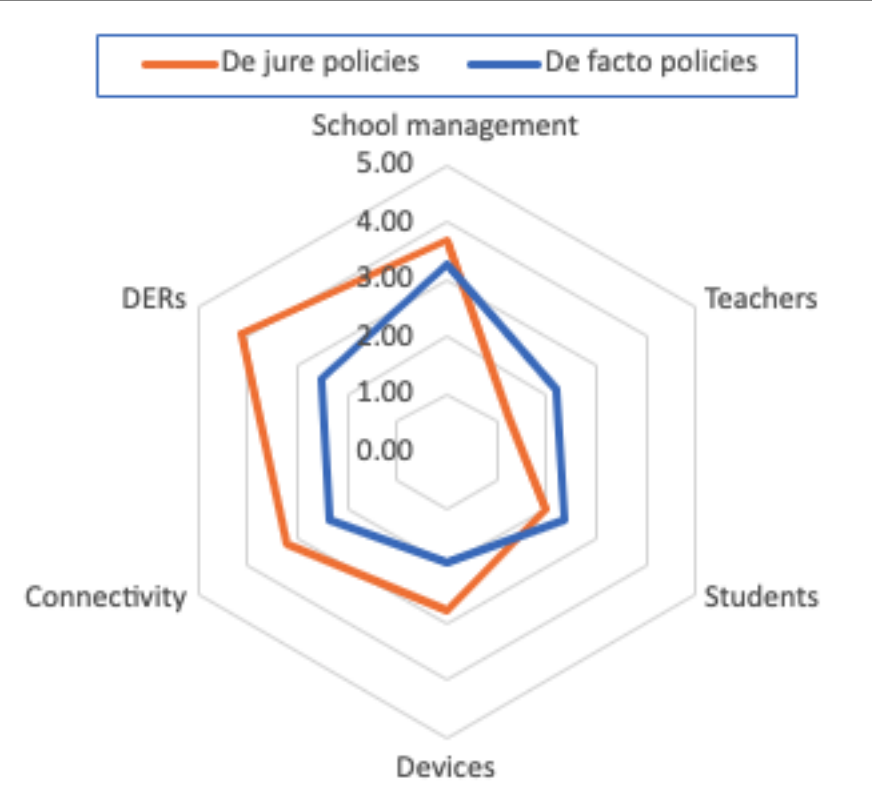
- Respondents indicate that more teachers in grade 9 (than in grade 5) use digital devices for lesson planning. However, the use of digital devices for teaching is low for both grade levels.
- Similarly, more respondents in grade 9 believe that students' sense of self-efficacy and use of ICT technology outside of the school is higher in grade 9 (than in grade 5).
- Finally, availability of internet and devices connected to internet and accessible to students is higher in grade 9 than in grade 5.

De Jure and De Facto





Comparison between de facto and de jure policies



- The pillar with the lowest De jure score is teachers.
- The other four pillars need attention to some areas more than others.
- The de jure and de facto results for Digital Educational Resources (DERs) are very different and not aligned, and in practice the level of readiness of schools to use DERs is quite low.
- For most pillars, de jure and de facto policies are not well aligned.
- For the teacher and student pillars, principals report knowing of and use evaluations, support and standards even when there are not formal policies to guide them.

Main Lessons



Recommendations Summary

Establish comprehensive policies and EdTech strategies for effective integration of EdTech in schools.

Despite the limited availability of digital devices, there is potential for improvement in both practices and policies.

Empowering teachers in the use of ICT requires the provision of guidance, training and evaluation.

Enhanced connectivity is crucial for maximizing the efficiency of ICT technology utilization.

Defining and integrating expected ICT skills for students into the curriculum is essential.

Digital Education Resources have the potential to provide significant support for teaching and learning.

Addressing inequalities requires prioritizing the most disadvantaged schools by providing an improved package of services.

1. Establish comprehensive policies and EdTech strategies for effective integration of EdTech in schools

- The effective integration of ICT into teaching and learning start with clear policies and **EdTech strategies**. Such policies should describe the main problems, and a series of strategies to address these challenges.
- EdTech policies must be accompanied by a detailed implementation strategy or **action plans**, backed by appropriate technical teams, sufficient funding, political support and robust monitoring and accountability mechanisms.
- The ETRI results for Nepal, reveal that policies for Teachers, Students, Devices, Connectivity and Digital Resources are at a very early stage.

The World Bank recommends to consider the 16 knowledge packs to consolidate the existing EdTech policies

<https://www.worldbank.org/en/topic/edutech/brief/edtech-toolkit-for-remote-learning>

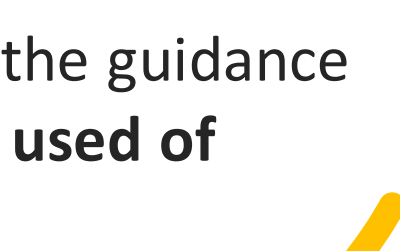
2. Empowering teachers in the use of ICT requires the provision of guidance, training and evaluation

Despite the high confidence of teachers, the very low use of ICT for teaching could be related to the lack of supporting policies. Here are some considerations:

- Define and adopt an **ICT Competency Framework** for teachers. Such competency framework should guide how teachers use digital technology for their professional practice, to deliver the curriculum, and to develop students' digital competences.
- Provide **training**, aligned with the competency framework, to develop the ICT skills for teaching and planning.
- Adopt a formal **evaluation or monitoring mechanism** to assess progress and tailored training and support.

These actions should be accompanied with the enabling infrastructure (access to devices, connectivity and digital resources).

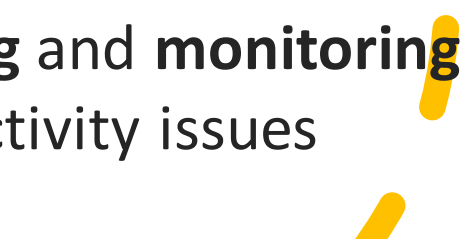
3. Defining and integrating expected ICT skills for students into the curriculum is essential

- There is a need for an official **ICT competency framework** for students to outline the required knowledge and skills.
 - The ICT skills denoted in the competency framework should be integrated in the **curriculum** (for all grades and subject areas).
 - An evaluation policy and an **assessment plan** of students' digital skills should be defined and implemented to understand the strengths and areas for improvement.
 - The enabling digital infrastructure and the guidance should facilitate to make **more advance used of digital technologies for learning**.
- 

4. Despite the limited availability of digital devices, there is potential for improvement in both practices and policies

- The use of digital devices could **support and complement instruction** when computer assisted learning programs are used to provide “teach to the level of the student” (personalized tutoring).
- Digital devices could also be an asset to support students with **disabilities**. Thus, providing assistive devices for learners with special needs is strongly recommended.
- To ensure the efforts carried out to deliver on all public schools' devices are truly realized, the MoEST needs to continue its technical assistance systems in areas such as **training, monitoring, maintenance and repositioning**. Only then can the country ensure that ICT devices are adequate for usage (and learning).

5. Enhanced connectivity is crucial for maximizing the efficiency of ICT technology utilization

- The quality of **internet connectivity** is a major challenge to ensuring the expansion of EdTech at the national level. This is especially acute in **rural schools**.
 - Continue the efforts to provide **quality connectivity** to all public schools in the country, improving the school **bandwidth, speed, and internet stability**.
 - While the country works to improve connectivity quality, additional steps can be taken to consider EdTech solutions that do not require constant connectivity (offline).
 - Implementing an appropriate **planning and monitoring system** to identify and address connectivity issues should be prioritized.
- 

6. Digital Education Resources have the potential to provide significant support for teaching and learning

- DER can help to alleviate some of the resource-related challenges, particularly, the shortage of resources supporting inclusive education, indigenous language-based, and gender-responsive resources.
- However, across the board, several challenges associated with DER should be addressed at the policy and practice levels.
- Nepali teachers are using DER for lesson planning to some extent, but to safeguard the quality of education and support instruction, it is important to establish **quality standards** and ensure the alignment of DER content with the **national curriculum**.
- Such **supporting policies**, should also promote inclusive and equitable access to quality resources.
- It is also key to provide **training** to principals and teachers to increase knowledge and use of these resources to support teaching and learning.
- The strategies for promoting and using DER used should consider the limited availability internet connectivity (e.g., offline friendly resources)

7. Addressing inequalities requires prioritizing the most disadvantaged schools by providing increased attention and an improved package of services

- Practices: Although connectivity and support for devices must be enhanced in all schools, a higher effort needs to be undertaken in **rural zones** and **public schools** for them to catch up.
- In terms of **Edtech policies**, in addition to the challenges already described in this study, it is critical to allocate **special efforts to secure that schools from rural** areas could receive equal (if not more) **attention** from both de jure (policy) and de facto (practice) in order to reduce the existing gaps.

Thank You

<https://www.worldbank.org/en/topic/education/brief/edtech-readiness-index>

Implementation of Field Work

Appendix





Field Work: Implementation of the School Survey

- **Type:** Remote data collection, by phone
- **Firm:** Nepal Development Research Firm (NDRI)
- **Number** of enumerators + supervisors: 10
- **Duration (preparation, training, data collection):** 4 months. Training started in August.
- **Challenges encountered:** Firm was not experienced with the Survey Solutions software used by the WB to collect and control the quality of data; Replacements were conducted after reaching the selected sample, which extended the data collection process; Long holidays and the illness of key local personnel also contributed to the extend data collection process.





Field Work: Sample

- **Sample size:** 330 schools from across all provinces of Nepal
- **Respondent of the survey:** Principal; Principal + Teachers; Principal + Teachers + ICT specialist.
- **Stratification of the sample:**
 - Urban & rural
 - Public & Private
 - Grade 5 & Grade 9
- **Number of replaced schools: 33**
 - Reasons for refusal/replacement

Summary of implementation of the Policy Survey

- **Consultant:** Experienced consultant with government background was selected by the country team for this task
- **Dates & duration:** 3 weeks
- **Type of documents reviewed:** National Curriculum Framework for School Education; EMIS Report, National Policy Documents (science and broadband); ICT policy and Master Plan;
- **People interviewed:** Government officials from the Centre for Education and Human Resource Development (CEHRD), Curriculum Development Centre (CDC), and the Ministry of Education Science and Technology (MoEST)
- **Special challenges encountered:** None