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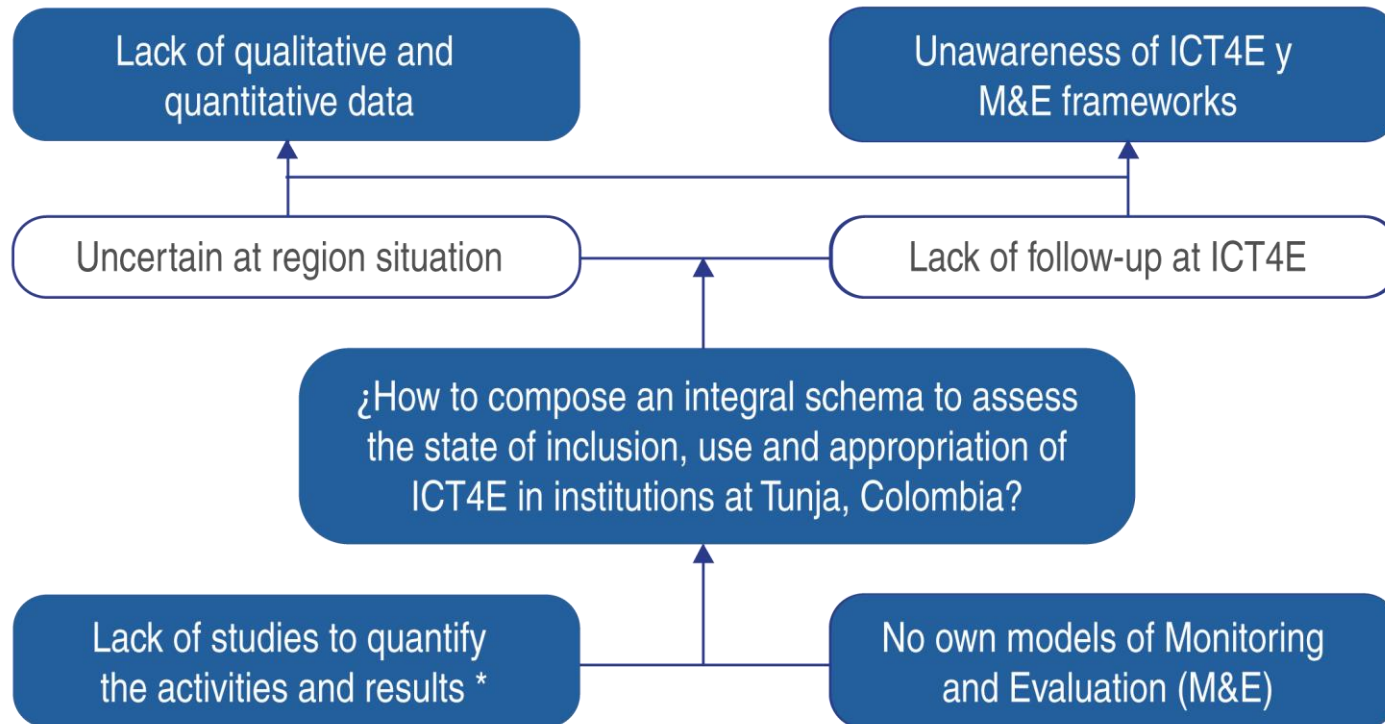


INTEGRAL SCHEMA FOR MONITORING AND EVALUATION OF ICT INCLUSION, USE AND APPROPRIATION IN EDUCATION

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TECNOLÓGICA DE COLOMBIA

PROBLEM



* Mineducación presentó innovadora herramienta para medir uso e impacto de las TIC en el aula de clase, Noticias, MINEDUCACION <http://www.mineducacion.gov.co/1759/w3-article-356494.html>

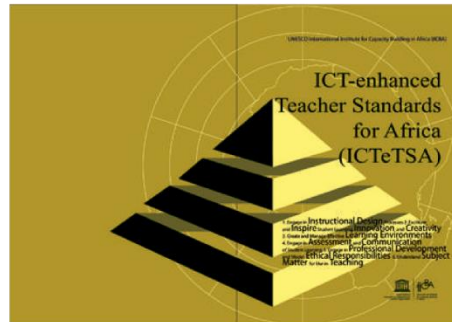
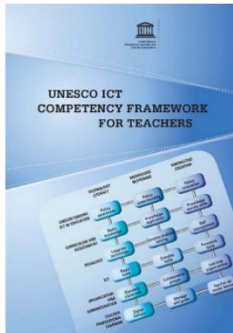
OBJECTIVE

Design an integral M&E schema of Inclusion, Use and Appropriation of ICT4E

POPULATION 14 official institutions at the municipality of Tunja

I.E. ANTONIO JOSE SANDOVAL	Nor. SUP. LEONOR ÁLVAREZ PINZÓN	I.E.SAN JERONIMO EMILINI
IE. SILVINO RODRIGUEZ	I.E. GONZALO SUÁREZ RENDÓN	I.E.JULIUS SIEBER
I.E. RURAL DEL SUR	INEM CARLOS ARTURO TORRES	NORMAL SUP. SANTIAGO DE TUNJA.
FUNDACION ITEDRIS	GIMNASIO GRAN COLOMBIANO	I.E. LIBERTADOR SIMÓN BOLÍVAR
I.E. GUSTAVO ROJAS PINILLA	COLEGIO DE BOYACÁ	

FRAMEWORKS



		EXPERTISE			
		TEACHER-DRIVEN LEARNING	AUTONOMOUS LEARNING	SELF-DIRECTED LEARNING	NOTIA
INFRASTRUCTURE	CONTENT AND APPLICATIONS	INSTRUCTION AND PRACTICE			
	ADAPTIVE LEARNING MATERIAL				
	PERSONAL LEARNING ENVIRONMENT				



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FRAMEWORKS – INDICATORS

FRAMEWORK	INDICATOR	FRAMEWORK	INDICATOR
UNESCO ICT Competency Standards for Teachers	63	ICT-tools for a balanced use of ICT in the Netherlands	36
ICT-enhanced Teacher Standards for Africa	48	Metas Educativas 2021*	4
ISTE: National Educational Technology Standards for Teachers (NETS-T)	84	Competencias TIC para el desarrollo Profesional Docente	45
Australia: ICT Competency Framework for Teachers	58		

*Metas Educativas 2021 is not really a framework but it is included because it's an unanimously accepted proposal by the Ministers of Education meeting at El Salvador, on the XVIII Ibero-American Conference; a joint commitment to meet the challenges of their people through an education program.

INDICATORS

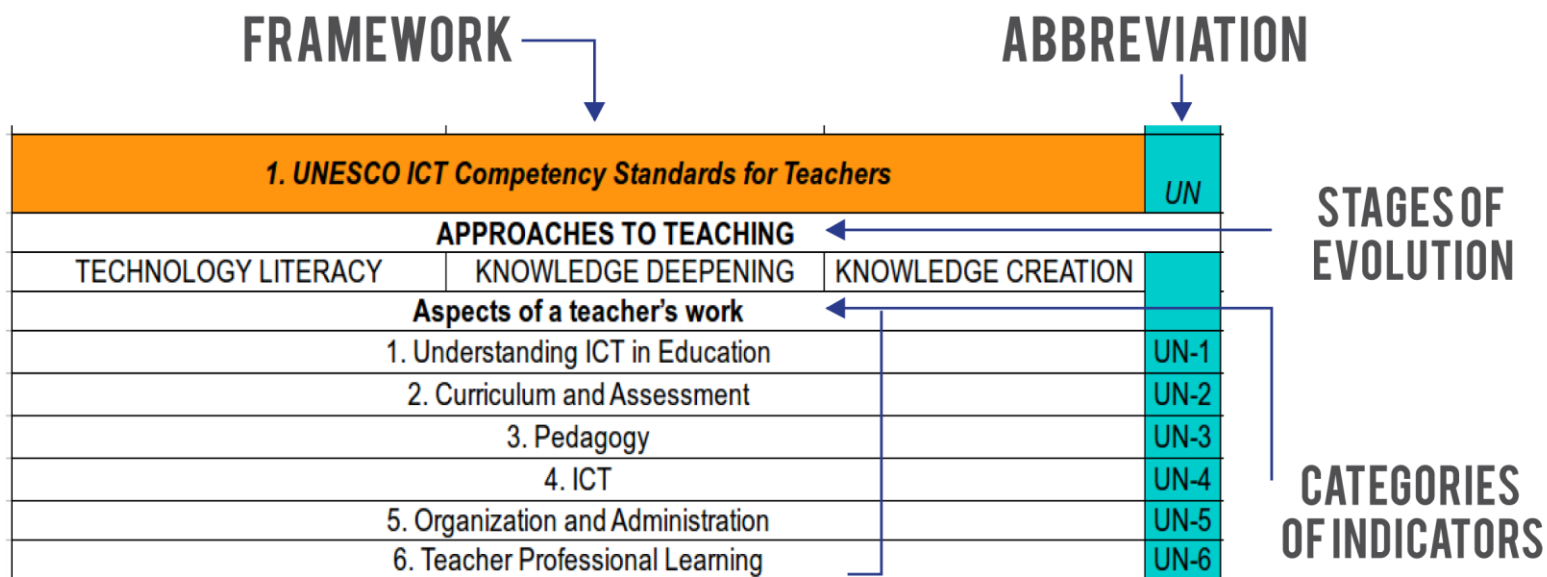
“Ways to deliver a state, trend or warning on ICT in the educational environment”



1 Kozma, R. B., Wagner, D. A.: Core indicators for monitoring and evaluation studies in ICTs for education. In: Monitoring and Evaluation of ICT in Education Projects, pp. 35. Washington DC (2005)

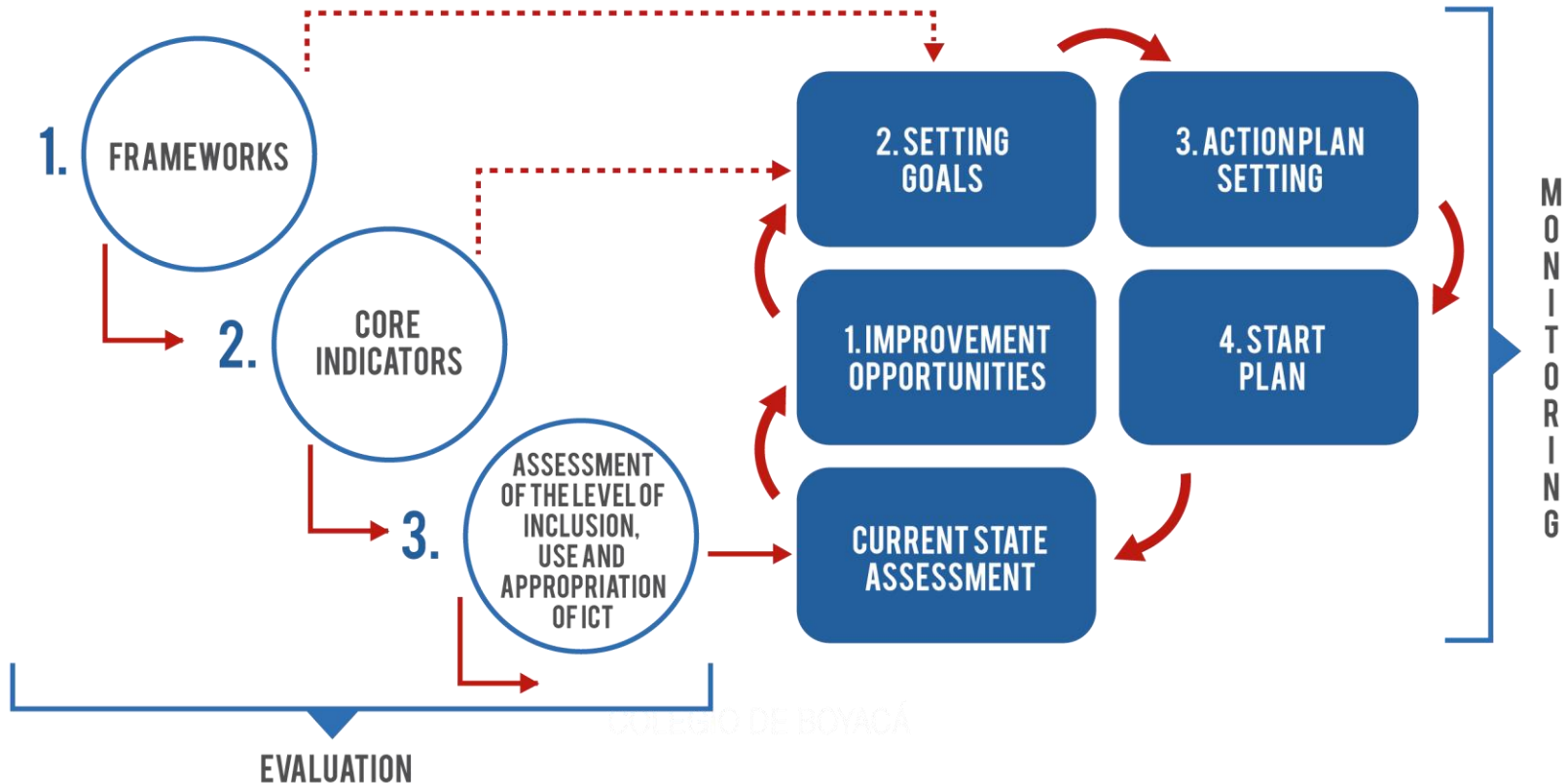
2 Melgarejo, V.E.: Indicators for Monitoring and Evaluation of ICT for education: a systematic review. In: WOSC 2014, 16th Congress of the World Organization of Systems and Cybernetics. University of Ibagué. pp. 117 – 127. Ibagué (2014)

STAGES OF EVOLUTION & CATEGORIES OF INDICATORS



*UNESCO ICT. Fuente: WOSC 2014, p. 120

M&E SCHEMA



EVALUATION SCHEMA

Correlations - Categories of indicators

	CORE INDICATORS	CATEGORY OF INDICATORS	FRAMEWORKS' INDICATORS						
Inputs	1. Classroom ICT resources	1. ICT	UN-4	AF-1	NS-1	AU-1, AU-2, AU-3, AU-4, AU-5	4B-2	ME-20	CP-1
	2. Teacher training	2. Learning environments	UN-5	AF-3	NS-2	AU-3	4B-3	N/A	CP-3, CP-4, CP-5
	3. Classroom pedagogy	3. Teacher Professional Learning/development	UN-6	AF-5	NS-1	AU-3	4B-1		CP-2, CP-3, CP-5
Outputs	4. Student knowledge of School subjects	4. Pedagogy	UN-3	AF-2	NS-3	AU-1	4B-1, 4B-3	ME-16	CP-5
	5. Student attitudes	5. Assessment	UN-2	AF-4	NS-3, NS-4	AU-1, AU-2, AU-5	4B-1	N/A	CP-4
	6. Student skills			AF-2	NS-3, NS-4	AU-1, AU-2			CP-2, CP-3, CP-4
	7. Systemic outcomes			AF-1	NS-3	AU-4			CP-4
	8. Teacher outcomes	6. Curriculum		AF-1	NS-3	AU-4	4B-3	ME-23	
	9. Long-term outcomes	7. Educational Policies		UN-1	AF-5	NS-6	AU-4, AU-5	4B-1, 4B-2, 4B-3	ME-24

Pregunta	CATEGORIAS DE INDICADORES	Framework						
		UN	AF	NS	AU	4B	CP	ME
1	TIC	PREGUNTA DE REGISTRO						
2	TIC	ME-20						
3	TIC	PREGUNTA DE REGISTRO						
4	TIC	ME-20						
5	TIC	ME-20						
6	TIC	ME-20						
7	TIC	UN-4	AF-1	NS-1	AU-3	4B-1	CP-1	
8	TIC	UN-4	AF-1	NS-1	AU-3	4B-1	CP-1	
9	TIC	UN-4	AF-1	NS-1	AU-3	4B-2	CP-1	
10	TIC	UN-4	AF-1	NS-1	AU-1	4B-2	CP-1	
11	TIC	UN-4	AF-1	NS-1	AU-3	4B-1	CP-1	
12	TIC	UN-4	AF-1	NS-1	AU-1	4B-2	CP-1	
13	TIC	UN-4	AF-1	NS-1	AU-2	4B-2	CP-1	
14	TIC	UN-2	AF-3	NS-2	AU-2	4B-2	CP-4	
15	TIC	UN-2	AF-2	NS-2	AU-4	4B-3	CP-1	
16	TIC	UN-2	AF-3	NS-1	AU-2	4B-2	CP-1	
17	TIC	UN-2	AF-3	NS-2	AU-4	4B-2	CP-4	
18	Ambientes de Aprendizaje	PREGUNTA DE REGISTRO						
19	Ambientes de Aprendizaje	UN-5	AF-3	NS-2	AU-1	4B-3	CP-2	
20	Ambientes de Aprendizaje	UN-2	AF-3	NS-2	AU-4	4B-3	CP-4	
21	Ambientes de Aprendizaje	UN-6	AF-3	NS-2	AU-3	4B-3	CP-5	
22	Ambientes de Aprendizaje	UN-1	AF-3	NS-2	AU-4	4B-3	CP-5	
23	Ambientes de Aprendizaje	UN-6	AF-5	NS-2	AU-3	4B-3	CP-5	
24	Ambientes de Aprendizaje	UN-5	AF-4	NS-6	AU-5	4B-3	CP-3	
25	Ambientes de Aprendizaje	UN-5	AF-4	NS-6	AU-5	4B-3	CP-3	
26	Ambientes de Aprendizaje	UN-5	AF-4	NS-6	AU-5	4B-3	CP-3	
27	Aprendizaje/Desarrollo profesional Docente	UN-6	AF-5	NS-1	AU-3	4B-3	CP-2	

* Frameworks Indicators (Source: WOSC 2014, p. 124)

EVALUATION SCHEMA

FRAMEWORK	STAGES OF EVOLUTION		
	<i>Inclusion</i>	<i>Use</i>	<i>Appropriation</i>
1. UNESCO ICT Competency Standards for Teachers	APPROACHES TO TEACHING		
	<i>Technology Literacy</i>	<i>Knowledge Deepening</i>	<i>Knowledge Creation</i>
2. ICT-enhanced Teacher Standards for Africa.	Stages		
	<i>Emerging</i>	<i>Applying</i>	<i>Infusing</i> <i>Transforming</i>
3. ISTE: National Educational Technology Standards for Teachers (NETS-T)	RUBRICS		
	<i>Beginner</i>	<i>Medium</i>	<i>Expert</i> <i>Transformer</i>
4. Australia: ICT Competency Framework for Teachers	Phases		
	<i>Phase 1</i>	<i>Phase 2</i>	<i>Phase 3</i>
5. ICT-tools for a balanced use Of ICT in the Netherlands	Expertise/Vision		
	<i>Teacher-Driven Learning</i>	<i>Autonomous Learning</i>	<i>Self-Organized Learning</i>
7. ICT Competencies for the Professional Development For Teachers	Levels		
	<i>Exploration</i>	<i>Integration</i>	<i>Innovation</i>

*Estados de Evolución de los Frameworks. Fuente: WOSC 2014, p. 124

EVALUATION SCHEMA

QUALIFICATIONS

FRAMEWORK	STAGES OF EVOLUTION		
	Inclusion	Use	Appropriation
1. UNESCO ICT Competency Standards for Teachers	APPROACHES TO TEACHING		
	0 >= 1	1 >= 2	2 >= 3
2. ICT-enhanced Teacher Standards for Africa.	Stages		
	0 >= 1	1 >= 2	2 >= 3 3 >= 4
3. ISTE: National Educational Technology Standards for Teachers (NETS-T)	RUBRICS		
	0 >= 1	1 >= 2	2 >= 3 3 >= 4
4. Australia: ICT Competency Framework for Teachers	Phases		
	0 >= 1	1 >= 2	2 >= 3
5. ICT-tools for a balanced use Of ICT in the Netherlands	Expertise/Vision		
	0 >= 1	1 >= 2	2 >= 3
7. ICT Competencies for the Professional Development For Teachers	Levels		
	0 >= 1	1 >= 2	2 >= 3

STAGES OF EVOLUTION	QUALIFICATION
INCLUSION	0 >= 1
USE	1 >= 2
APPROPRIATION	2 >= 3

METHODS

EVALUATION SCHEMA

ASSESSMENT OF THE LEVEL OF INCLUSION, USE AND APPROPRIATION OF ICT

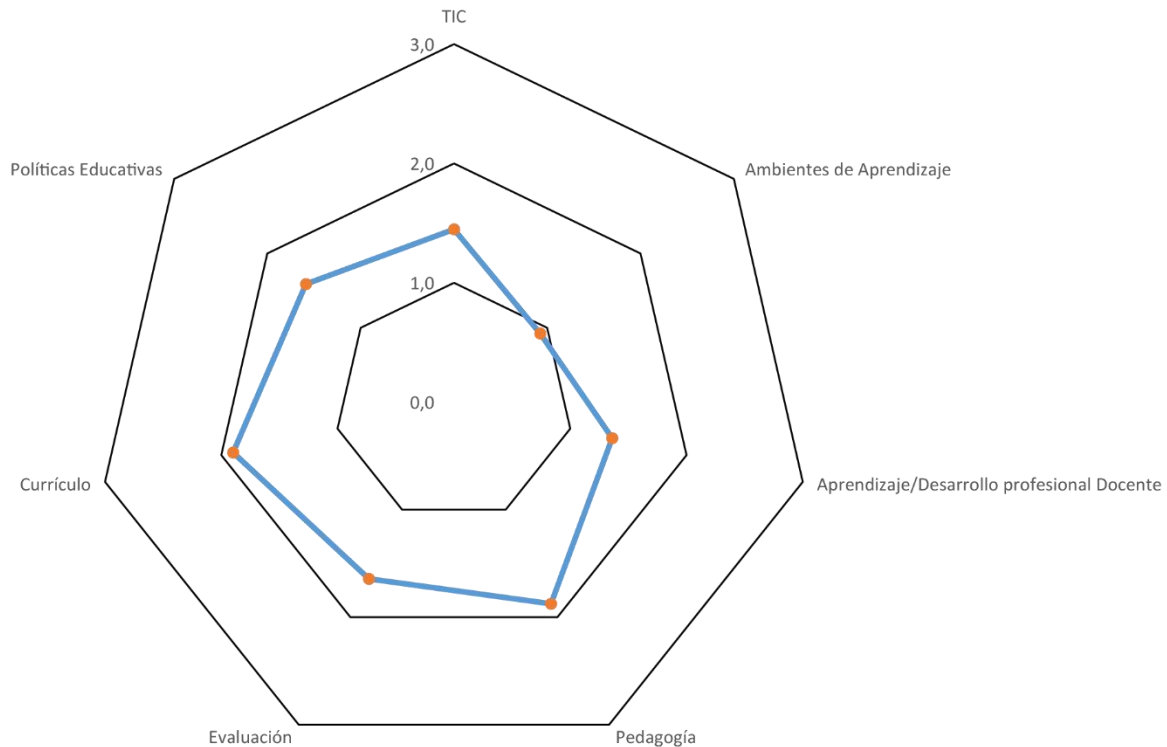
<https://es.surveymonkey.com/m/r/TUNJATIC>

The screenshot shows a SurveyMonkey survey form for the 'Maestría en TIC Aplicadas a las Ciencias de la Educación' at Uptc. The survey title is 'EVALUACIÓN DEL NIVEL DE INCLUSIÓN, USO Y APROPIACIÓN DE LAS TIC'. The form includes the following questions:

- 1. Nombre de la Institución: A dropdown menu with a list of institutions including I.E. ANTONIO JOSE SANDOVAL, I.E. JULIUS SIEBER, Nor. SUP. LEONOR ALVAREZ PINZON, NORMIAL SUP. SANTIAGO DE TUNJA, I.E. GUSTAVO ROJAS PINILLA, I.E. GONZALO SUAREZ RENDON, I.E. SILVINO RODRIGUEZ, INEM CARLOS ARTURO TORRES, I.E. LIBERTADOR SIMON BOLIVAR, I.E. RURAL DEL SUR, COLEGIO DE BOYACA, I.E. SAN JERONIMO EMLINI, GIMNASIO GRAN COLOMBIANO, and FUNDACION ITEDRIS.
- 2. Indique la cantidad de computadores que posee la institución: A text input field.
- 3. Indique la cantidad de tablets que posee la institución: A text input field.

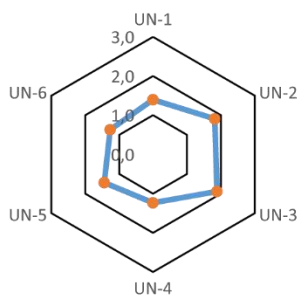
RESULTS

STATE OF INCLUSION, USE AND APPROPRIATION OF ICT FOR EDUCATION IN THE OFFICIAL EDUCATIONAL INSTITUTIONS AT THE MUNICIPALITY OF TUNJA

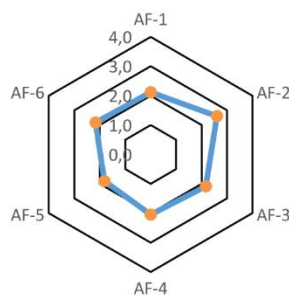


RESULTS

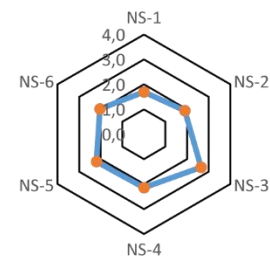
UNESCO ICT Competency Standards for Teachers



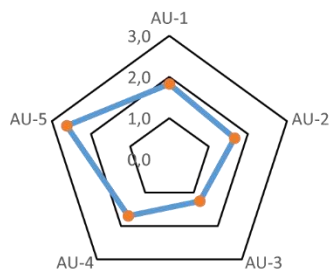
ICT-enhanced Teacher Standards for Africa



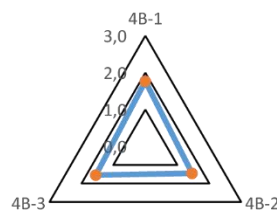
ISTE: National Educational Technology Standards for Teachers (NETS-T)



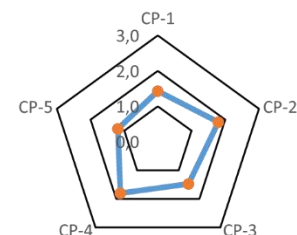
Australia: ICT Competency Framework for Teachers



ICT-tools for a balanced use of ICT in the Netherlands



ICT Competencies for the Professional Development For Teachers





CONCLUSIONS

STRENGTHS:

Administrative management

Curriculum design

Training and making associations of the school community

Pedagogy (teaching practice)

OPPORTUNITIES FOR IMPROVEMENT:

Development of curriculum policies

Professional development

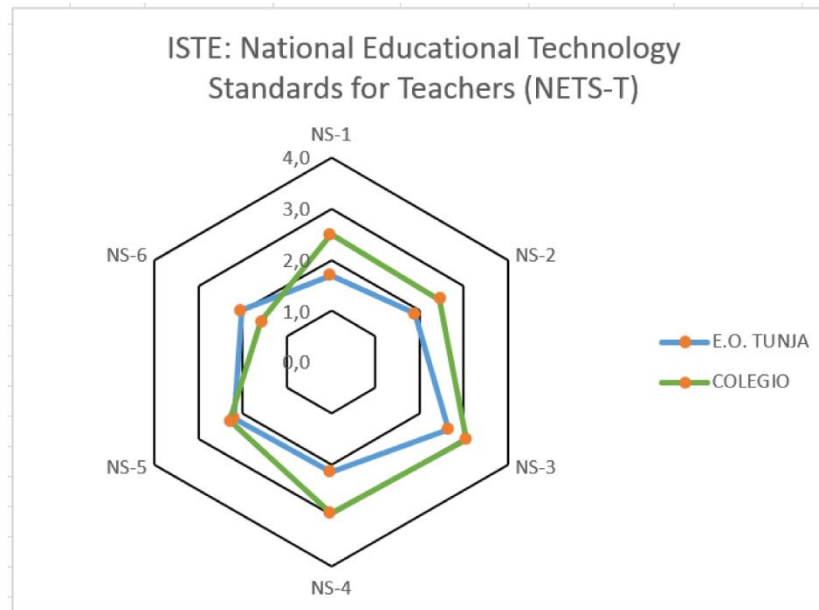
Evaluation/reporting of results in learning

Making of adaptive resources

Personal learning environments

Deepening on ICT for Education operational concepts and educational research

FURTHER RESEARCH



MINEDUCACIÓN

Bogotá D.C., 15 de marzo de 2016. Mineducación. Durante la instalación del Seminario Internacional de TIC, evento organizado por Fedesarrollo, la Ministra de Educación, Gina Parody, lanzó el Observatorio Nacional de Uso Educativo de nuevas tecnologías, una innovadora herramienta que medirá el uso y el impacto de estas en el aula de clase.



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