

PCMI 2016

BOLIVIA

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What is the status of Statistics in the K-12 curriculum in your country?

- Statistics is a new emerging discipline, although it is part of the official curriculum for schools, has not yet fully implemented.
- It has been incorporated into the plans and programs of study in different years of schooling level Productive Community Secondary School, not only for its instrumental nature but also for its contribution to the development of mathematical logical thinking.

- Currently, for 4th and 5th grade (9-10 years) statistics very slightly charts, bar charts and pie charts, in addition to the definitions of arithmetic, median and mode media is studied.
- Unfortunately in the cycle becomes secondary and not studying any topic related statistics, although in official programs should be included in 1st, 3rd, 5th and 6th.

LEVEL	BIMESTER	CONTENT
1°	3° Y 4°	Statistical data in Production and Social Processes Data collection about vocations and productive potential of the community Data Tabulation Graphs, tables and interpretation of the productive potential of the region
3°	1° y 2°	The statistical method Representations
	3° y 4°	Measures of central tendency : mean, median and mode Standard deviation
5°	1° y 2°	Applied Statistics in community activities Data analysis , graphical representation and interpretation
	3° y 4°	Statistics as a field study Frequency distributions sociocultural phenomena
6°	1° y 2°	Odds basics of estadistic
	3° y 4°	Combinatorial analysis Resolution of problems of mathematical and statistical functions that incorporate environmental productive

How are prospective teachers prepared for teaching statistics in your country?

- The structure of teachers training of the Plurinational education system is run by the Ministry of Education.

- The Higher Teachers Training Schools ESFM are the institutions, exclusively, responsible for the supply and development of academic programs of initial training of teachers.
- Teacher training math is done for each of the primary cycles (in 4 years) or Secondary (in 5 years), separately, in the Higher Teachers Training Schools ESFM.

MALLA CURRICULAR ESPECIALIDAD MATEMATICA													
ESPECIALIDAD	MATEMATICA												
NIVEL	SECUNDARIA COMUNITARIA PRODUCTIVA												
SIGLA	MAT												
			FORMACION GENERAL				FORMACION ESPECIALIZADA						
			PRIMER AÑO		SEGUNDO AÑO		TERCER AÑO		CUARTO AÑO		QUINTO AÑO		
PRINCIPIO	EJES	CAMPOS DE SABERES Y CONOCIMIENTOS	UNIDAD DE FORMACION	HORAS	UNIDAD DE FORMACION	HORAS	UNIDAD DE FORMACION	HORAS	UNIDAD DE FORMACION	HORAS	UNIDAD DE FORMACION	HORAS	
DESCOLONIZACION COMUNITARIA INTRACULTURAL, INTERCULTURAL Y PLURLINGUE TECNICA, TECNOLOGICA Y ARTISTICA	PRODUCTIVA Y TERRITORIAL CIENTIFICA	2 EDUCACION EN VALORES SOCIOCOMUNITARIOS 3 EDUCACION EN CONVIVENCIA CON LA NATURALEZA Y SALUD COMUNITARIA	COSMOS Y FILOSOFÍAS	120									
			FORMACIÓN EN VALORES SOCIO COMUNITARIOS	80									
			PSICOLOGÍA, DESARROLLO HUMANO Y CAMBIO EDUCATIVO	80	EDUCACIÓN ESPECIAL I	80	EDUCACION ESPECIAL I (LSB y SA)	80	DIFICULTADES EN EL APRENDIZAJE Y ADAPTACIONES CURRICULARES I	80	DIFICULTADES EN EL APRENDIZAJE Y ADAPTACIONES CURRICULARES II	80	
			SOCIEDAD Y TEORÍAS PSICOPEDAGÓGICAS	80	PEDAGOGÍA Y CURRÍCULO	80			DIDACTICA DE LA MATEMATICA	160			
			GESTIÓN Y PLANIFICACIÓN EDUCATIVA	80									
			ESTADO Y EDUCACIÓN	160	SOCIOPOLÍTICA Y DESCOLONIZACIÓN	160							
			TALLER DE LENGUA CASTELLANA I	80	TALLER DE LENGUA CASTELLANA II	80							
			TALLER DE LENGUA ORIGINARIA I	80	TALLER DE LENGUA ORIGINARIA II	80	TALLER DE LENGUA ORIGINARIA III	80	TALLER DE LENGUA ORIGINARIA IV	80	TALLER DE LENGUA ORIGINARIA V	80	
			VIDA, TIERRA Y TERRITORIO		SALUD FAMILIAR COMUNITARIA	80							
			CIENCIA		FUNDAMENTOS DE ARITMETICA Y ALGEBRA					ALGEBRA LINEAL:		INVESTIGACION OPERATIVA	120
		APLICACIONES PRODUCTIVAS	120	GEOMETRIA Y PENSAMIENTO CONCRETO	160	DISEÑO Y PRODUCCION	160	TOPOLOGIA	80				
		GEOMETRIA DE NUESTRAS CULTURAS Y DE LA		GEOMETRIA Y TRIGONOMETRIA DEL ESPACIO (RELACIONES MATEMATICAS EN ARMONIA CON EL COSMOS)	160			MATEMATICA FINANCIERA Y EL EMPRENDIMIENTO		PRODUCTO RENTABLE	120		
				CALCULO EN R2 APLICADA A LA TECNOLOGIA	160	CALCULO EN R, RELACION ALMONICA Y EQUILIBRADA CON LA PRODUCCION	200	ECUACIONES DIFERENCIALES Y VARIABLE COMPLEJA			200		
				ESTADISTICA DESCRIPTIVA E INFERENCIAL	160			COMPLEMENTARIEDAD DE LA MATEMATICA CON LA FISICA			120		
				EPISTEMOLOGIA DE LA MATEMATICA	80	METODOS NUMERICOS	160	SIMULACION Y MODELOS MATEMATICOS			160		
		TICS Y EDUCACIÓN I	80	TICS Y EDUCACIÓN II	80		INFORMATICA APLICADA						
		INVESTIGACIÓN EDUCATIVA Y PRODUCCIÓN DE CONOCIMIENTOS I	120	INVESTIGACIÓN EDUCATIVA Y PRODUCCIÓN DE CONOCIMIENTOS II	160	INVESTIGACION EDUCATIVA Y PRODUCCION DE CONOCIMIENTOS II	160	INVESTIGACION EDUCATIVA Y PRODUCCION DE CONOCIMIENTOS III	160	INVESTIGACION EDUCATIVA Y PRODUCCION DE CONOCIMIENTOS IV	160		
			960		1040		1040		1120		1120		

Distribution of the workload for secondary teacher training

Year Training	Hours
<i>First Year</i>	0
<i>Second Year</i>	240
<i>Third Year</i>	1.040
<i>Fourth Year</i>	1.120
<i>Fifth Year</i>	1.120

- The specialized training space includes 3,520 hours equivalent to 66.6% of total 5280 hours contemplated for the five years of initial training.
- Statistic is studied in 3rd year, with a total workload of **160 hours**, equivalent to **15%** of the total hours in 3rd year, and equivalent to **4.5%** of the total hours in specialized training.
- The current deficiency in the framework of university studies and the lack in statistic's pedagogy are the main factors preventing that statistics as a subject of study in schools.

How do statistical topics fit into a tertiary mathematics program at the introductory level?

Only in the 3rd year of teachers training, with little time charge against the requirements for proper teaching students