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Conocimiento y Naturaleza

The role of the IT Director of Higher Education in the era of digital society: the need to create synergy

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- State of University Higher Education in Chile
- CIO or IT Director in Chile and Other Countries (their hierarchy and structure)
- Director of IT and Educational Technologies
- Student Profiles
- Creating Synergies
- Conclusions

Where do we want to go?

- We know or have heard that :
 - we should innovate in teaching
 - educational technologies are essential for innovation
 - information technologies are strategic in different institutions
 - there has been a widespread increase in the use of smartphones and access to internet content
 - we have a huge amount of information
 - we have implemented diverse technologies aimed at supporting the process of learning, with innovation and improving educational processes in mind
- However, are we clear about what is happening in our institution right now?



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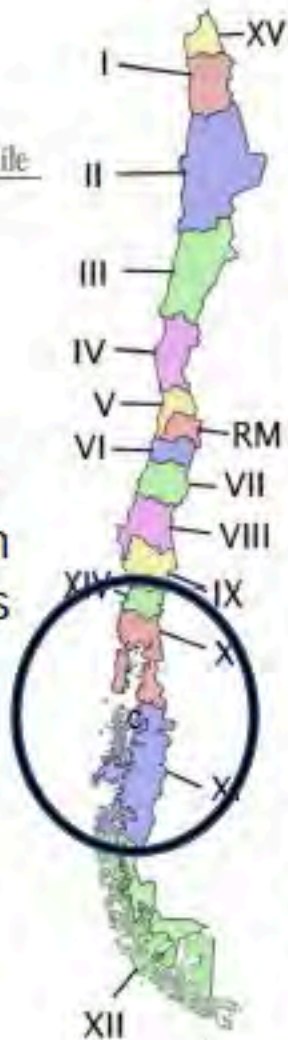
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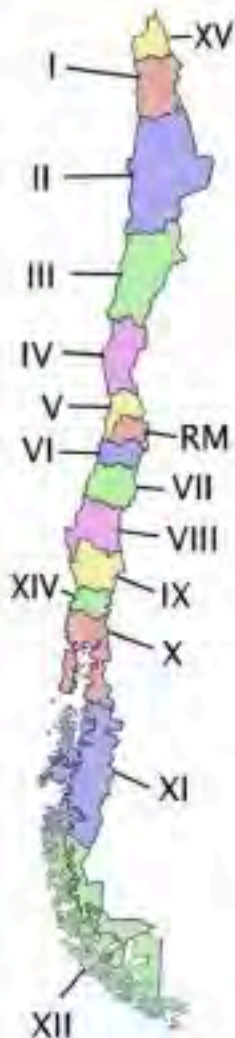
University Presence in the Regions



Chilean Regions	Presence of CRUCH Universities	Presence of Private Universities	Present of Total Universities	Number of Inhabitants	Number of Enrolled Undergraduates	Enrolled / Inhabitants
ARICA Y PARINACOTA (XV)	2	3	5	224.548	10.477	4,67%
TARAPACA (I)	2	3	5	324.930	12.257	3,77%
ANTOFAGASTA (II)	3	6	9	599.335	23.137	3,86%
ATACAMA (III)	1	2	3	285.363	8.220	2,88%
COQUIMBO (IV)	2	7	9	742.178	21.639	2,92%
VALPARAISO (V)	4	8	12	1.790.219	80.635	4,50%
METROPOLITANA (RM)	10	31	41	7.036.792	310.320	4,41%
LIBERTADOR BERNARDO OHIGGINS (VI)	5	3	8	908.545	5.785	0,64%
MAULE (VII)	2	6	8	1.033.197	29.600	2,86%
BIOBIO (VIII)	4	12	16	2.018.803	77.806	3,85%
LA ARAUCANIA (IX)	4	5	9	938.626	36.476	3,89%
LOS RIOS (XIV)	1	4	5	380.181	17.481	4,60%
LOS LAGOS (X)	2	4	6	823.204	22.104	2,69%
AYSEN (XII)	3	1	4	102.317	1.077	1,05%
MAGALLANES (XIII)	1	1	2	165.593	4.544	2,74%



Enrollment by College Type 2019 Intake



Chilean Regions	Municipal / State	Private with State Subsidies	Private
ARICA Y PARINACOTA (XV)	38,16%	57,87%	3,97%
TARAPACA (I)	26,79%	70,28%	2,92%
ANTOFAGASTA (III)	40,20%	46,47%	13,32%
ATACAMA (III)	45,94%	51,16%	2,90%
COQUIMBO (IV)	23,40%	70,28%	6,32%
VALPARAISO (V)	18,25%	61,08%	20,67%
METROPOLITANA (RM)	19,88%	49,77%	30,34%
LIBERTADOR BERNARDO OHIGGINS (VI)	43,30%	42,13%	14,57%
MAULE (VII)	39,06%	53,55%	7,39%
BIOBIO (VIII)	32,91%	52,30%	14,79%
LA ARAUCANIA (IX)	33,88%	59,99%	6,13%
LOS RIOS (XIV)	37,69%	51,86%	10,45%
LOS LAGOS (X)	42,55%	53,04%	4,40%
AYSEN (XI)	31,28%	65,64%	3,08%
MAGALLANES (XII)	41,05%	51,35%	7,60%



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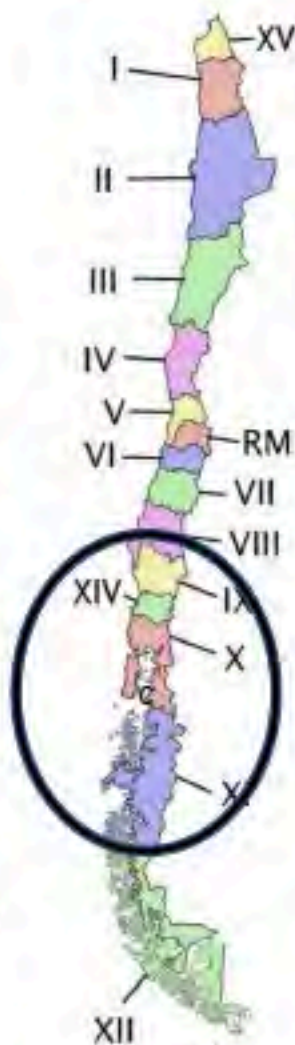
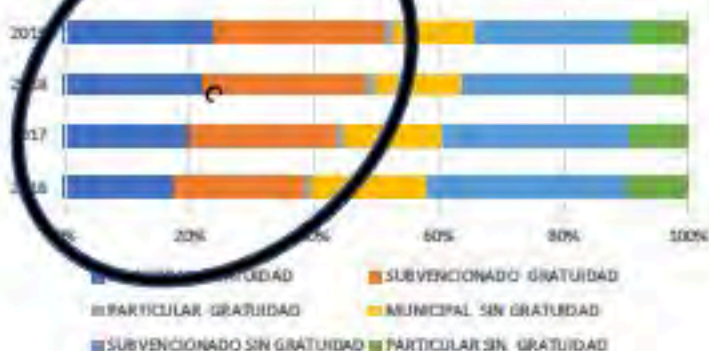
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Case of UACH

Tasa de alumnos con y sin gratuidad



Distribución Gratuidad por Tipo de Colegio



Chilean Regions	2016	2017	2018	2019
ARICA Y PARINACOTA (XV)	0,14%	0,17%	0,23%	0,25%
TARAPACA (I)	0,29%	0,32%	0,31%	0,26%
ANTOFAGASTA (II)	0,31%	0,36%	0,39%	0,40%
ATACAMA (III)	0,25%	0,21%	0,17%	0,19%
COQUIMBO (IV)	0,37%	0,42%	0,51%	0,46%
VALPARAISO (V)	1,14%	0,98%	1,06%	1,08%
METROPOLITANA (RM)	4,65%	4,86%	5,27%	5,61%
LIBERTADOR BERNARDO OHIGGINS (VI)	1,07%	0,99%	1,02%	1,01%
MAULE (VII)	0,72%	0,71%	0,75%	0,84%
BIOBIO (VIII)	1,65%	1,62%	1,63%	1,24%
LA ARAUCANIA (IX)	4,68%	4,54%	4,40%	4,36%
LOS RIOS (XIV)	38,16%	37,78%	36,93%	36,42%
LOS LAGOS (X)	39,20%	39,53%	39,86%	40,20%
AYSEN (XI)	5,81%	6,02%	6,04%	5,75%
MAGALLANES (XII)	1,55%	1,50%	1,45%	1,63%



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CIO or IT Director in Chile and Other Countries (their hierarchy)

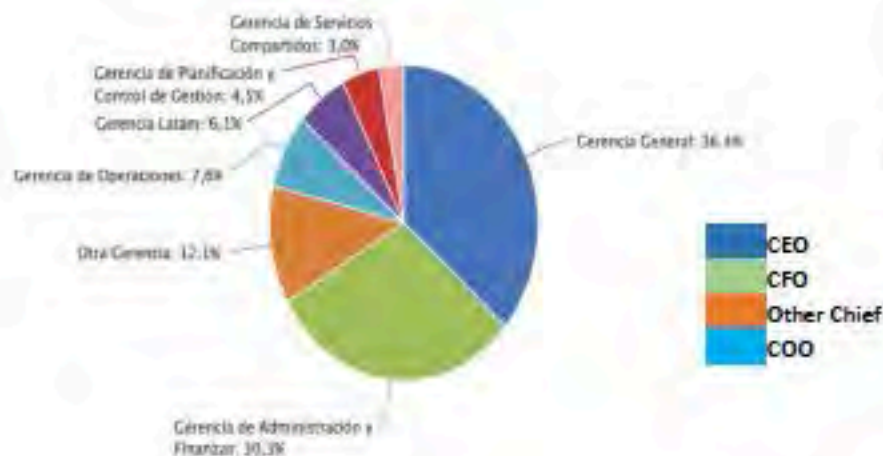
Do they have a strategic role in HE?



National Study (all types of organizations)

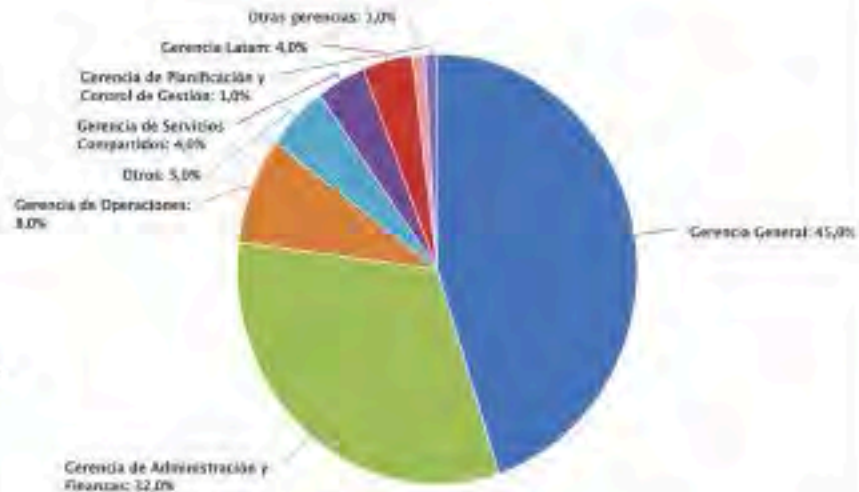
Dependencia organizacional

Todas las organizaciones
N = 109



Dependencia organizacional

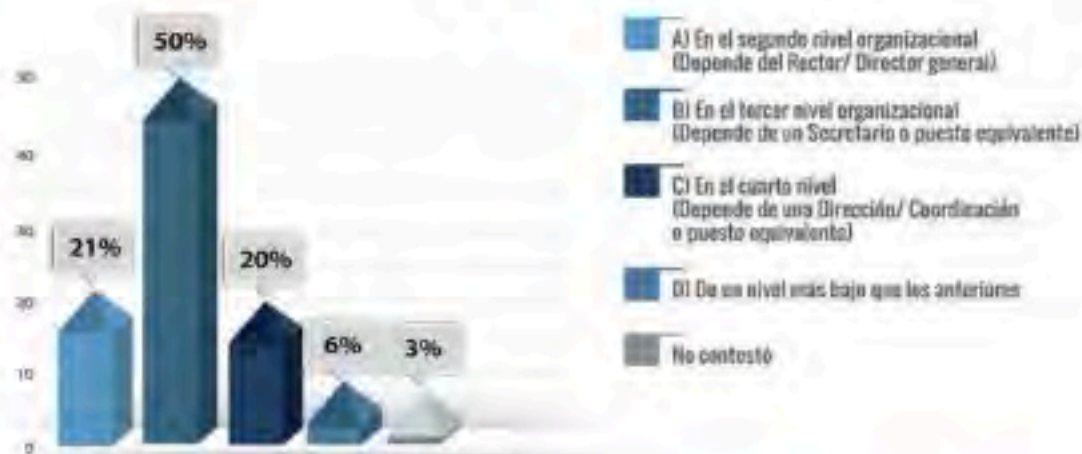
Todas las organizaciones
N = 114





Situation in Mexico

Figura 2.2.8 Nivel de la Organización en el que está ubicado el puesto del Director de TI en las IES



"1 de cada 2 IES informan que TI está en un tercer nivel organizacional y sólo 1 de cada 5 depende del primer nivel (Rector, Director General, etc.)."



Current Situation in Spain

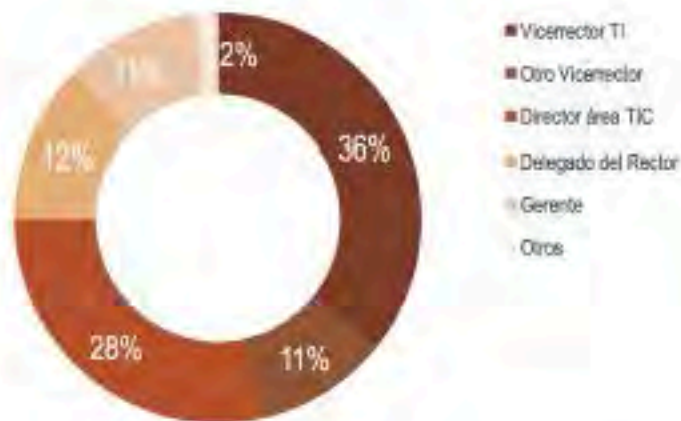


Gráfico 2. 19. Cargo del máximo responsable de las TI en la universidad

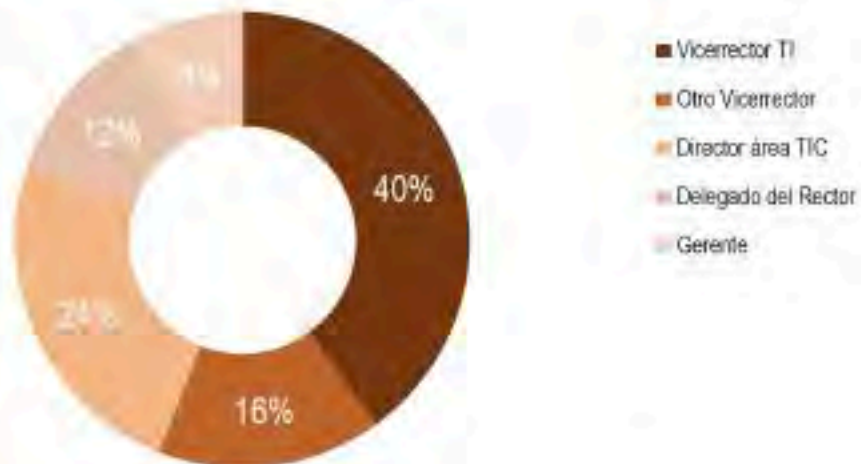


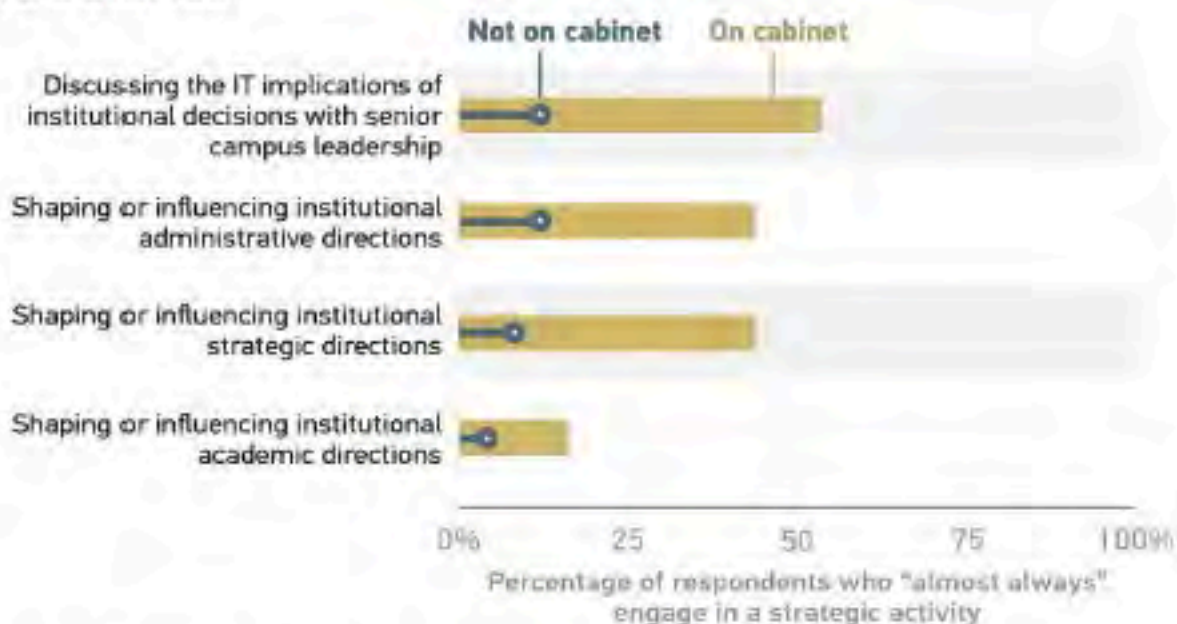
Gráfico 3. 17. Cargo del Responsable TI en la universidad



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Educause, the IT Workforce in Higher Education, 2019: CIOs, DEI, HR, Mentoring, and Salaries



Source: The IT Workforce in Higher Education, 2019: CIOs, DEI, HR, Mentoring, and Salaries 2019



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Director of IT
and Educational
Technologies



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What do we do as IT Management?

- Do we use educational technologies to add value to the educational processes of our university?
- Do we know how to do so?
- What is the role of the IT Directors in this (crucial) part of the digital transformation of universities?



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Metared Chile – Vice Chancellors (CFO)

- Only one university is in the process of creating an IT Vice Chancellor
- The remaining universities generally depend on a Vice Chancellor of Finance or Economic Governance
- Why? Is this right?
- What is our purpose as IT teams or IT management?
- What should our target be in the digital age?

Yes, we face difficulties

- How to change the academic culture so that the impact of IT on the educational process can be understood and incorporated.
- How to make the IT areas into a point of reference for technology in the educational process. Become a partner in this process and not be seen as IT support.
- How to create synergy in order to evolve together with educational technologies.
- Do our students know the potential impact of the technologies on their education?



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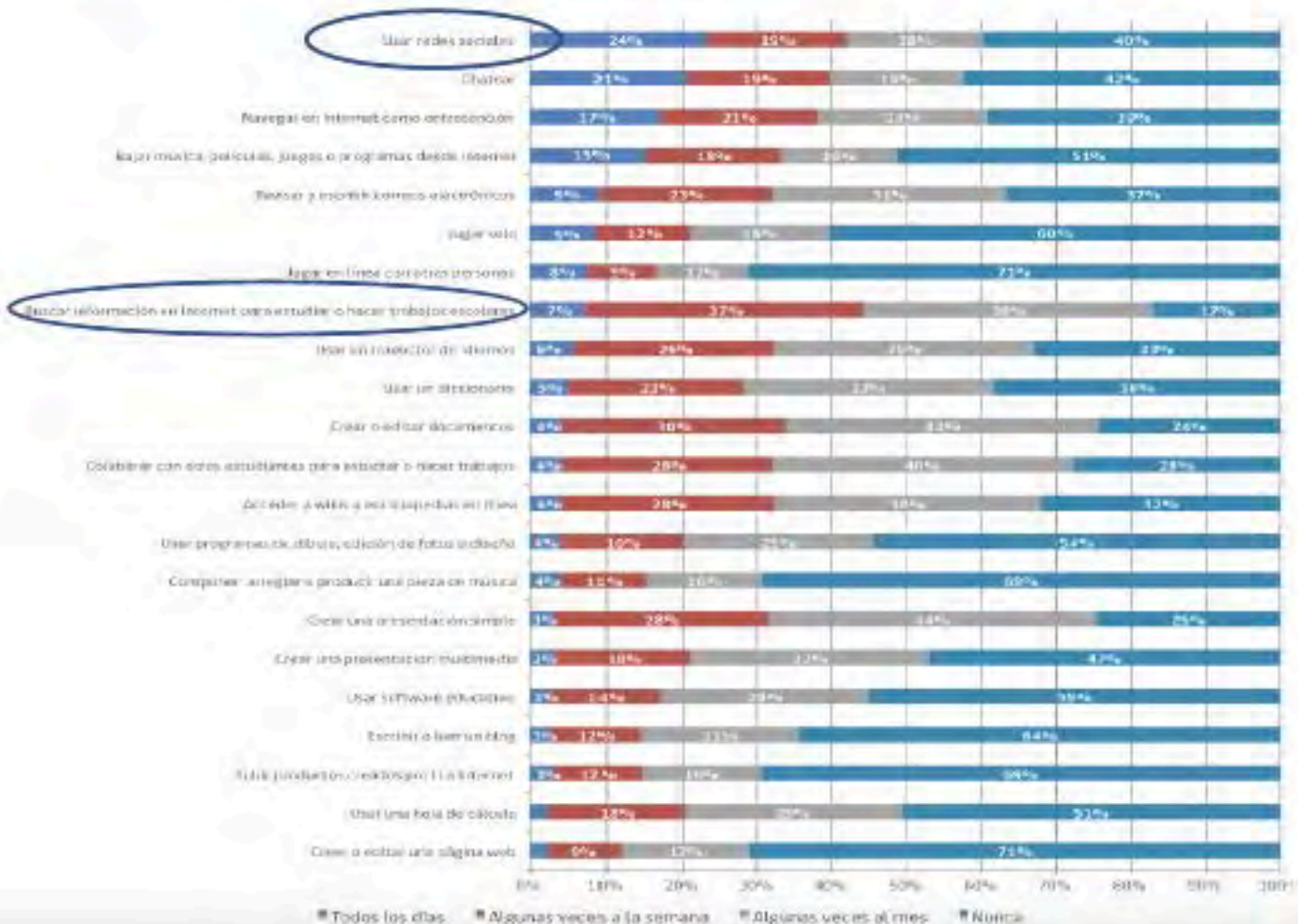


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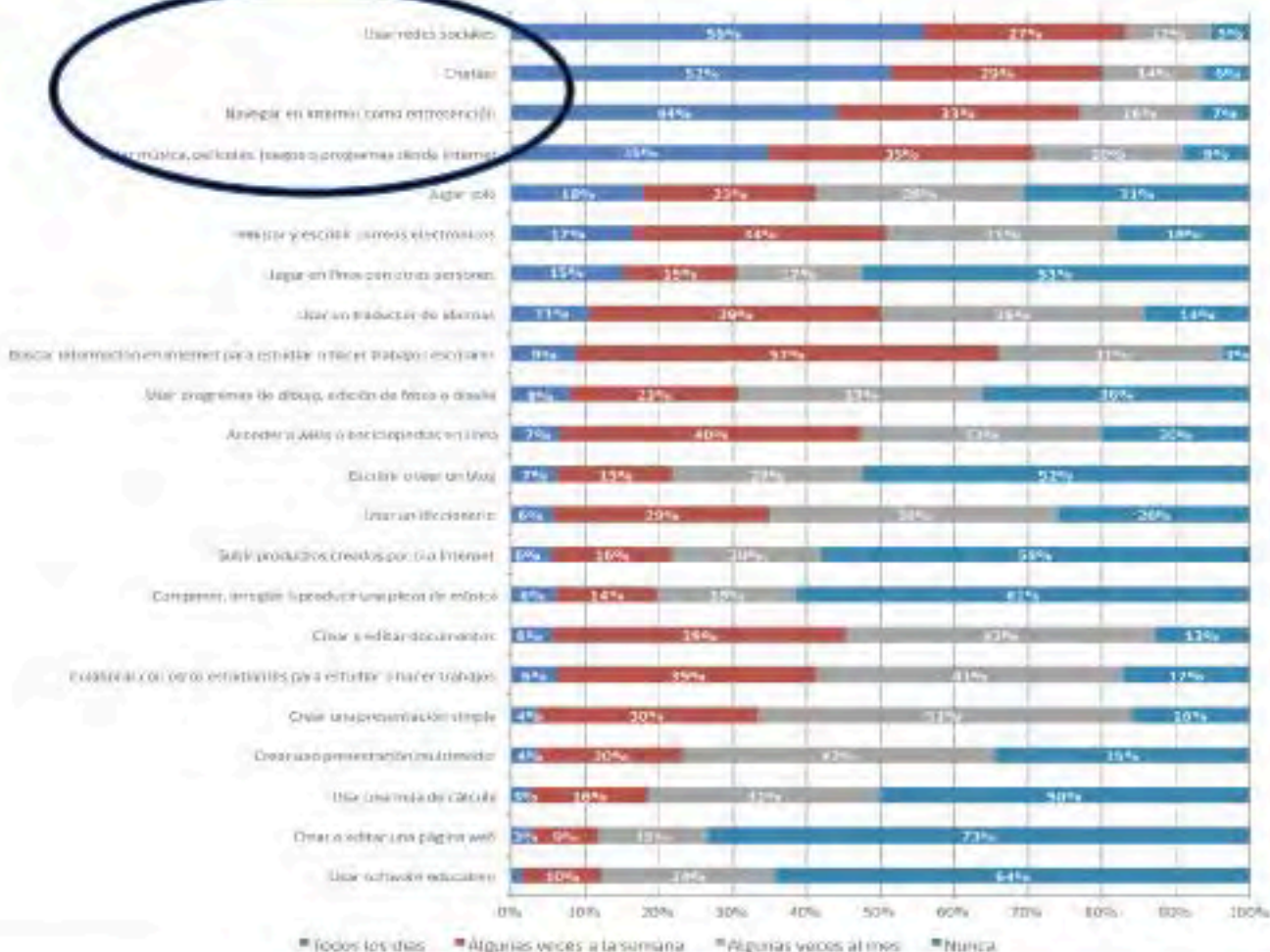
Student
Profiles

Gráfico 12. ¿Con qué frecuencia usas el computador en el establecimiento educacional para estas actividades?



Source: SIMCE TIC Informe Final

Gráfico 13. ¿Con qué frecuencia usas el computador fuera del establecimiento educacional para estas actividades?



Source: SIMCE TIC Informe Final



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88.8% of students have a computer at home.
76.1% have internet access.



Source: SIMCE TIC 2013



The majority of students indicate a desire to improve their computational proficiency and 70% declare an interest in technology.

More than 50% state that they connect **DAILY** to social media to chat or converse. 66% look for information on the internet to study or complete tasks **AT LEAST ONCE A WEEK**.

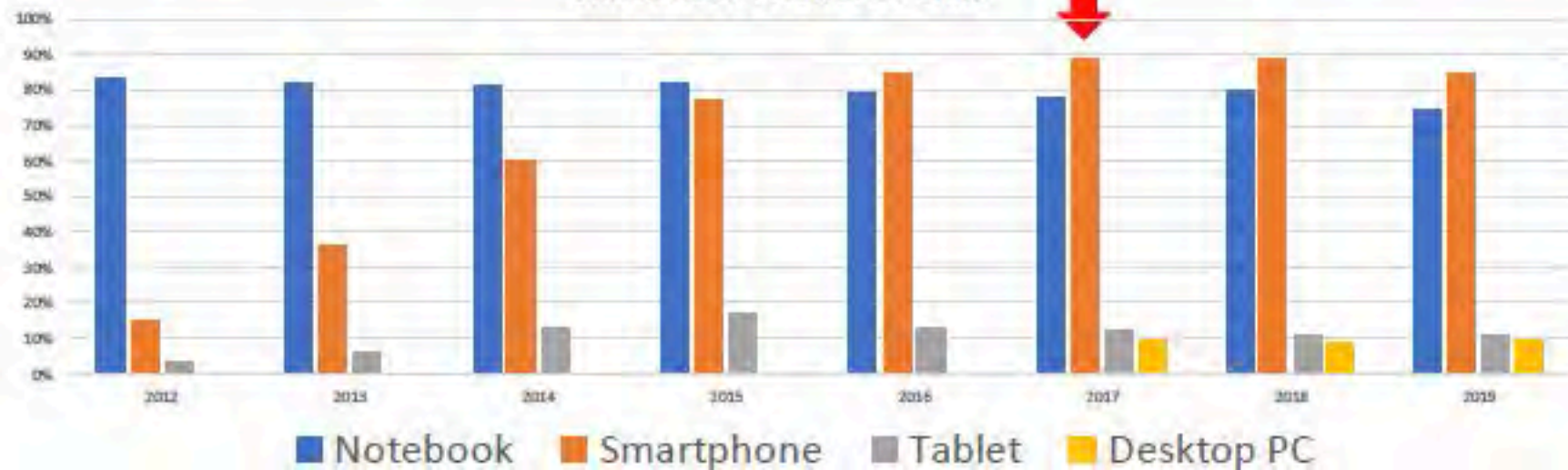


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What technologies do our new students have and use?

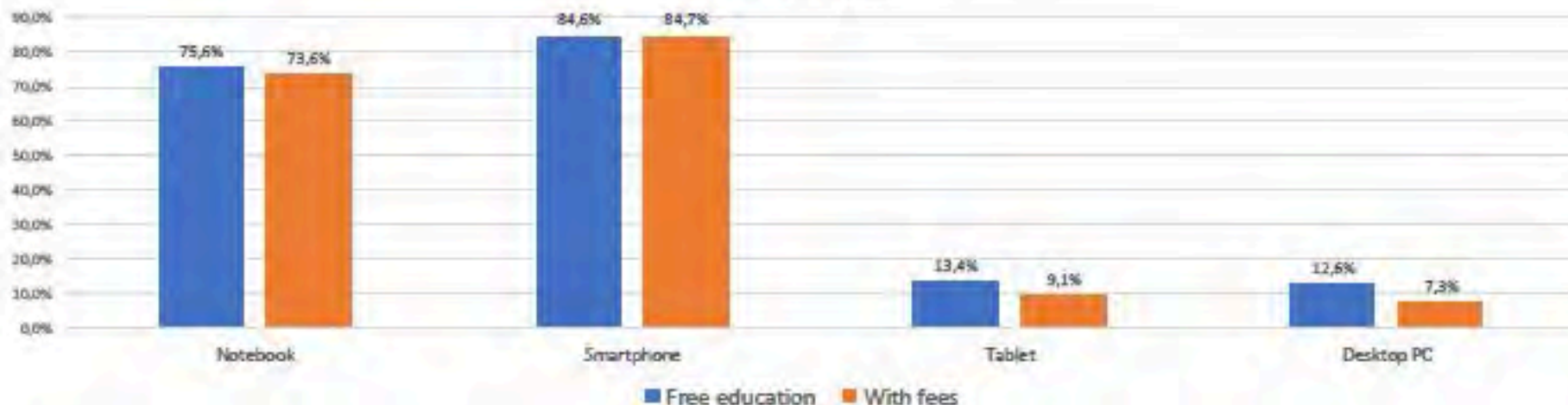
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What technologies do our new students have and use?

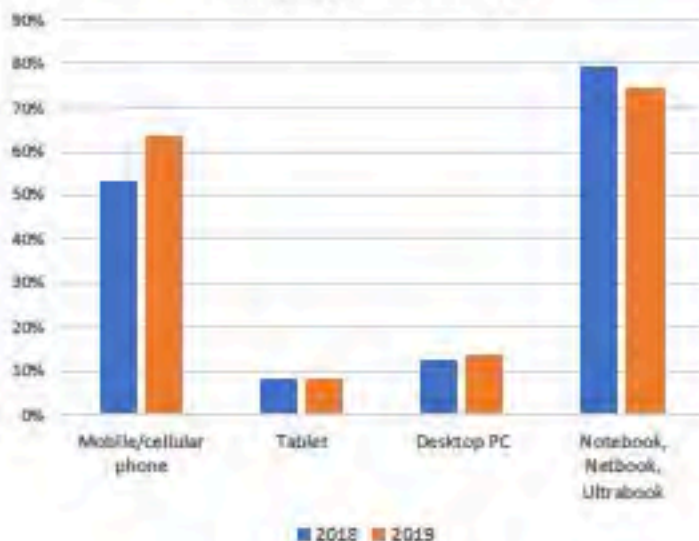
% of mobile devices 2019 new students (by economic level)



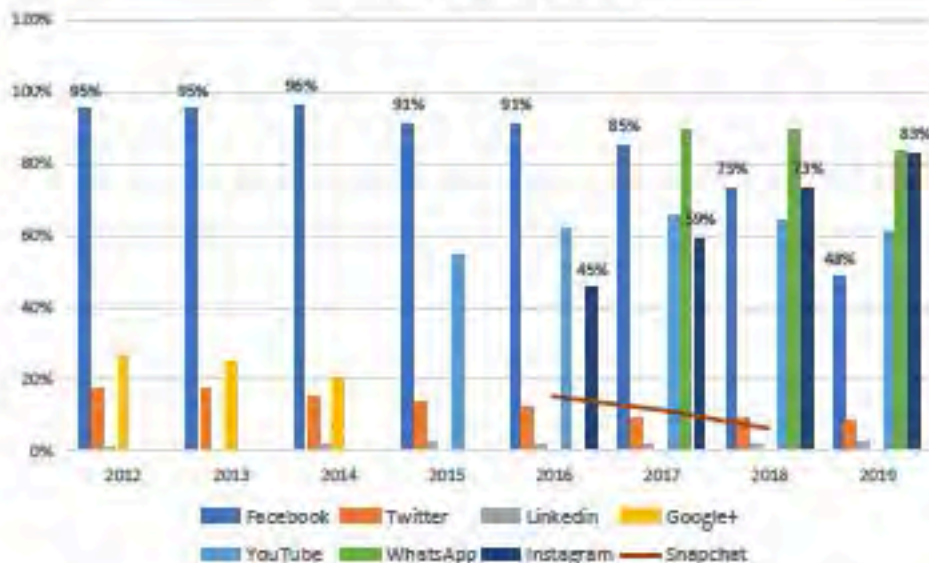


What technologies do our new students have and use?

What device do you use for study? (UACH case)



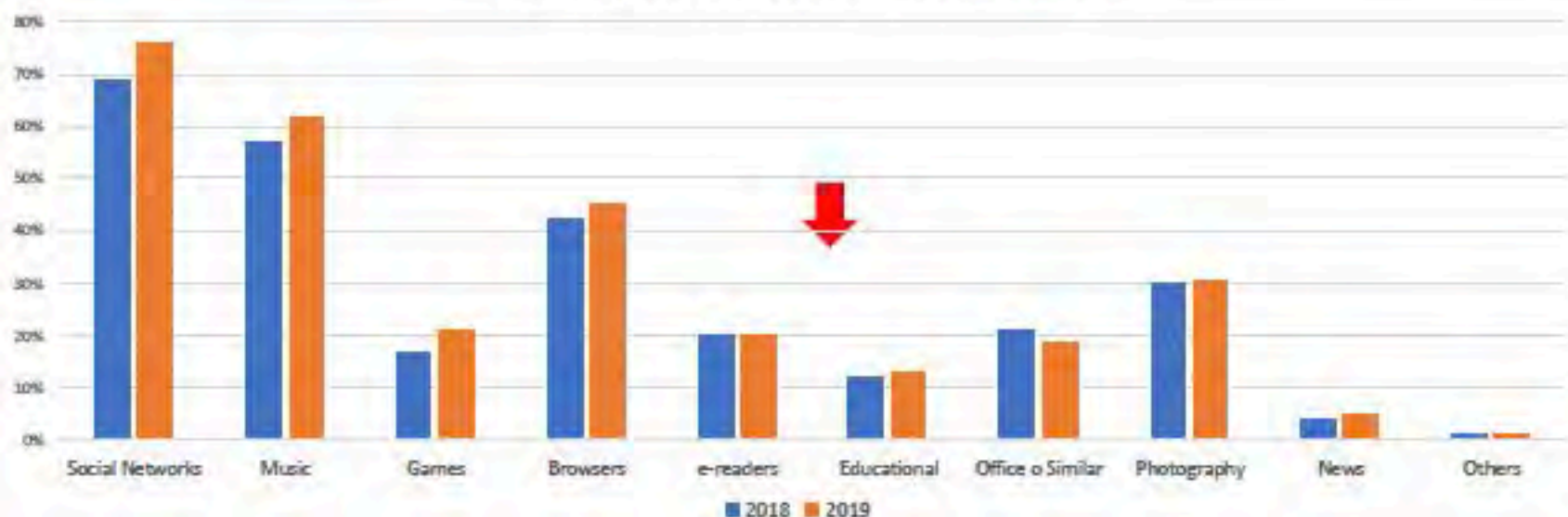
What social networks do you use most often? (UACH case)





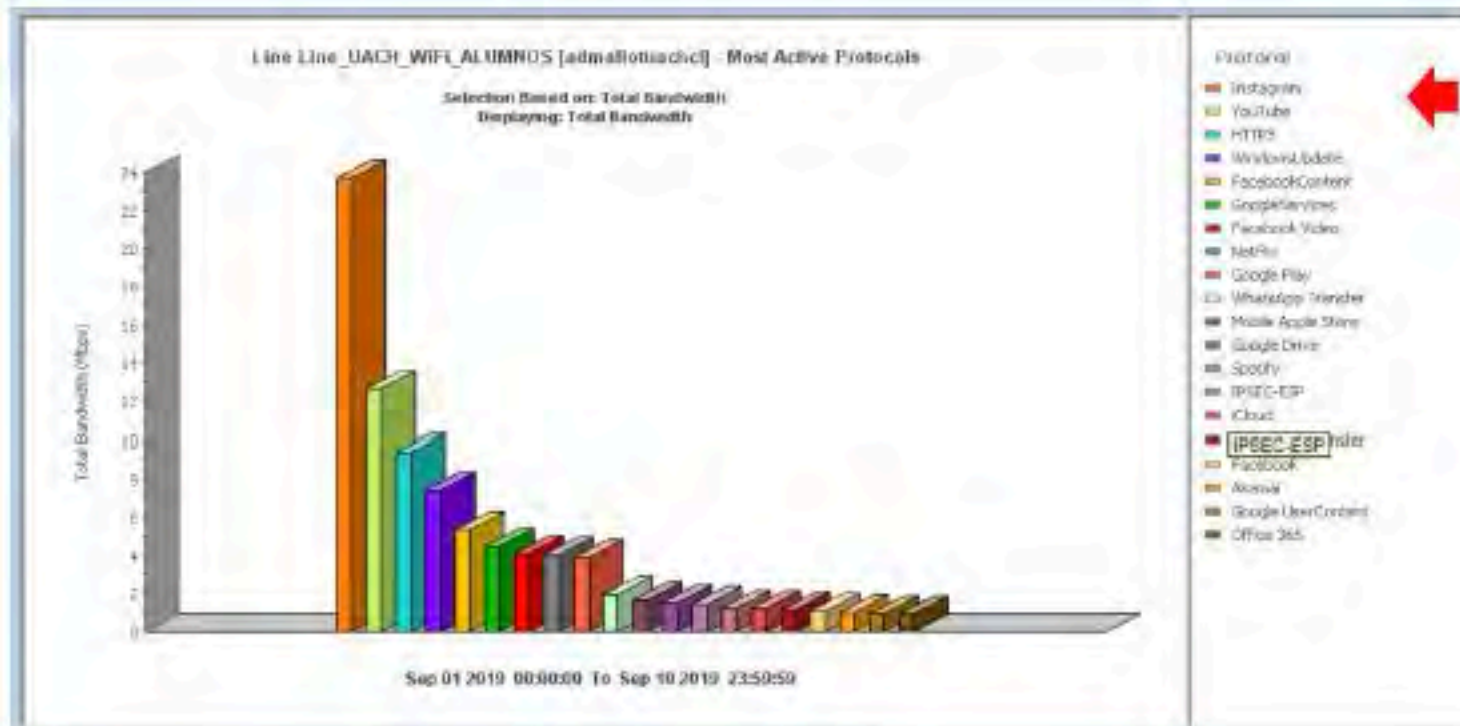
What technologies do our new students have and use?

What app do you use most often?



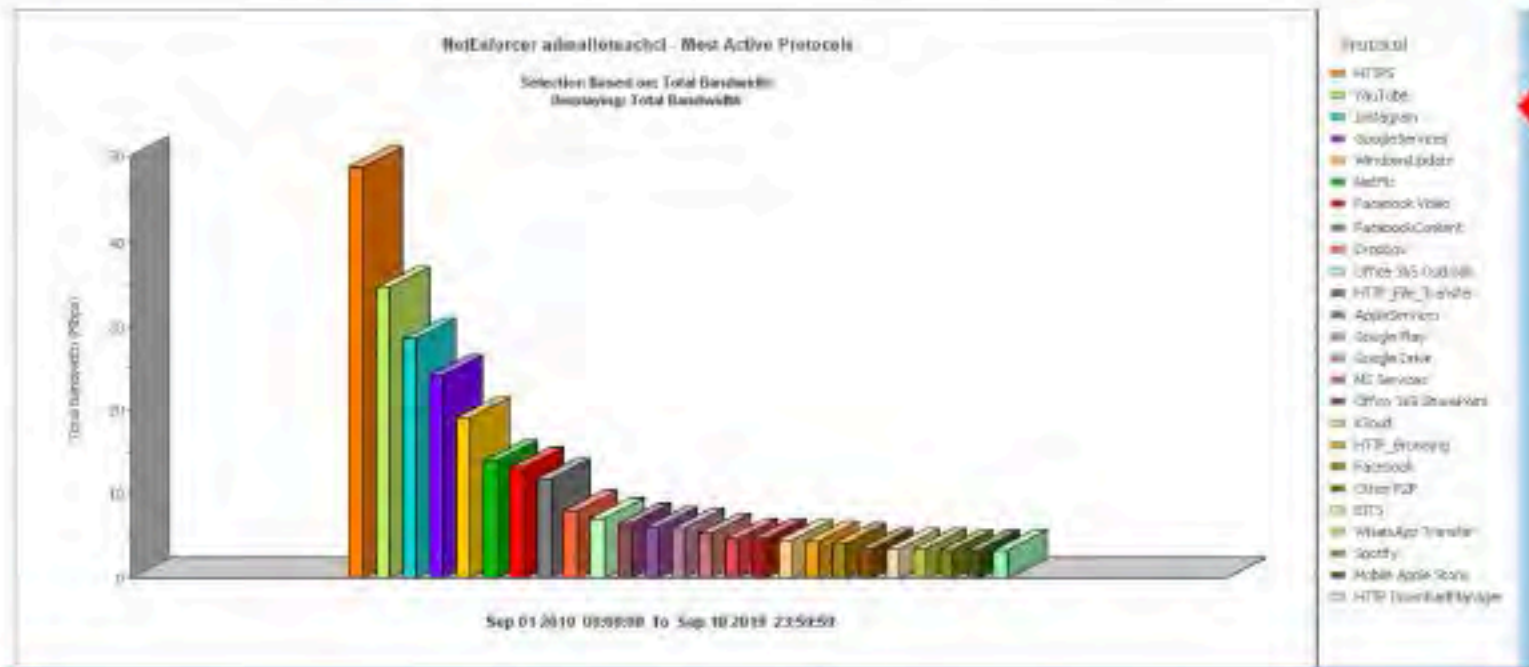


Use of WiFi by students





Usu of WiFi by academics and staff



Total use of Wifi



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NetEUFORCS: admw@uach.cl - Most Active Protocols

Selection Based on: Total Bandwidth
(Displaying: Total Bandwidth)



Sep 01 2010 00:00:00 To Sep 10 2010 23:59:59

Protocol

- HTTP
- YouTube
- Tiscali
- GoogleServices
- WindowsUpdate
- Netflix
- Facebook Video
- Facebook Content
- Dropbox
- Office 365 Outlook
- HTTP File Transfer
- Apple Services
- Google Play
- Google Drive
- MS Services
- Office 365 SharePoint
- iCloud
- HTTP Downloading
- Facebook
- Other POP
- BTS
- WhatsApp Transfer
- Spotify
- Mobile Apple Store
- HTTP Download Manager





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Creating
Synergies



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Partnership

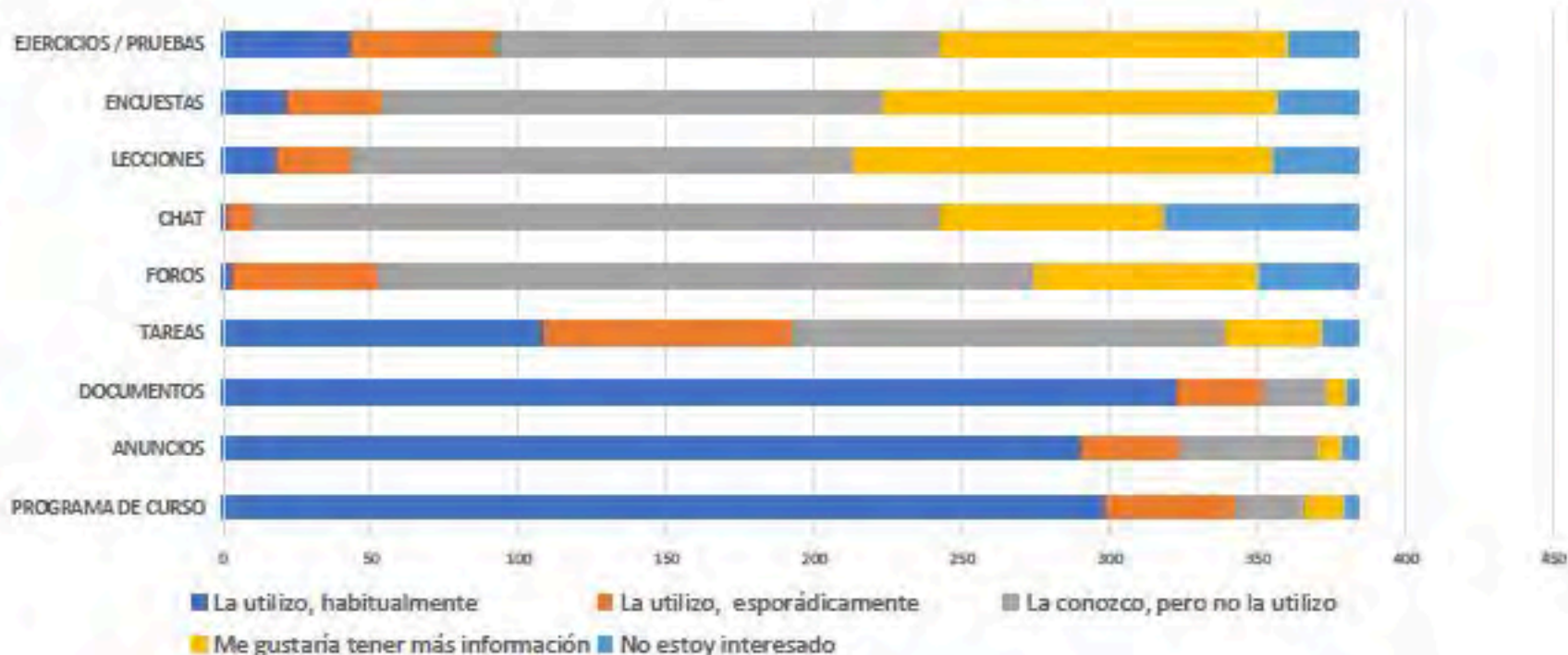
- Due to the replacement of the LMS, the academic area together with the IT area should evaluate the use of, and difficulties with, the current LMS
- Initiate a partnership between the academic and IT areas
- Develop a survey to determine:
 - Teaching methods used by the academics
 - Methodologies they would be interested in knowing about
 - LMS tools being used
- 398 academics responded



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Use of LMS tools (N=384)

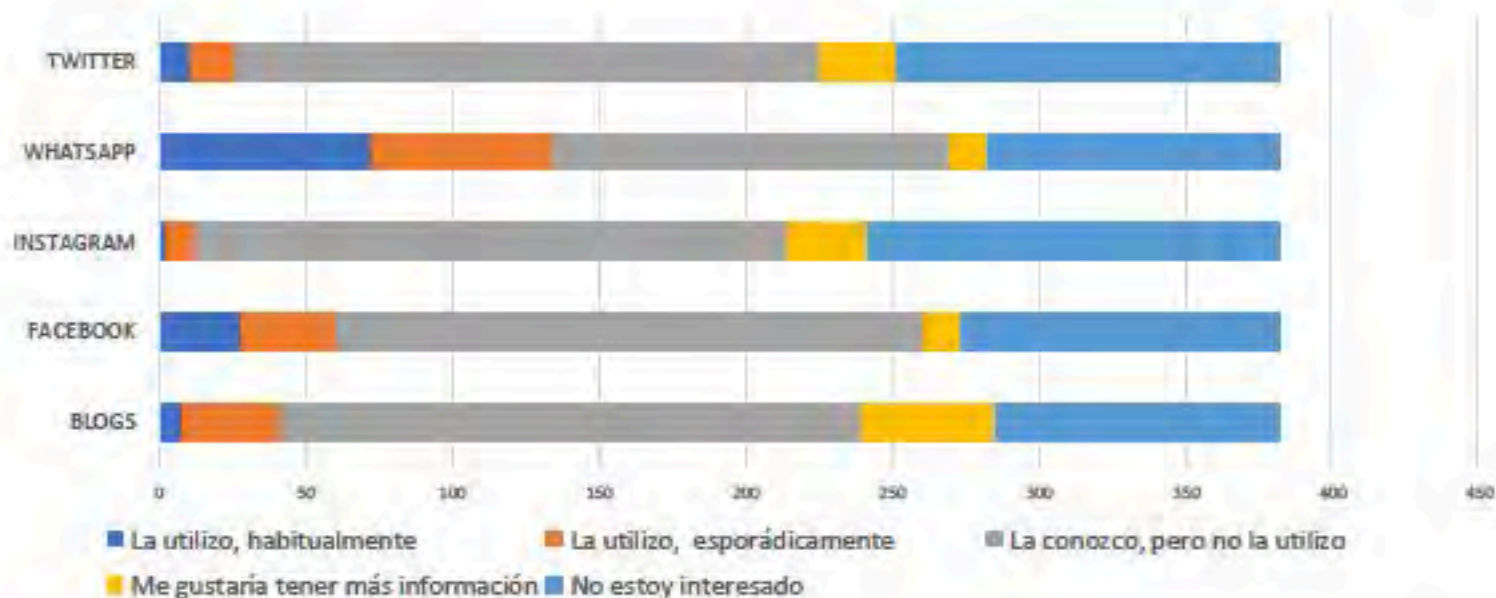




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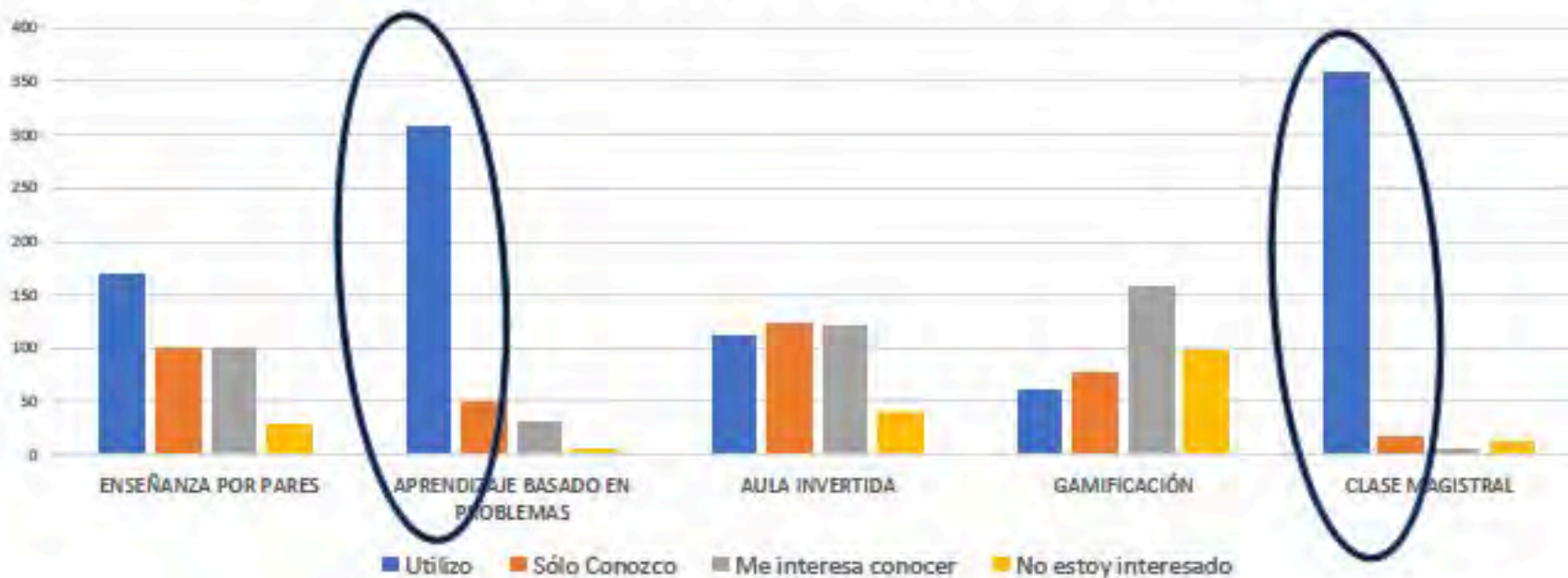
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Social networks as part of the educational process (N=384)





Methodologies used (N=398)





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Is this the way to shape our professionals?

- Nowadays we must develop students with personal and interpersonal skills
- Innovate - “learning by doing” and “learning by developing” (prototyping)
 - Proactive
 - Active
 - Creative
 - Multi-disciplined
 - Collaborative
- Active learning (the student should be the protagonist)



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To consider

Digital-educational technologies should be seen as a flexible form of support, that favors student-centred education, helping to promote curiosity, creativity and collaboration among other fundamental skills related with 21st century society.



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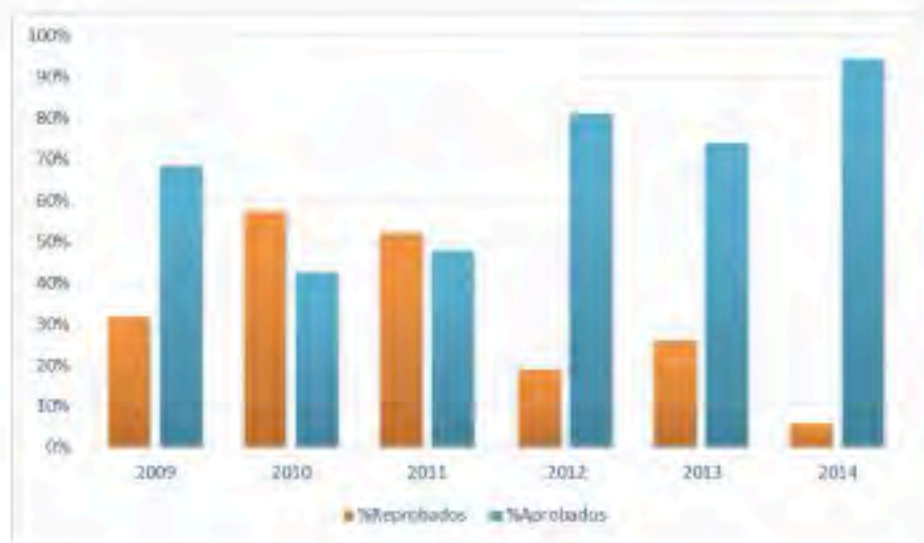
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In the digital age

- The growth (evolution) of IT and higher education is provoking changes in the formation of people:
 - Today we have access to content in a range of forms and languages
 - We can develop more individualized learning
 - Learning is ubiquitous (the world is a classroom)
 - There is no age-limit on learning

Flipped classroom (academic case of Ana María von Chrismar - 2014)

- Veterinary medicine course (INFECTIOUS DISEASES IN DOMESTICATED ANIMALS)
- Upload videos to the LMS before class
- Entry test (upon arrival)
- Use keyboards and Socrative app
- Group work



Case of Calculation course (2018)

- Calculation for Engineering
- FlippedClassroom
- LMS : Video and guides
- Classes: The class is a workshop around the knowledge acquired
- Teamwork
- Every workshop is evaluated, recognizing what has been learnt

28,32%

25,42%

21,21%

0%

10%

20%

30%

40%

50%

60%

70%

80%

90%

100%

2016

2017

2018

Rate

Approved

Reapproved

3D Anatomy

SOBRE NOSOTROS

Conoce nuestro proyecto

Anatomía Humana 3D

Este proyecto es parte de un curso de actualización docente en tecnología educativa en la Facultad de Medicina de la Universidad Autónoma de Bucaramanga y tiene como fin brindar al docente de la asignatura de Anatomía Humana un recurso digital de aprendizaje interactivo y multimedia que facilite el aprendizaje de los contenidos de la asignatura. El proyecto es parte de un curso de actualización docente en tecnología educativa en la Facultad de Medicina de la Universidad Autónoma de Bucaramanga y tiene como fin brindar al docente de la asignatura de Anatomía Humana un recurso digital de aprendizaje interactivo y multimedia que facilite el aprendizaje de los contenidos de la asignatura.



NUESTRO EQUIPO



DONALDO TEZNADO MATZNER

Docente de la asignatura de Anatomía Humana



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Docente de la asignatura de Anatomía Humana



**IWIERA CONSTANZA Y
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**PATRICIA HERNÁNDEZ
COLLIER**

Docente de la asignatura de Anatomía Humana



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Conclusions

- The integration of digital media in teaching and learning is a complex process of negotiation between different stakeholders within the universities.
- Until now there are only personal initiatives without an institutional view.
- In order to determine their needs, we must know the technological profile of our students and academics.
- Alliances between stakeholders must be generated in order to initiate a Digital transformation
- It is of the utmost importance that the Rectorate team takes this initiative



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CHILE



Our Teams!!!



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Gracias