

Research conversation with CLEHN Lab



Francisco José García-Peñalvo

María José Rodríguez-Conde

GRIAL Research Group

Research Institute for Educational Sciences (<https://ror.org/00xnj6419>)
Universidad de Salamanca (<https://ror.org/02f40zc51>)
Salamanca, Spain

fgarcia@usal.es mjrconde@usal.es

<http://grial.usal.es>



Research Group
Interaction and Elearning
University of Salamanca



VNiVERSIDAD
D SALAMANCA

2^{ème} Edition du Colloque International
Communication et Transformation
Numérique: Enjeux, Dynamiques et
Pratiques Innovantes
16 mai 2025

GRIAL Research Group

University of Salamanca



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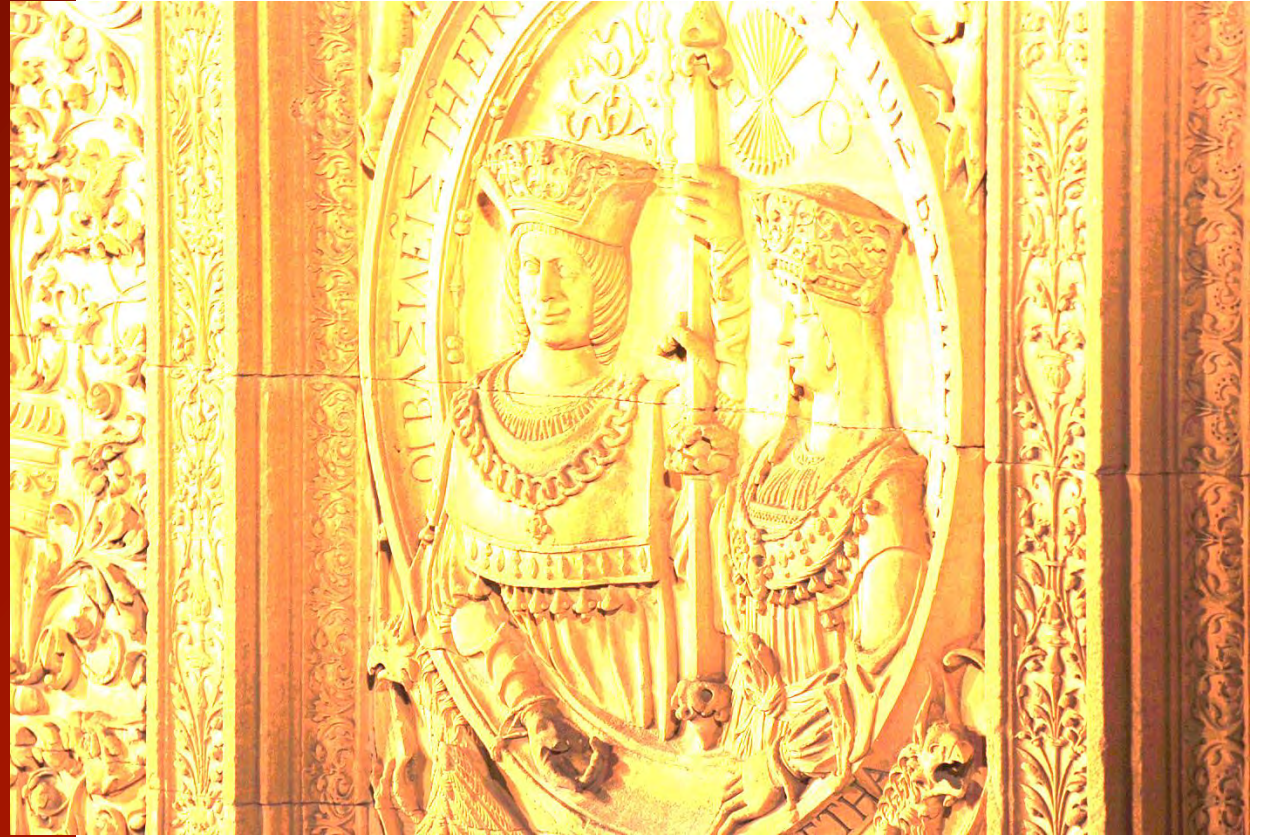
○

Situation

- Research group recognized by the University of Salamanca in 2006
- Castilla y León Regional Government Excellence Group from 2007 to 2016 (GR47)
- Consolidated Research Unit of the Junta de Castilla y León granted in July 2015 and renewed in May 2018, June 2021, and June 2024 (UIC 081)
- <https://grial.usal.es>

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○ ●

Institutional context



University of Salamanca - USAL
<https://www.usal.es>

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Institutional context



INSTITUTO UNIVERSITARIO
DE CIENCIAS DE LA EDUCACIÓN

Research Institute for Educational Sciences

<https://iuce.usal.es/>

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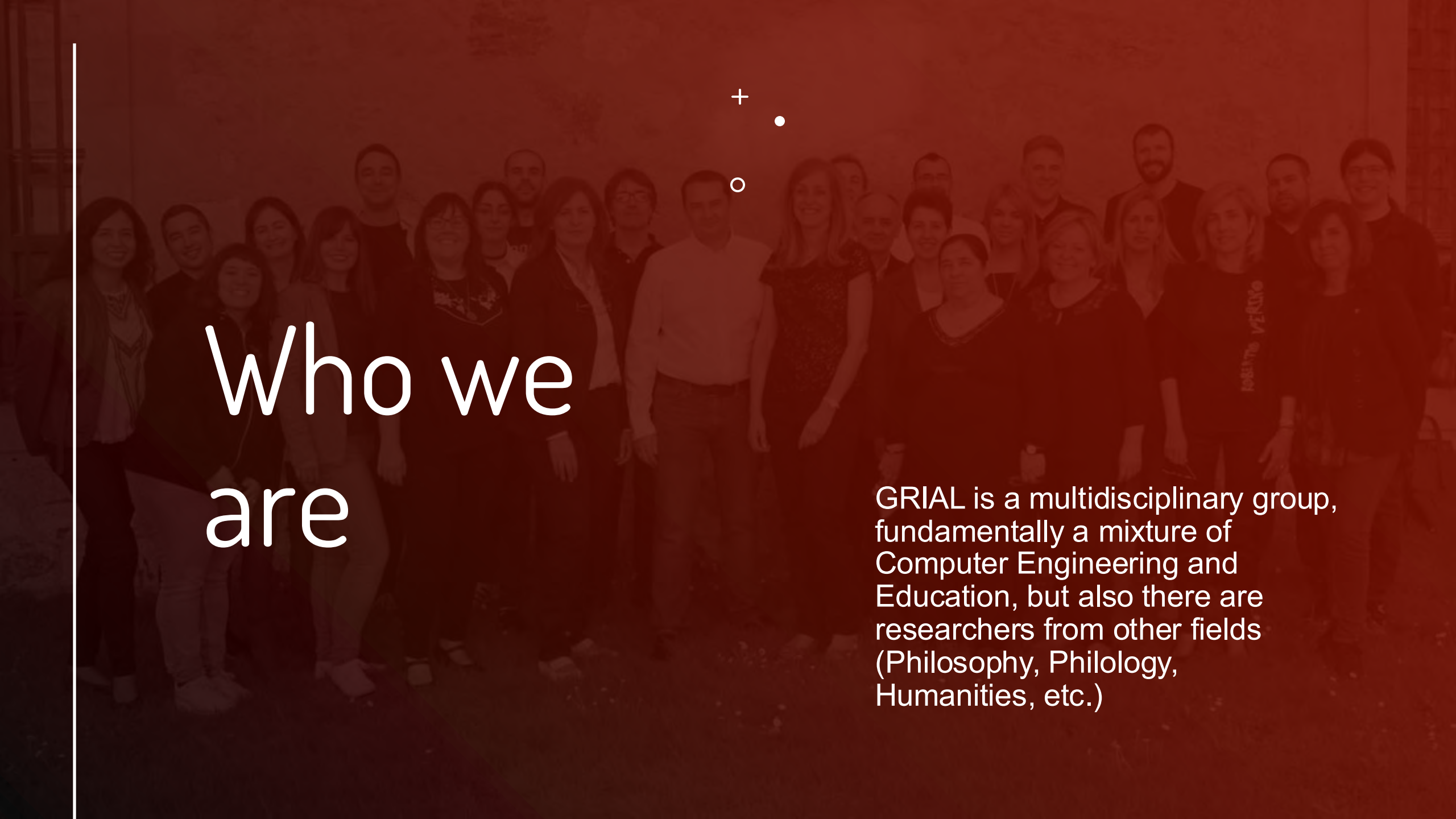
Institutional context



+ Institutional ○ context

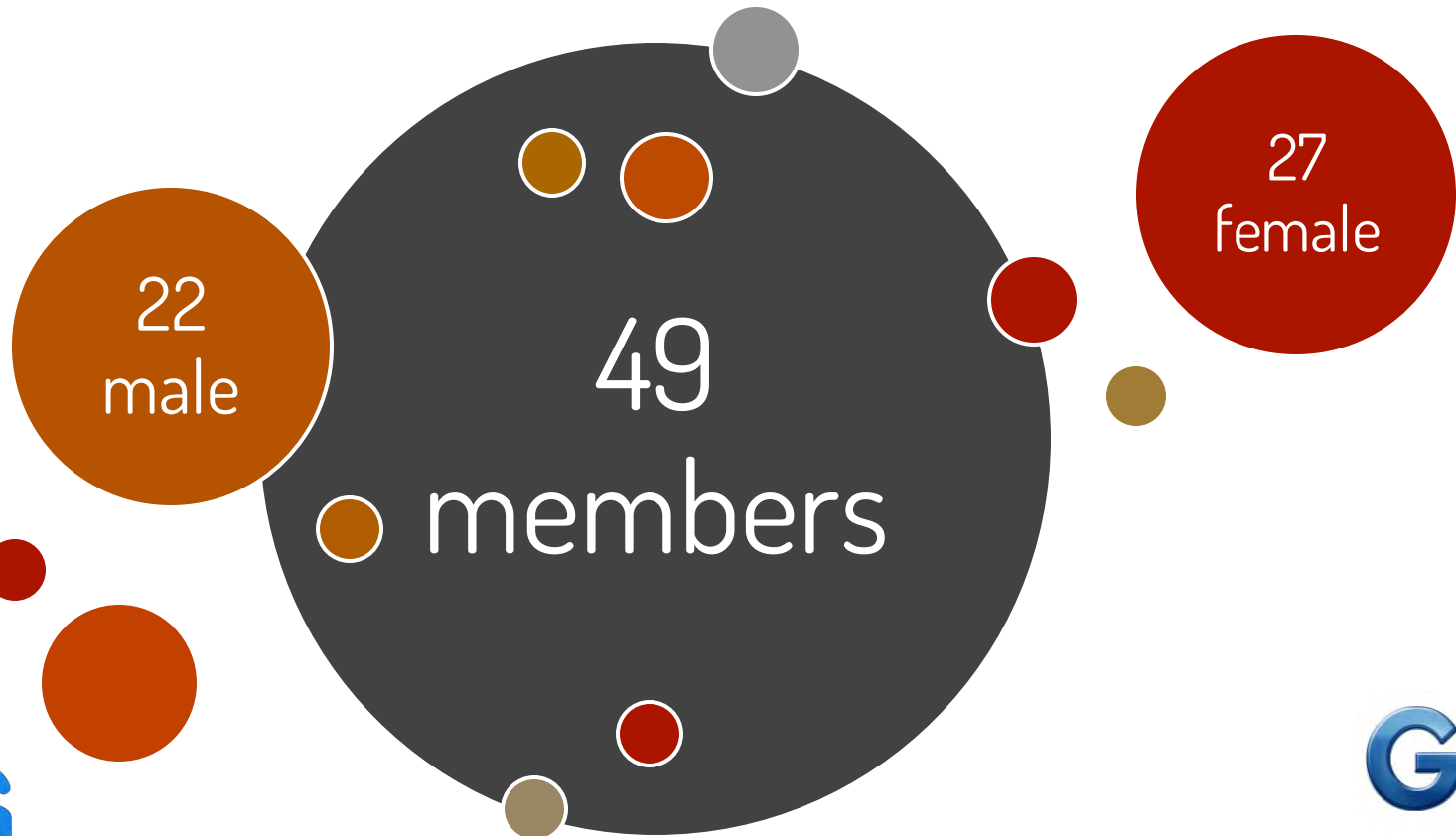
The IUCE is characterized by its **interdisciplinary** nature, in its **research and promotion** of **pedagogical innovation** and university teacher training.





Who we are

GRIAL is a multidisciplinary group, fundamentally a mixture of Computer Engineering and Education, but also there are researchers from other fields (Philosophy, Philology, Humanities, etc.)



M^a José Rodríguez Conde



Francisco J. García Peñalvo

What we do

Research lines

- Digital humanities
- eLearning methodologies
- ICT and educational innovation
- Information science
- Interactive learning systems
- Learning Technologies
- Quality and assessment in education
- Social responsibility and inclusion
- Strategic management of knowledge and technology
- Technological ecosystems
- Visual analytics
- Web engineering and software architecture



What we do

SNOLA

SNOLA – Spanish Thematic Network of Learning Analytics



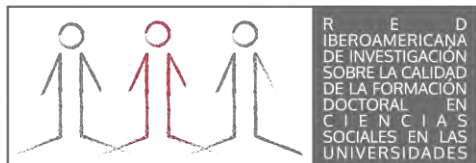
RIIE – Spanish Thematic Network of Learning



Ibero-American Network for Innovation and Research in Technologies and Uses in E-Learning (Red Iberoamericana de Innovación e Investigación en Tecnologías y Usos en el Aprendizaje Electrónico) (RED RITUAL) – México



International Research Network Openergy – México



Ibero-American Network of Research on the Quality of Doctoral Education in Social Sciences

Projects

International



ORIGEN: Oportunidades de Emprendimiento en comunidades Rurales e Indígenas

Ongoing



RETOS-INDIGENIUS: Inspirando Futuros STEM

Closed

Metodología para diseñar entornos virtuales de aprendizaje Innovadores en Posgrados: Estudio de caso

Closed

Ecosystem for scaling up computational thinking and reasoning for complexity

Closed

OEM4C: Open Educational Model for Complex Thinking

Closed

OpenEdR4C: Education 4.0 Platform to strengthen Scientific, Technological, and Social Entrepreneurship through Scaling Complex Thinking Competencies

Closed

Open and inclusive education: WUN and UNESCO training & research networks

Closed

EduToolkit: innovación con inteligencia artificial para desarrollar la competencia de emprendimiento social y procesos de vinculación

Closed

Aumento de la visibilidad de RITEC mejorando la experiencia de usuario y su interoperabilidad con el Repositorio Nacional

Closed

Determinación de los factores y actores que influyen en la percepción de los adolescentes hacia la ciencia y la tecnología: Análisis de estudio de género

Closed

Subproyecto Innovación abierta, interdisciplinaria y colaborativa para formar en sustentabilidad energética a través de MOOC

Closed

Mi Compu.MX

Closed

European

Enhancing Female Leadership In STEM in CHINA - FAITH

Ongoing



Green Agripreneurs of Future

Ongoing



Empowering Women in Tech Innovation and Entrepreneurship by developing a Supportive Ecosystem in Higher Education Institutions

Ongoing



DEsign Tools of Artificial Intelligence in Sustainability Living LabS

Ongoing



Training SEN teachers to use robotics for fostering STEAM and develop computational thinking

Ongoing



HerStory - Combating gender stereotypes by highlighting women's contribution to the history of societies

Closed



Security and Privacy in Academic Data management at Schools - SPADATAS

Closed



Promoting Resilience and Employability in university (PREVIEW)

Ongoing

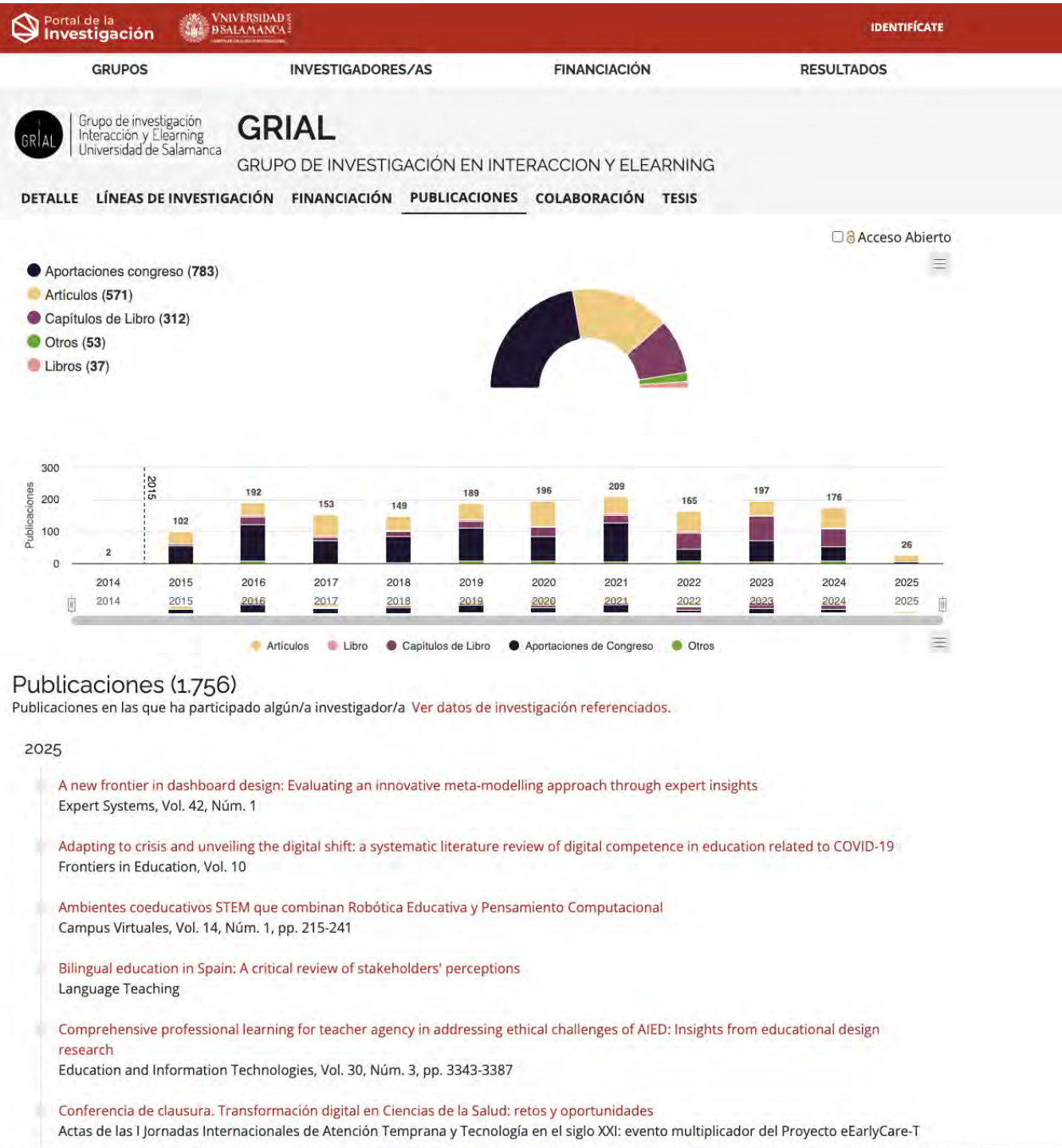
What we do

Services

- Customized training plans (specialized in eLearning, ICT, social networks)
- Development of technological solutions for learning and knowledge management
- Consultancy in information systems and technological ecosystems
- Comprehensive eLearning advice and consultancy
- Installation, support, and customization of eLearning platforms
- Development of training content on demand
- Support and collaboration in project management
- Collaboration in R+D / R+D+i initiatives
- On-demand training (specialization in eLearning, ICT, etc.)



Research production



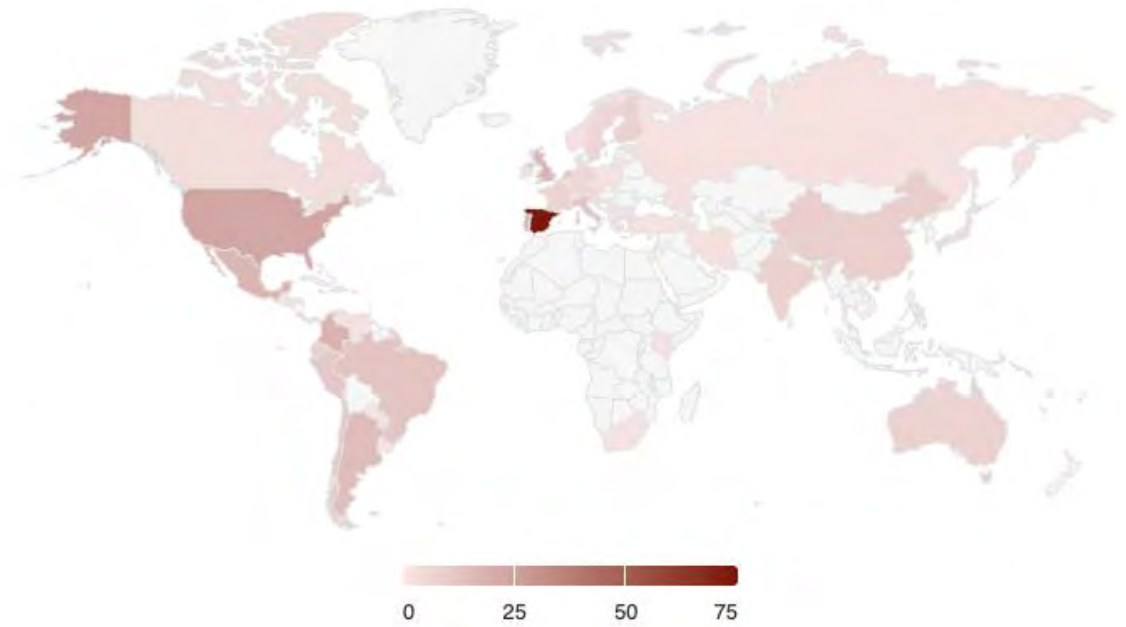
PhD Theses



<https://produccioncientifica.usal.es/grupos/3703/tesis>



Collaboration



Development



elastic

Drupal™ *php*

OpenAI developer platform

deepseek

NGINX

python™ uWSGI

mongoDB® **django**



Apache
HTTP SERVER PROJECT

MariaDB

MySQL™

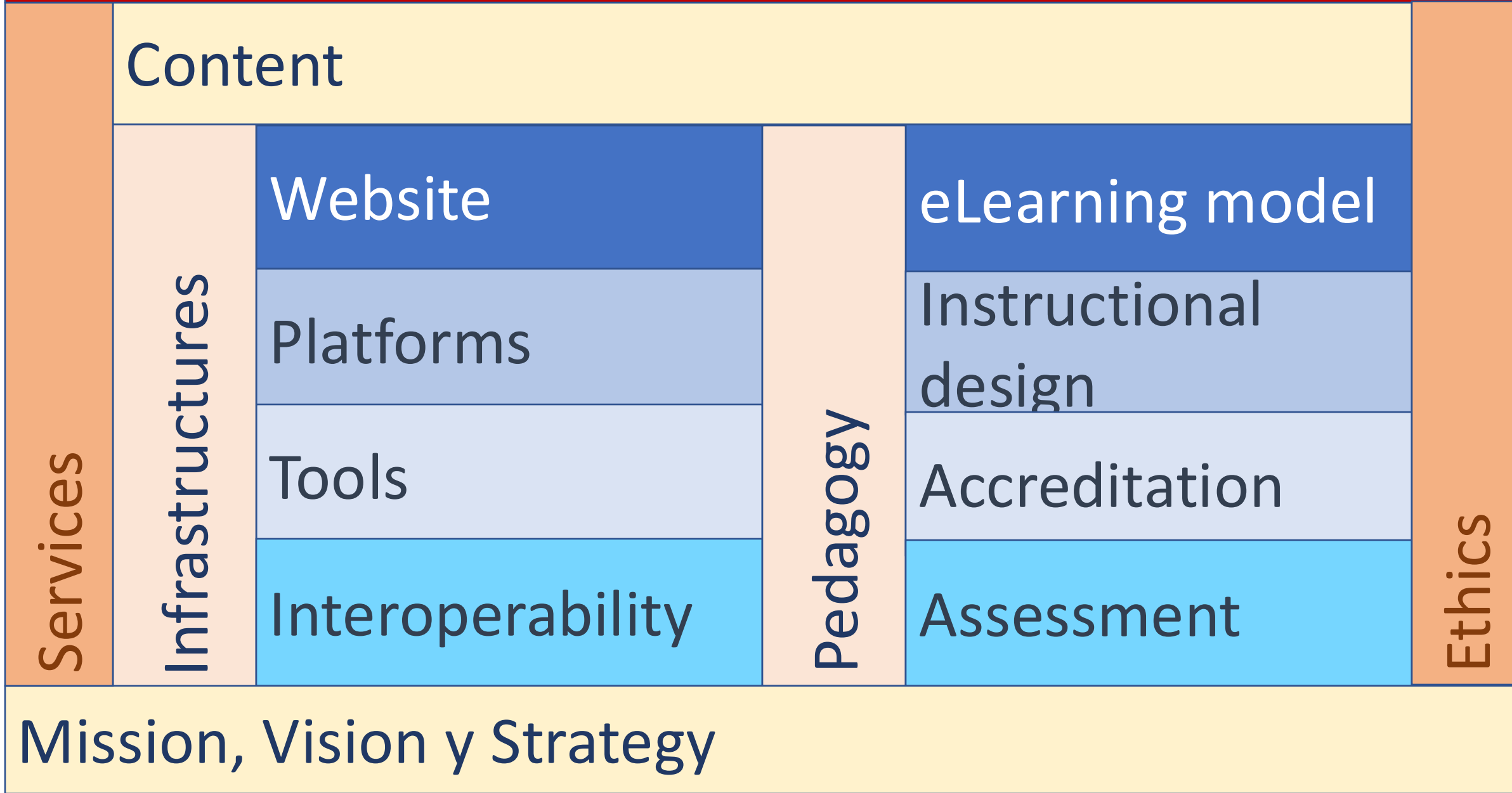
GRIAL reference model for eLearning



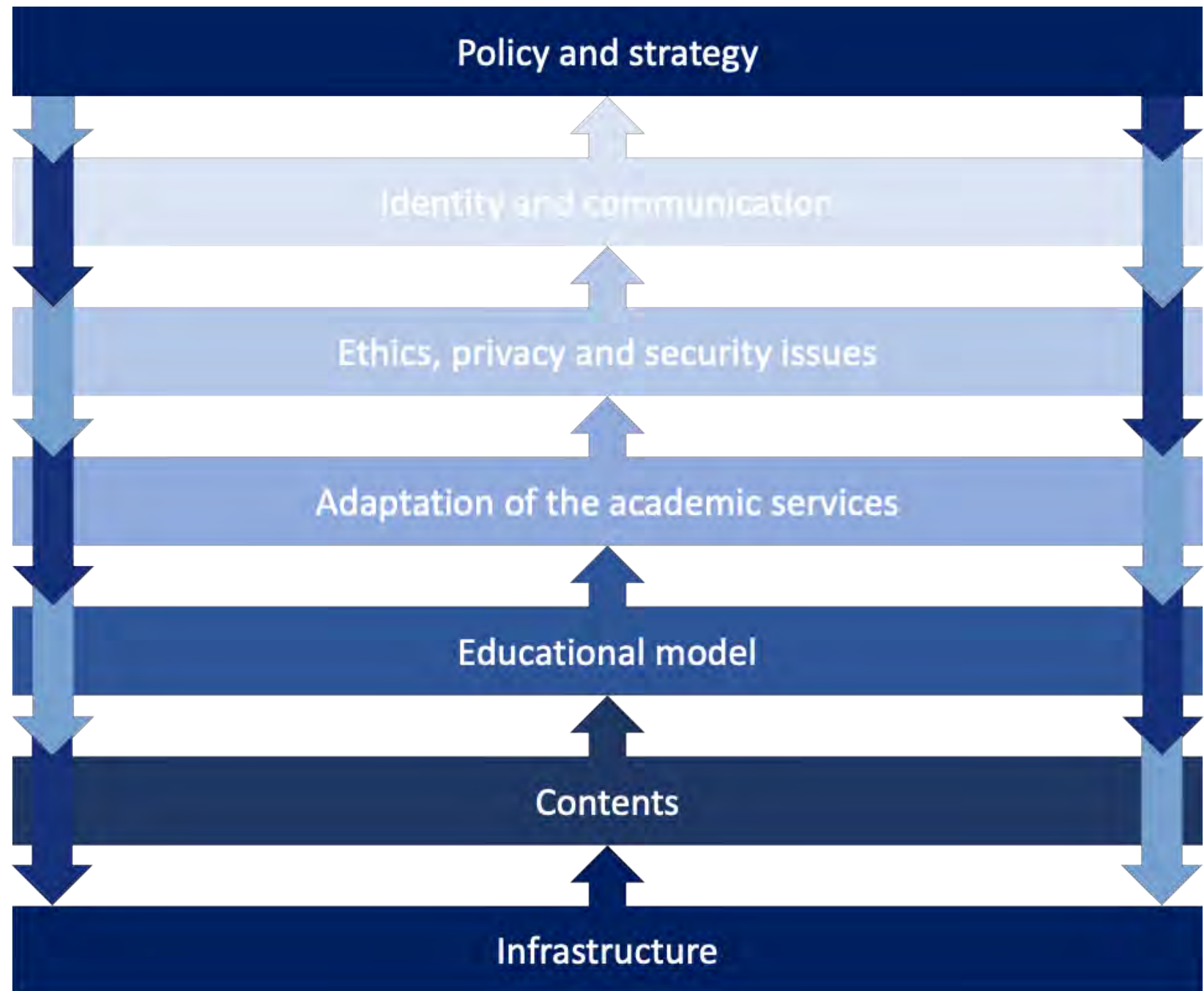
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Institutional perspective of the eLearning

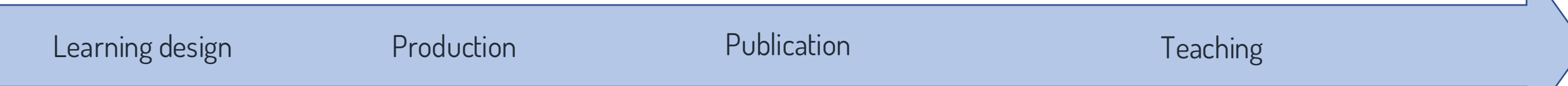
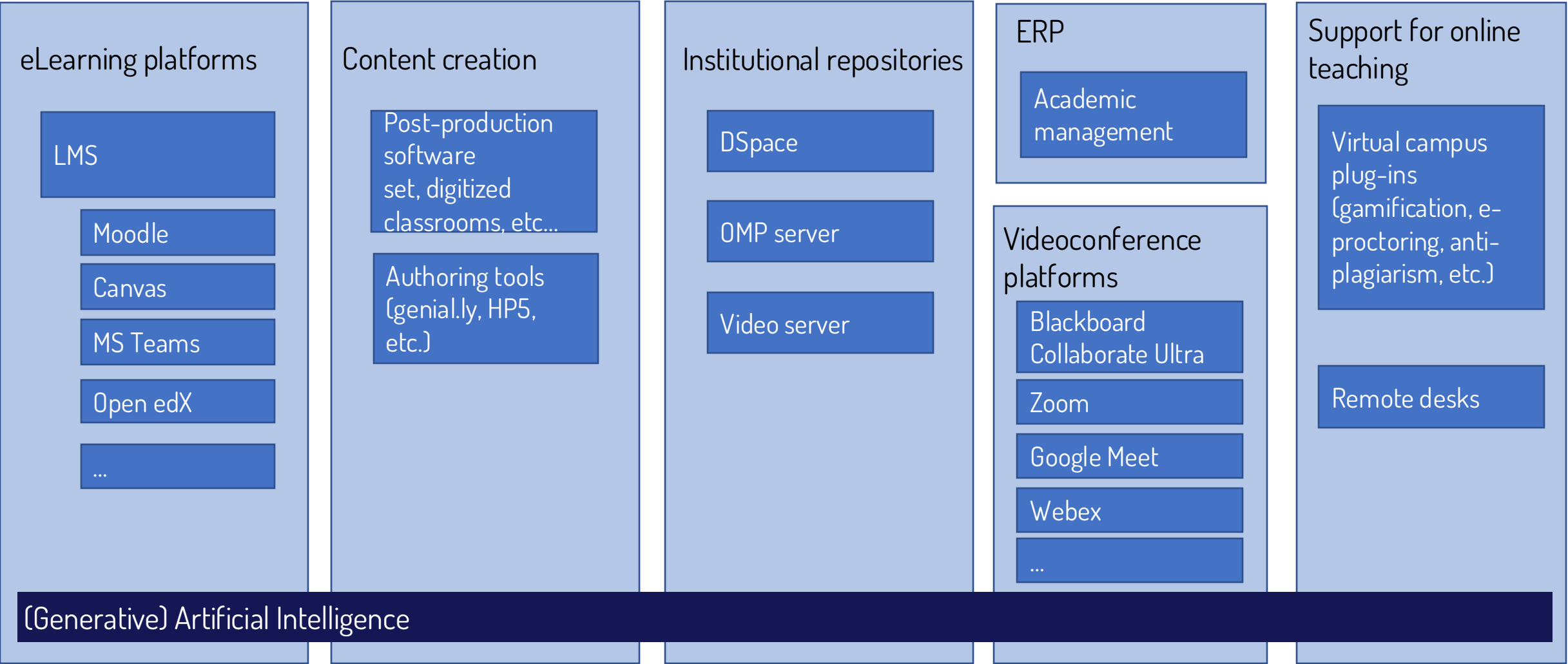
Model pillars



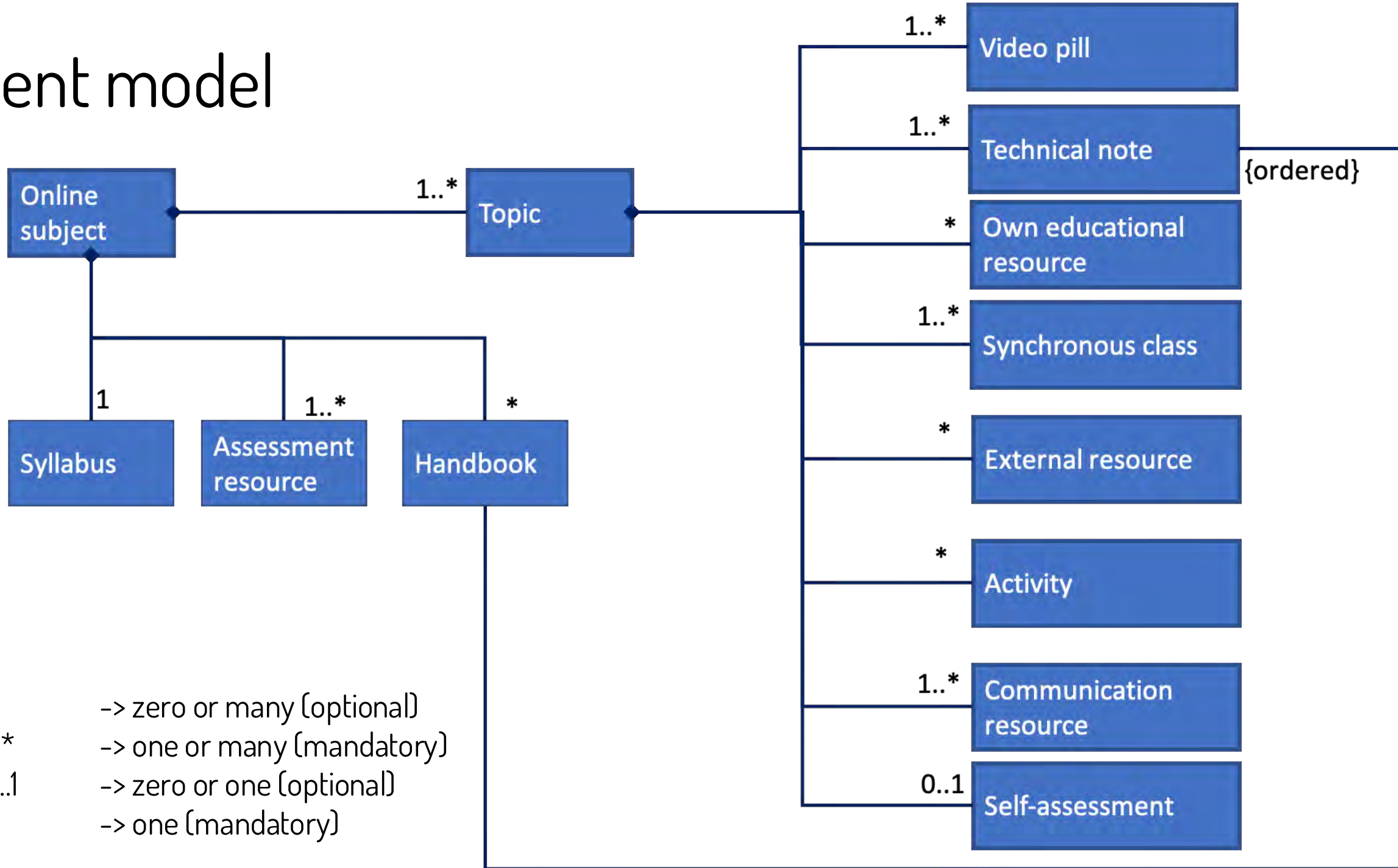
GRIAL reference model for eLearning



Interoperability and evolutionary capability



Content model



Caption

- * -> zero or many (optional)
- 1..* -> one or many (mandatory)
- 0..1 -> zero or one (optional)
- 1 -> one (mandatory)

Pedagogical model

Teaching tasks

- The creation of content to be used in the course
- The instructional design and planning of the virtual environment
- Synchronous teaching through videoconferencing
- Tutoring and asynchronous monitoring of activities and interaction
- Student assessment
- Mentoring or personalized monitoring of students to prevent them from dropping out





Ethics: Safe AI in Education Manifesto

The Manifesto for Safe AI in Education proposes **fundamental principles that ensure that AI is implemented in educational settings** in a manner that is **ethical, safe, and aligned with the fundamental goals of education**

These principles are based on the belief that **AI should always be at the service of people**, enhancing human capabilities rather than replacing them

<https://manifesto.safeaieducation.org>



Ethics: Safe AI in Education Manifesto

Principle 1: Human Oversight and Accountability

Principle 2: Guaranteeing Confidentiality

Principle 3: Alignment with Educational Strategies

Principle 4: Alignment with Didactic Practices

Principle 5: Accuracy and Explainability

Principle 6: Comprehensive Interface and Behavior

Principle 7: Ethical Training and Transparency

<https://manifesto.safeaieducation.org>

Policy and strategy - Institutional strategic vision needed

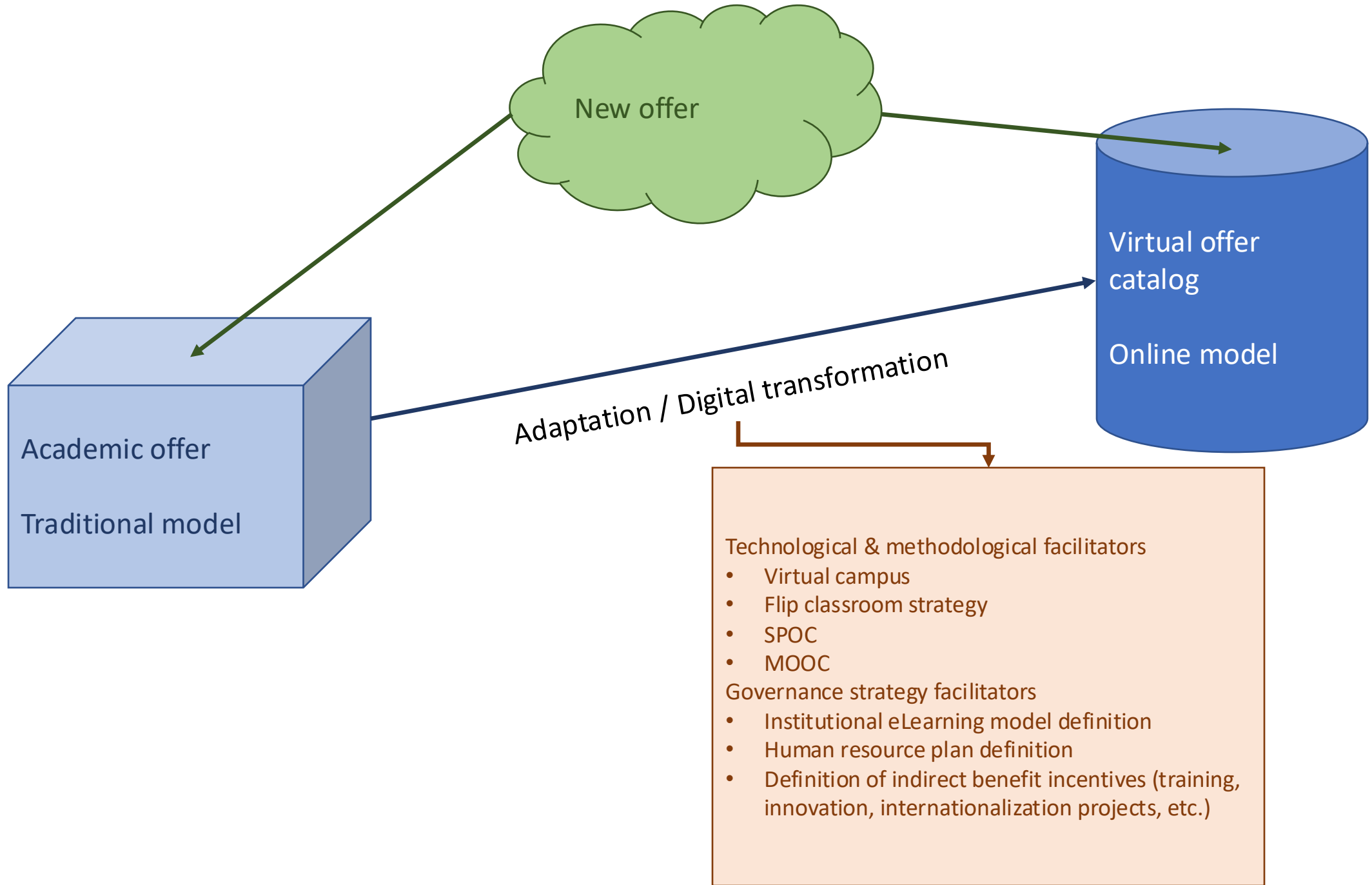


A red rectangular sign with a yellow border of small triangles. The sign is mounted on a wooden post and has four screws at the corners. The text on the sign is white and reads "Please Stay on the Path".

**Please
Stay on
the Path**

The adoption of an eLearning model requires a commitment on the part of the institution

Policy and strategy - Action plan



The eLearning model is part of a strategic digital transformation of the university



The nomadism of this time must do first and foremost with the continuous and rapid transformation of the scientific, technical, professional, and mental landscapes. Even if we did not move, the world would change around us (Lévy)



Bibliography

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