

AI & EDUCATION

domoscio
SMART DATA FOR LEARNING



DOMOSCIO

Domoscio connects cognitive science and AI to enhance learning.

Founded in 2013

+600k€ R&D budget



THALES



SOMMAIRE

- Main challenges
- Focus on Adaptive Learning
 - Purpose
 - Learning about contents
 - Learning about students
 - Hybridizing recommendations
- Using short stage recommendations
- Use Cases

CHALLENGES FOR LEARNING & DEVELOPMENT

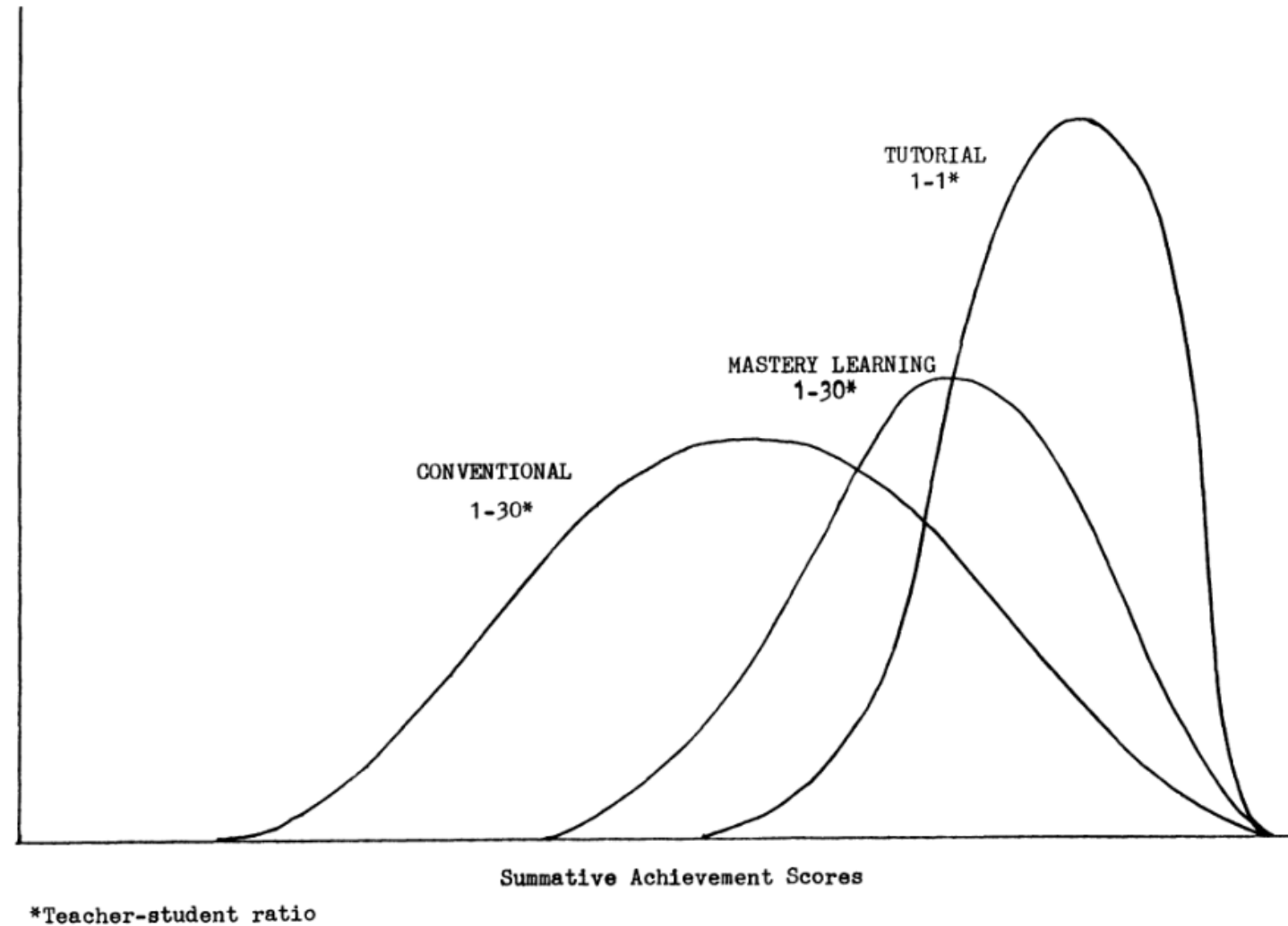
1

**Individualizing
learning plans with a
skills-based approach**

2

**Driving long-term
retention of the skills
acquired in training**

WHY SHOULD WE INDIVIDUALIZE LEARNING ?



Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational researcher*, 13(6), 4-16.

ADAPTIVE LEARNING

Custom learning path



Using Adaptivity



3 MAIN STEPS



**Learning about
contents**

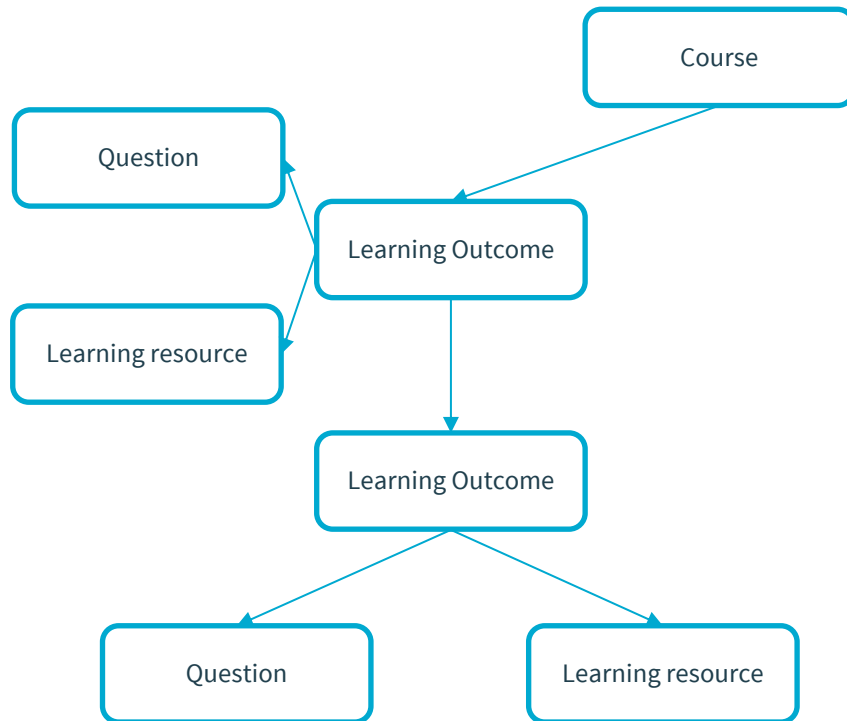


**Learning about
students**

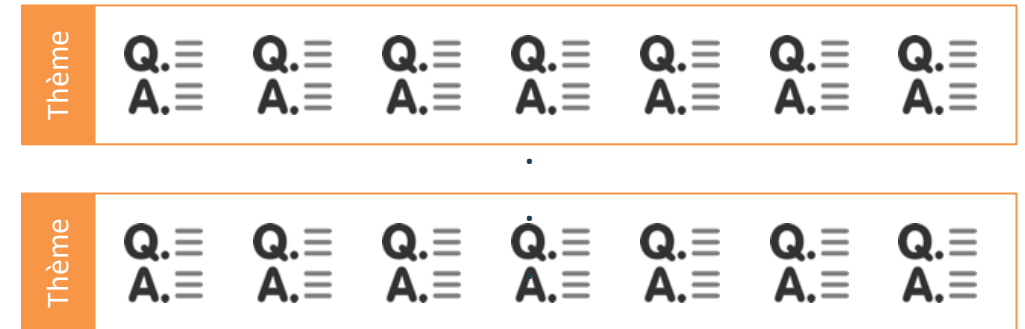
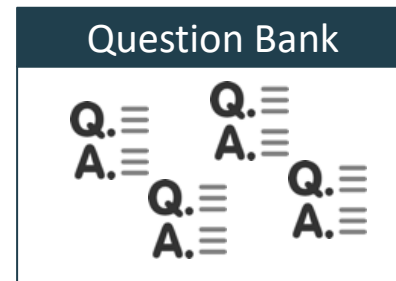


**Hybridizing
recomendations**

Structuring your knowledge map

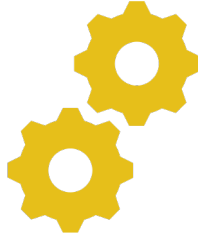


Mapping your evaluation material

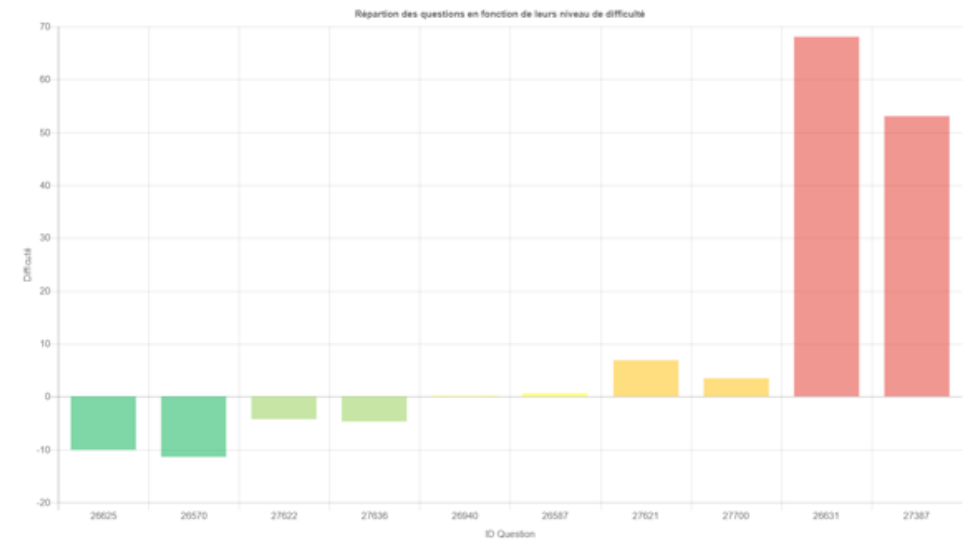


Thème	Q. A.	Q. A.	Q. A.	Q. A.	Q. A.	Q. A.	Q. A.
	✓	✗	✗	✗	✓	✗	✗
	✓	✓	✓	✗	✗	✓	✓
	✗	✓	✓	✓	✓	✗	✓
	✓	✗	✓	✓	✗	✗	✗

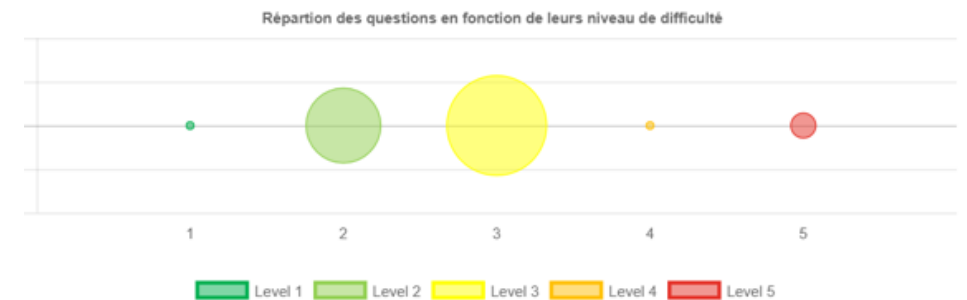
BKT
IRT



Learn about the actual difficulty of your questions



Learn about the spectrum of available contents

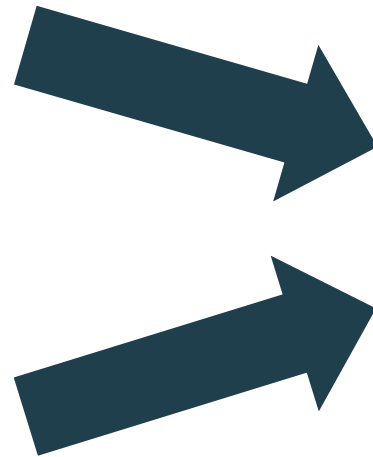




1833 collaborateurs



5 caractéristiques



Dimension	Type
Age	Numeric
Diploma	Numeric
Starting date	Numeric
Expertise	Categoric
Localisation	Catégoric

Understanding how your population is composed to better understand a new user and individualize his learning experience



Cluster 0



206 pers.

33 y.o.

+4

2009

-

Réseau

Cluster 1



860 pers.

30 y.o.

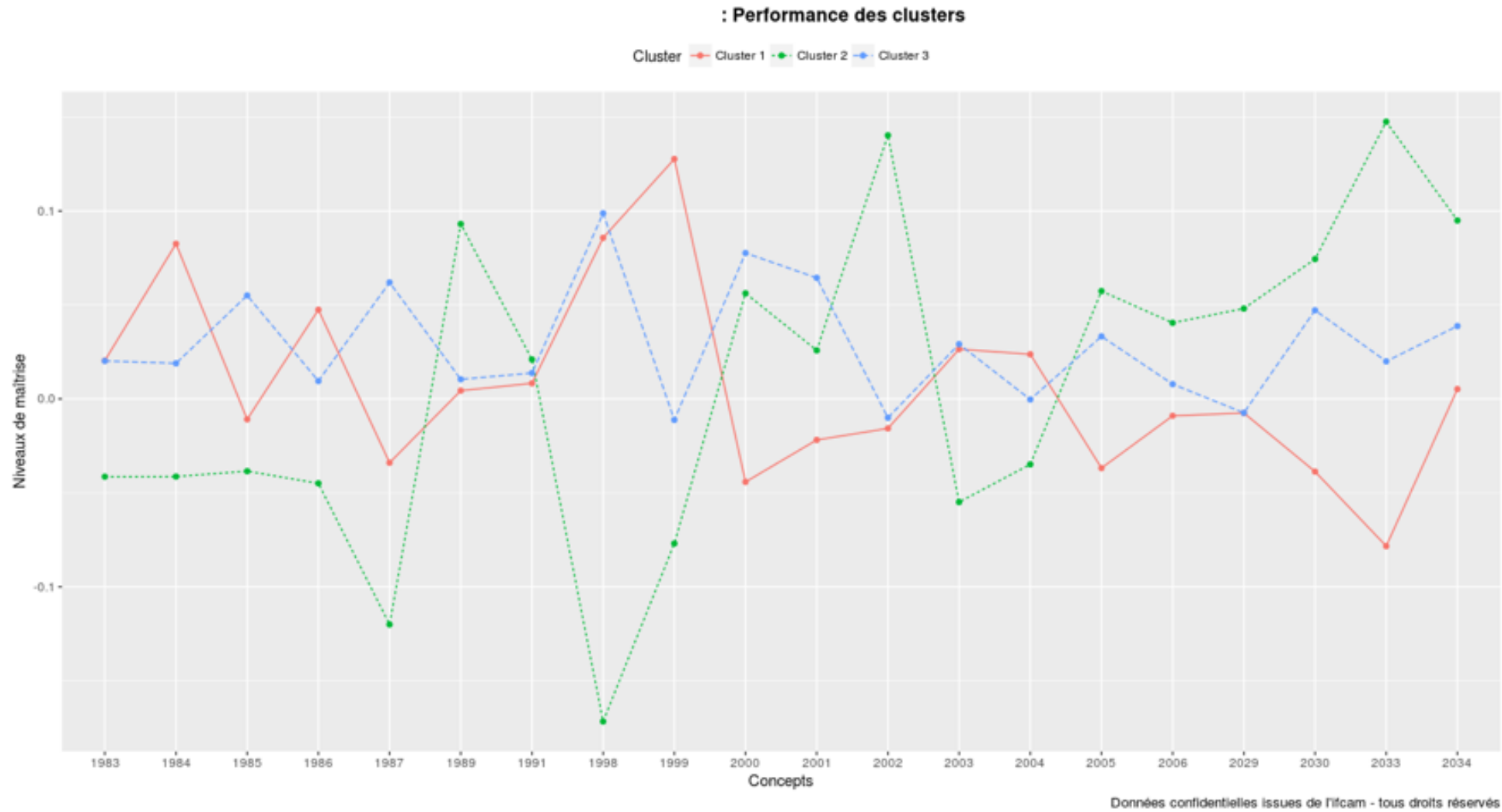
+4

2011

S.E.S

Réseau

MASTERY FOR EACH TOPIC



User-User filtering & Item-Item filtering

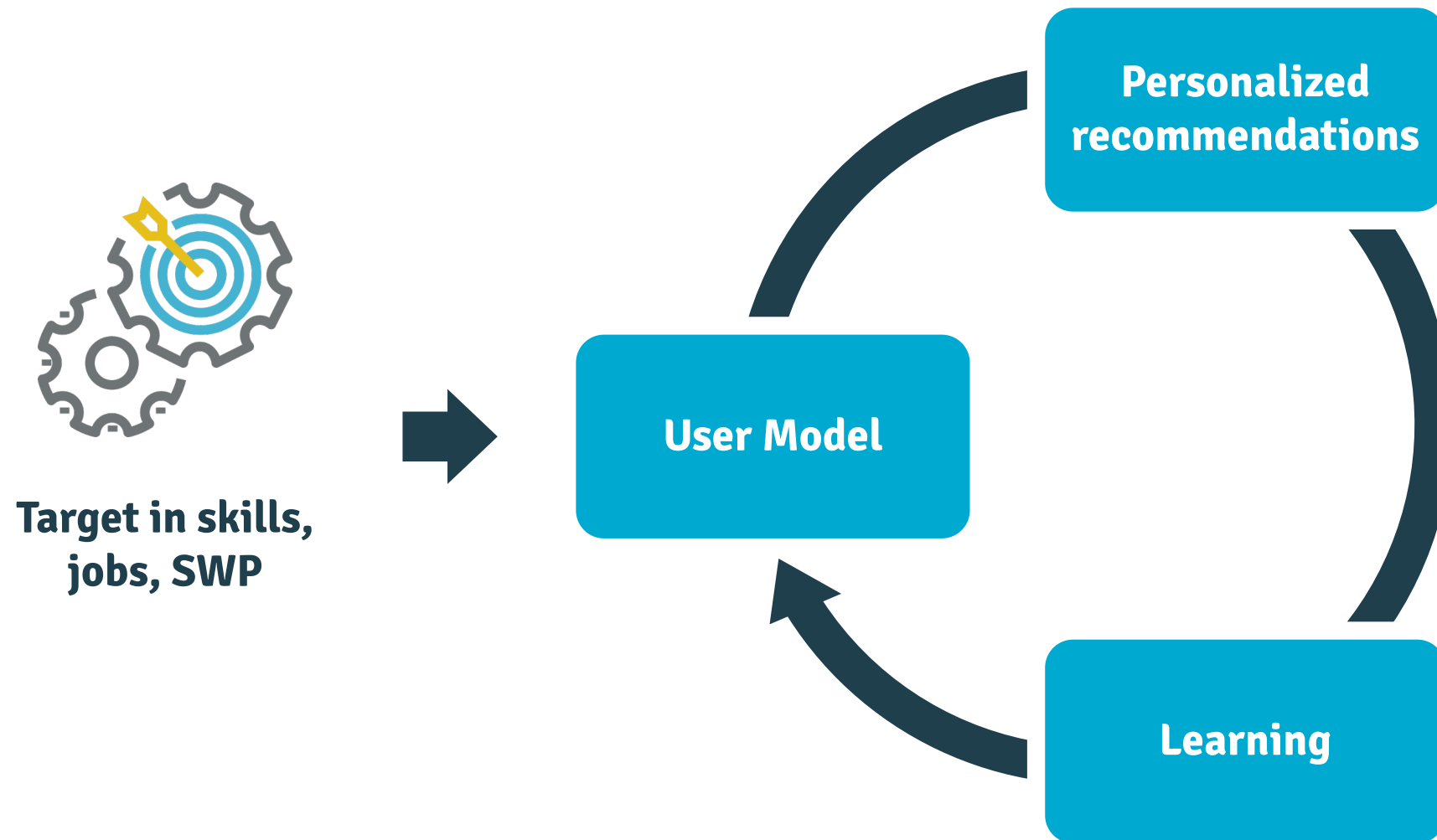
- ❖ Clustering & Nearest Neighbor
- ❖ Historical performance data

- ❖ Knowledge Map
- ❖ Content calibration (IRT, ...)

USING SHORT STAGE RECOMMENDATION

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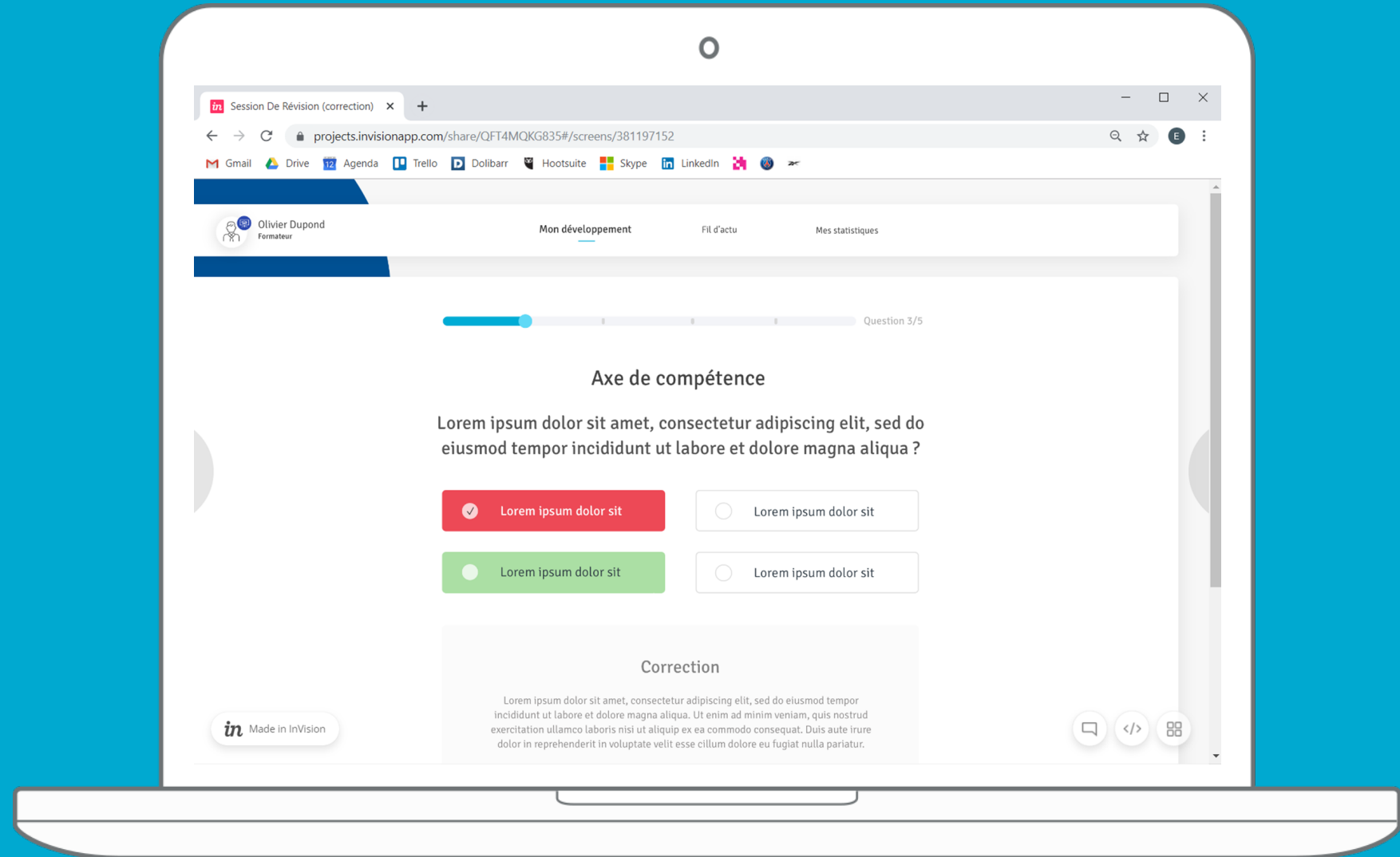
USE CASES

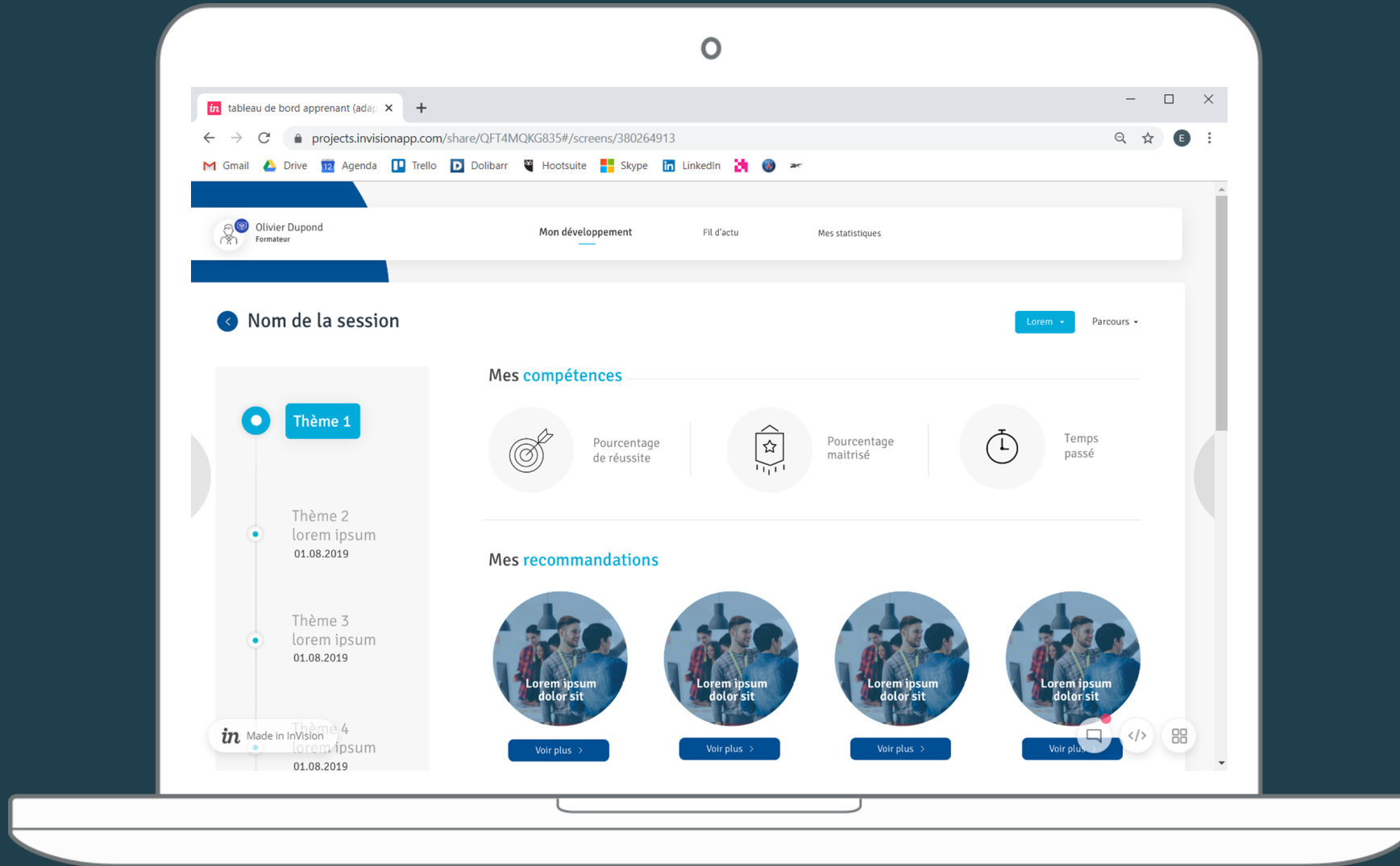
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POSITIONNING

Computerized adaptive testing to target the individual mastery level of each learner





RECOMMANDATIONS

Recommendation engine to
build a personalized
learning plan

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