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An overview in E-learning: Perspectives and Challenges

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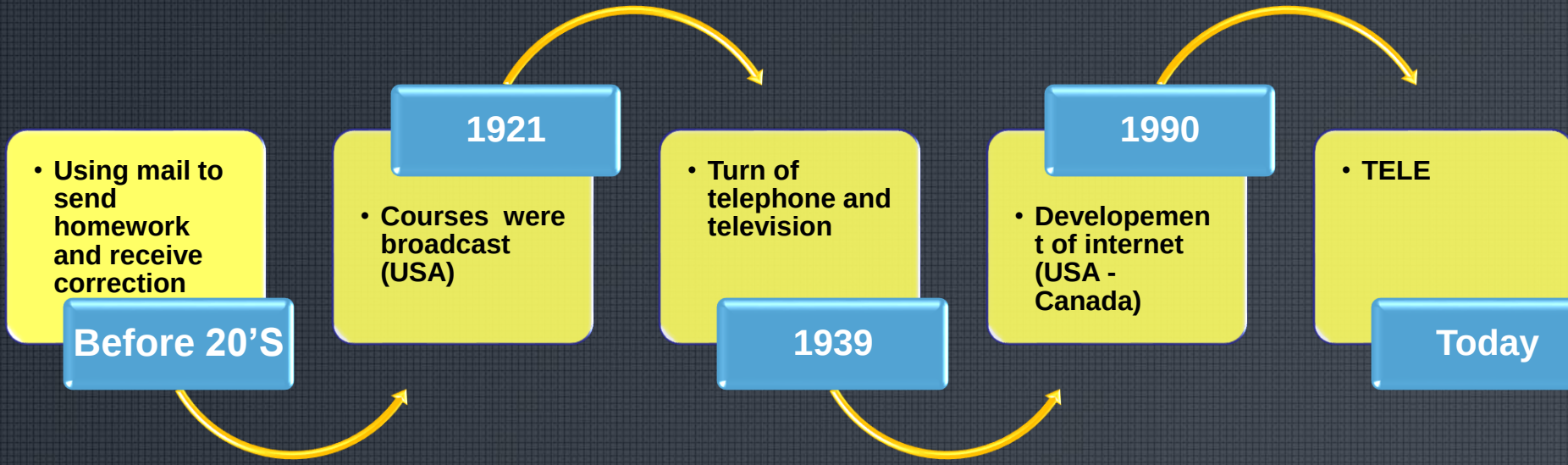
Plan

1. Introduction
2. E-Learning
3. Massive Open Online Course: MOOC
4. Learning Dropout Phenomenon
5. Conclusion

Plan

2 Introduction

- Distance education or distance learning has existed for centuries, before the advent of the Internet.



Plan

4 E-learning

- E-learning or electronic learning, literally means learning on the internet.

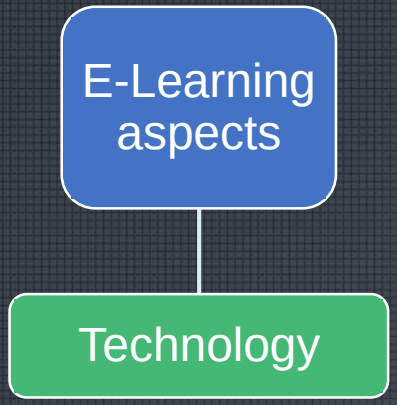
- 4 definitions' categories [1] were identified, each category focus on a specific aspect of e-learning:
  - ✓ Technology-Driven Definitions
  - ✓ Delivery-System-Oriented Definitions
  - ✓ Communication-Oriented Definitions
  - ✓ Educational-Paradigm Oriented Definitions

5 E-learning

E-Learning aspects

5

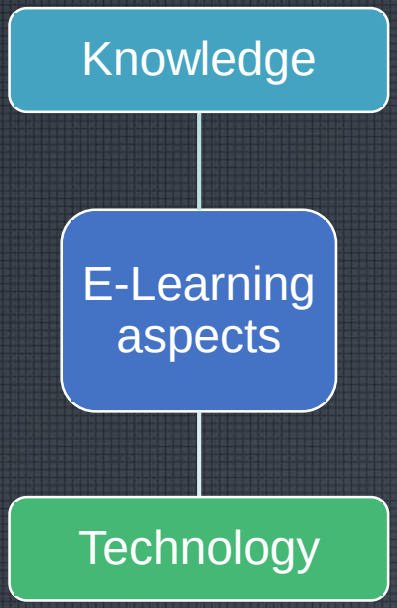
E-learning



Technology-Driven Definitions

E-learning is the use of technology for learning

5 E-learning



Technology-Driven Definitions

E-learning is the means of accessing to knowledge

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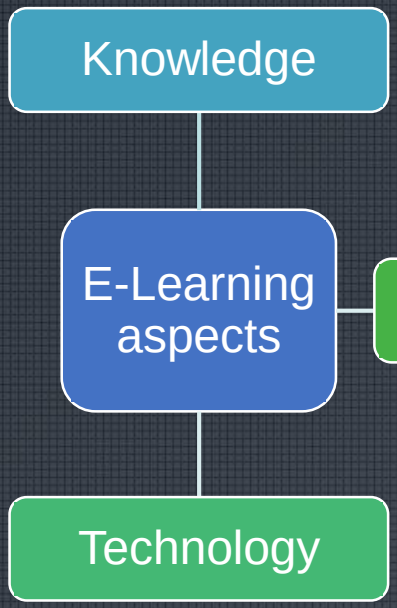

Technology-Driven Definitions

E-learning is the means of accessing to knowledge

Communication-Oriented Definitions

E-learning is a communication, interaction and collaborative tool

Technology-Driven Definitions

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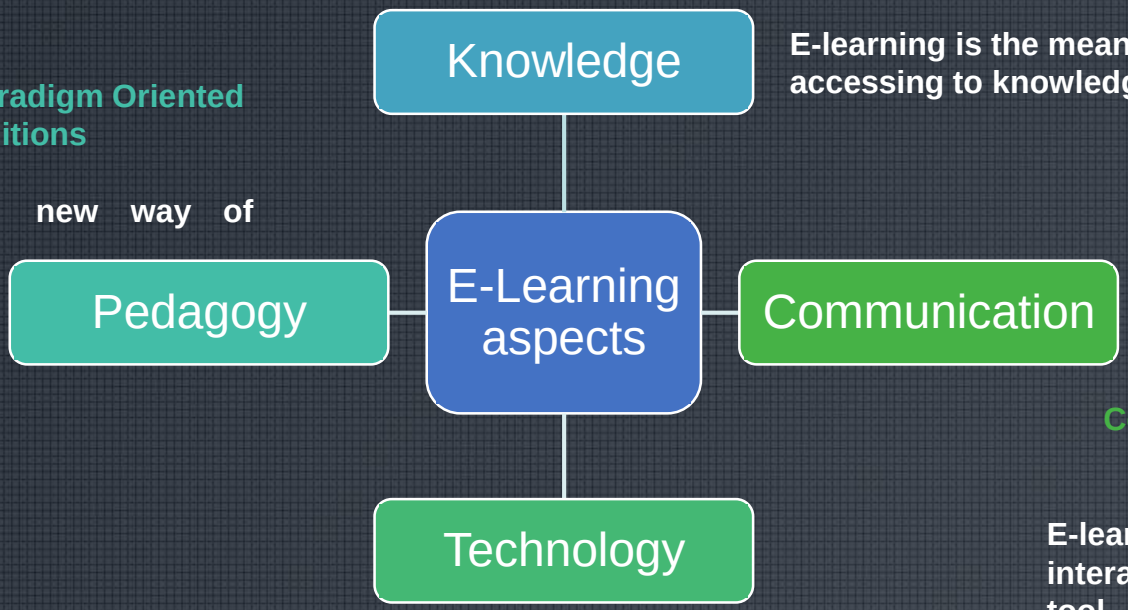

Technology-Driven Definitions

E-learning is the means of accessing to knowledge

Educational-Paradigm Oriented Definitions

E-learning is new way of learning

Communication-Oriented Definitions

E-learning is a communication, interaction and collaborative tool

Technology-Driven Definitions

E-learning is the use of technology for learning

E-learning

- Learning needs change very quickly and the concept and functions of e-learning must continuously be adapted to these needs.
- Personalization is one of the promising subjects and can be considered as an essential aspect of e-learning..

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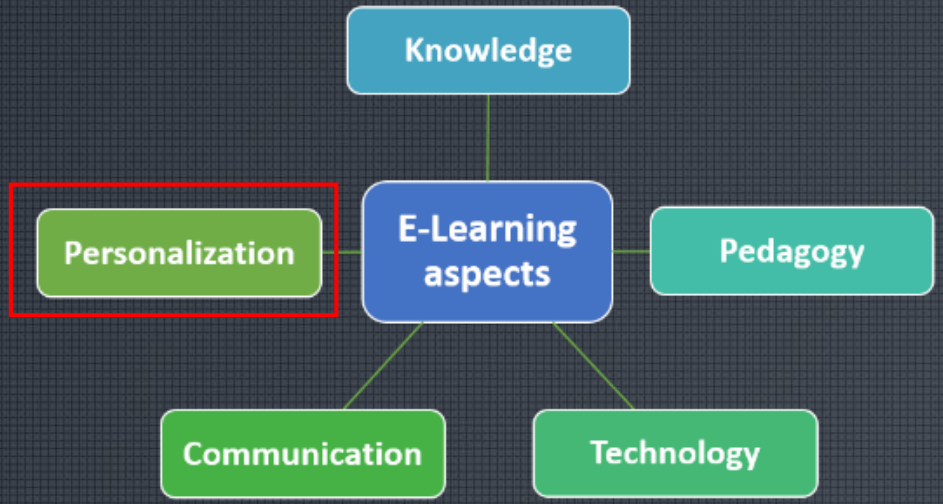


7 E-learning

❖ Personalization aspect

Reference	Goal	Approach
[2]	Adaptation of the content to the learner's preferences and knowledge level	Personalized learning management system " PERSO" (analyze learner's answer to a dynamic questionnaire to determine learner's knowledge level)
[3]	Delivering learning contents that takes into account pedagogical requirements and learning activities	Adaptive e-learning framework "OASEF" (Ontology based Adaptive, Semantic E-Learning Framework)
[4]	showing how arguments can be used as explanations to influence the behaviour of users towards the use of certain items.	Educational recommender system "ERS" Exploring both characteristics of a student profile and LOs' metadata to recommend e-learning contents that meet the needs of the learner.

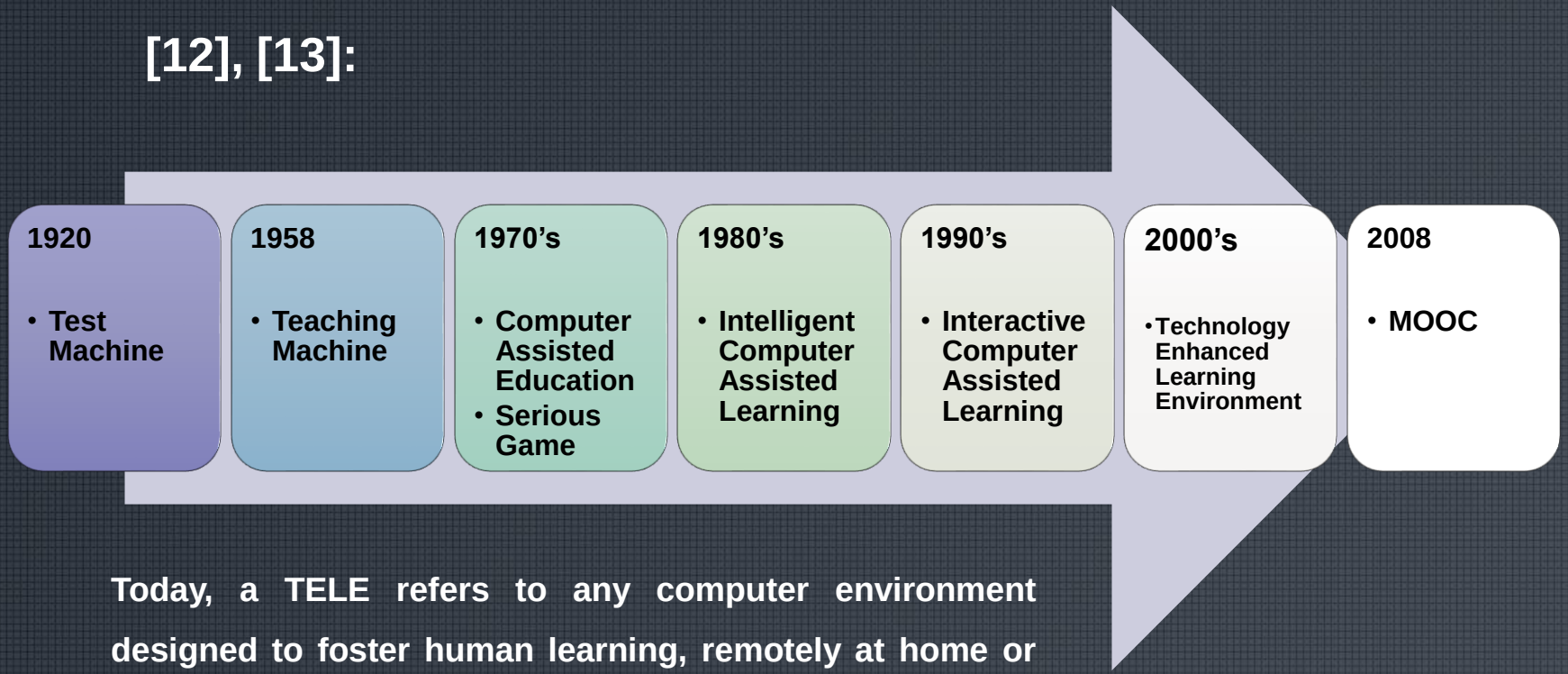
E-learning

❖ Personalization aspect

Reference	Goal	Approach
[5]	Improving the recommendation's performance of learning resources	Hybridization of ontology-based recommendation with other advanced recommendation techniques
[6]	Delivering educational videos that interest learners	Video recommender system by analyzing individual learning data

E-learning

- The major developments that have taken place in distance learning solutions from 1920 until now [7], [8], [9], [10], [11], [12], [13]:

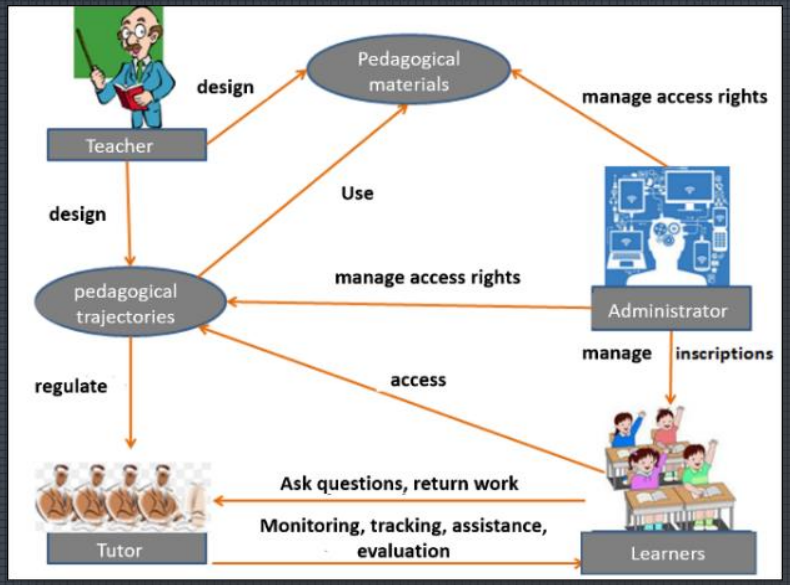


Today, a TELE refers to any computer environment designed to foster human learning, remotely at home or in-class at school, mobilizing human and artificial agents.

E-learning: A TELE model

- Many educational organizations have implemented e-learning platforms to improve student learning performance.

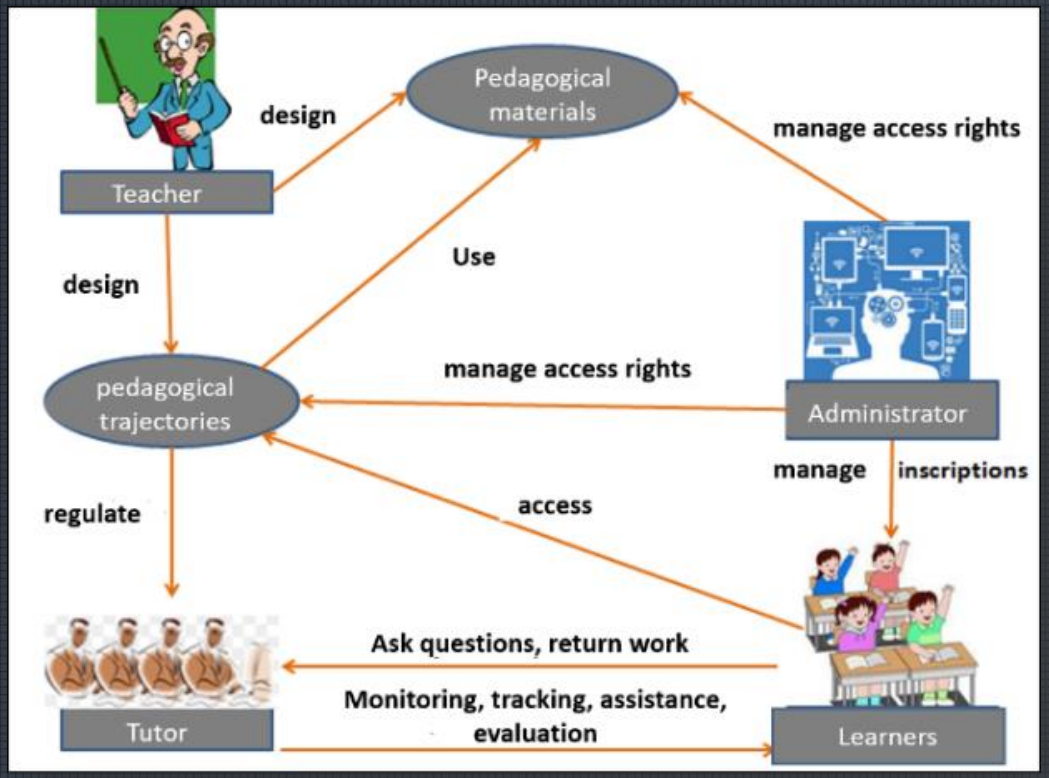
- TELE integrate tools for different e-learning actors to facilitate their roles and functions [14].



A TELE model

E-learning: A TELE model

- ✓ The tutor role can be subdivided into: teacher-designer, teacher-trainer "tutor“ teacher-corrector
- ✓ creates pedagogical trajectories
- ✓ follows up learners and provides them assistance.



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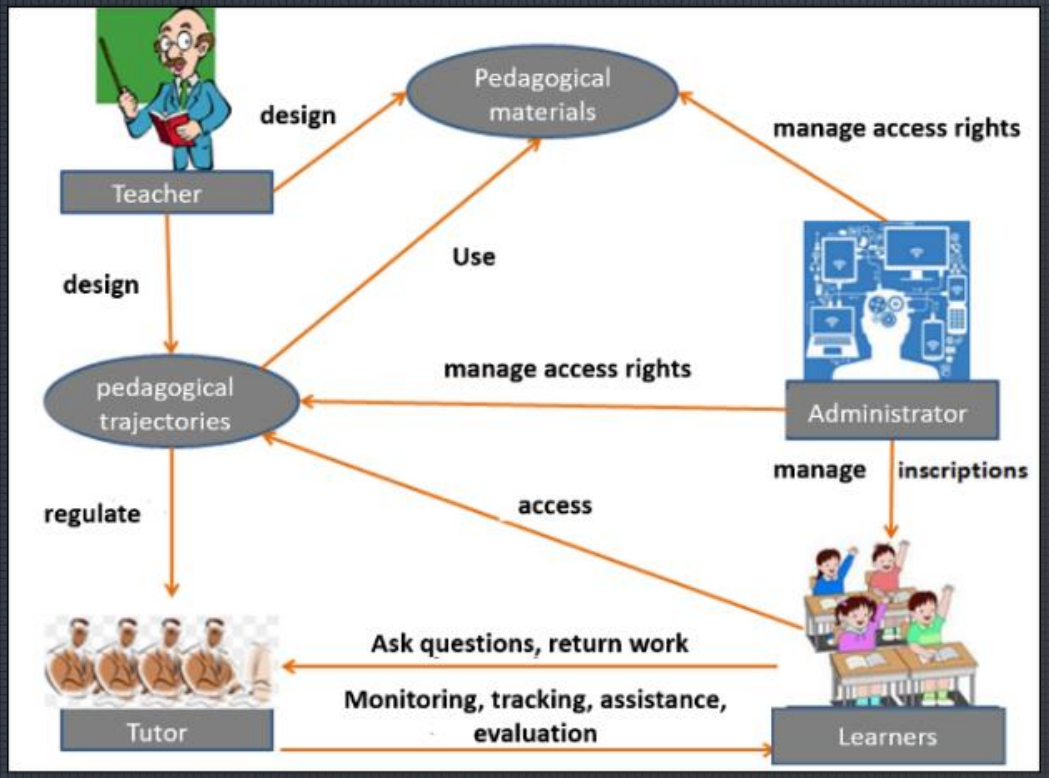

- ✓ Consults, downloads the educational resources
- ✓ organizes his work
- ✓ does exercises,
- ✓ self-evaluates
- ✓ transmits questions and work to his tutor

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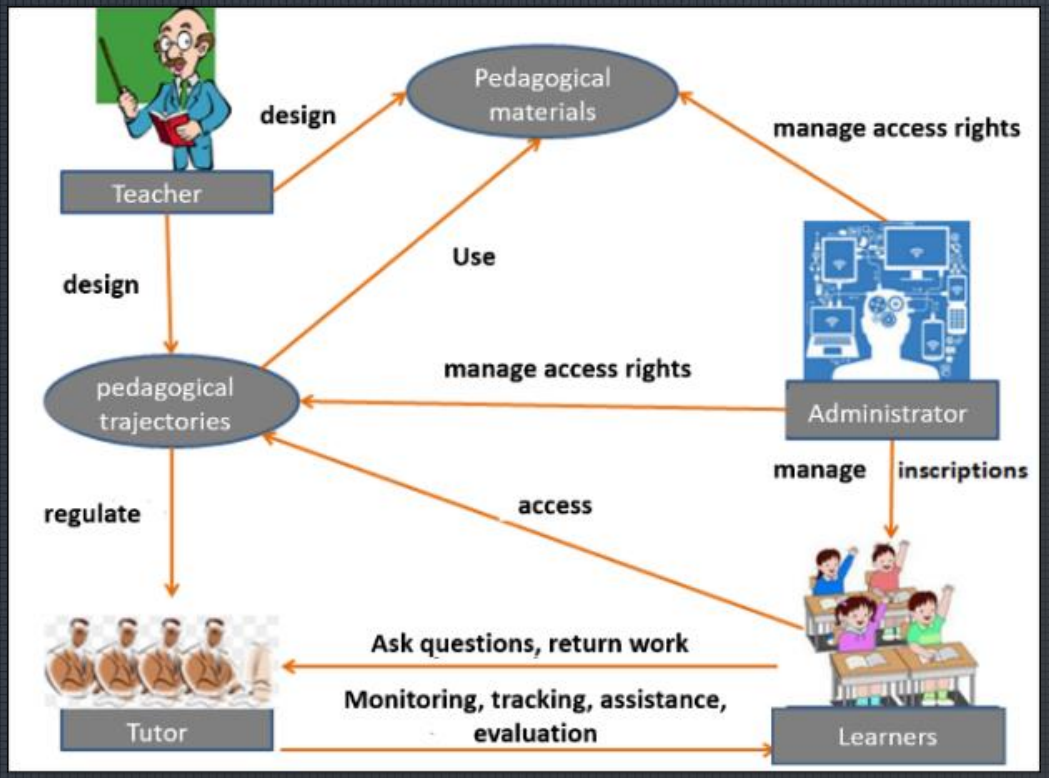

- ✓ Ensures the maintenance of the system
- ✓ manage learners’ registrations and the access rights as well to the platform as to the educational resources.

- ✓ Consults, downloads the educational resources
- ✓ organizes his work
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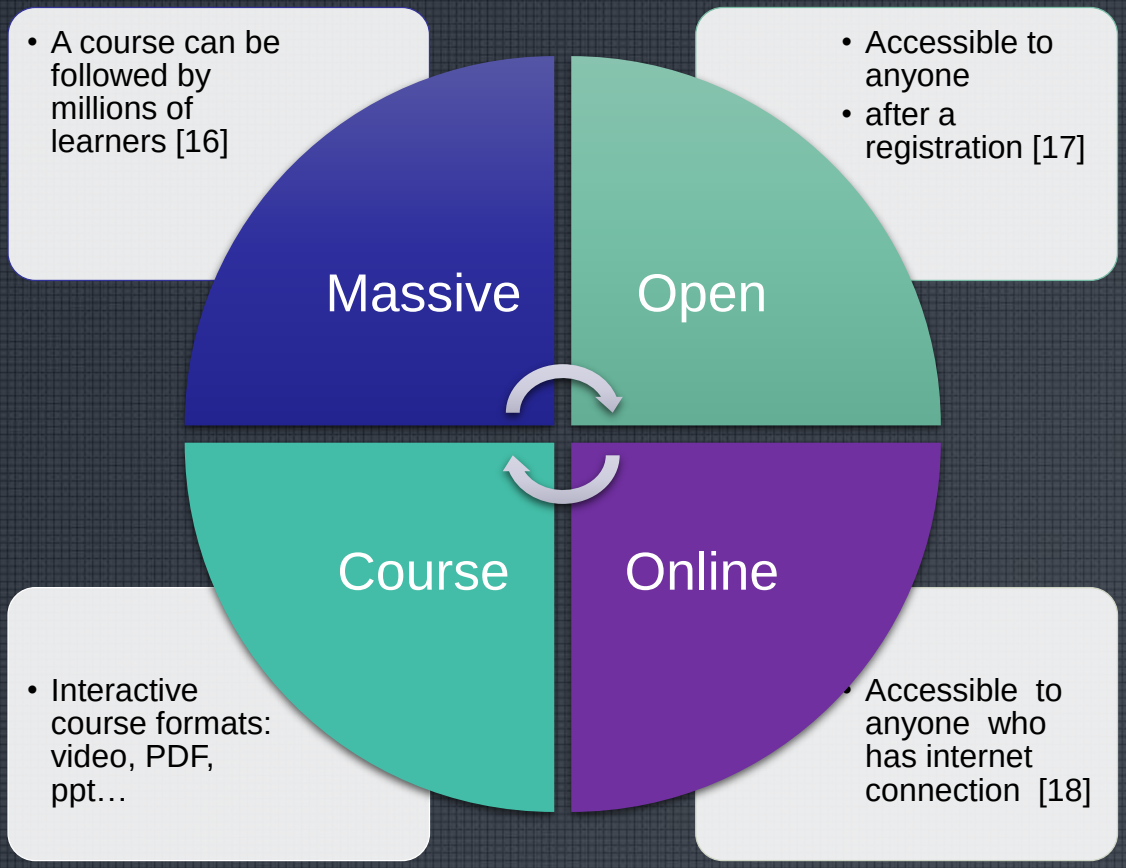
Massive Open Online Course: MOOC

- MOOC is created by George Siemens and Stephen Downes from the University of Manitoba, Canada in august 2008 [15].
- MOOCs constitute a major evolution of the e-learning
- Since 2008, major universities all over the world offered MOOCs to promise the democratization of knowledge and lifelong learning

Massive Open Online Course: MOOC



Massive Open Online Course: MOOC

Typology of MOOCs:

- ✓ Connectivist MOOC
- ✓ Participative approach
- ✓ Learner carries out its own researches, exchanges and collaborates with peers
- ✓ content is partly co-built during the training
- ✓ the role of the tutor is limited to a constant animation of the cMOOC [15]

- ✓ Transmissive MOOC
- ✓ Traditional approach with attractive format
- ✓ Learning through knowledge transmission
- ✓ content is predefined by the pedagogical team [19].

- ✓ Using xMOOCs as pedagogical resources in cMOOCs

- Other possible taxonomies: Market/Open/Dewey Model, Lane's classification, Clark Taxonomy

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Massive Open Online Course: MOOC

- Educational institutions work to attract learners and meet their needs.
- Increasing the success rate of learners is a major challenge
- the success rate compared to the number of registrants runs around 10%.
- 841,687 students enrolled at Harvard and the Massachusetts Institute of Technology (MIT), 5% earned a certificate [20]

Massive Open Online Course: MOOC

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- Problems related to success take mainly the form of dropping out of the online course
- In e-learning, the dropout rate varies from one TELE to another, around 7% to 10%
- Motivations to follow a course are numerous and varied: curiosity for the general theme of a course, desire to acquire knowledge and skills without being engaged or adopting a steady pace of work…
- Dropout decision is generally attributed to a set of interrelated factors: student-related factors and e-learning platform related factors

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Conclusion

- Nowadays, students' withdrawal has become the focus of learners, tutors, and researchers.
- Issues of the e-learning efficiency continue to be the subject of a large number of recent scientific publications
- Future work: evaluation of pedagogical content.
- Objective: to help course designers in the educational reengineering.

Conclusion

- First, we will observe learners' behaviour throw their interaction traces in the TELE.
- Then, we will adopt machine learning approach to identify elements needing to be revisited in the content; the form, duration, presentation, etc.
- The aim is to detect courses content weaknesses in order to give course designers sufficient recommendations that could help to improve pedagogical content and undertake educational interventions.

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Thank you for your attention !
Questions?

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