

INSTRUCTIONAL DATA ANALYTICS AND EDUCATION INTELLIGENCE

E-IZGLĪTĪBAS DATU PĒTĪJUMI UN ANALĪTIKA

RTC403 FALL 2019

VIKTORS ZAGORSKIS



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RĪGAS TEHNISKĀ
UNIVERSITĀTE

Erasmus+ Project "MA in Educational Technology: A New Online Blended Learning Program for New Member States" (Agreement No 2017-KA203-03)

Educational Intelligence

Leveraging data at multiple points across the student lifecycle to make intelligent decisions to positively impact student outcomes.

 **EDUVENTURES**

<https://encoura.org/educational-intelligence-vocabulary/>



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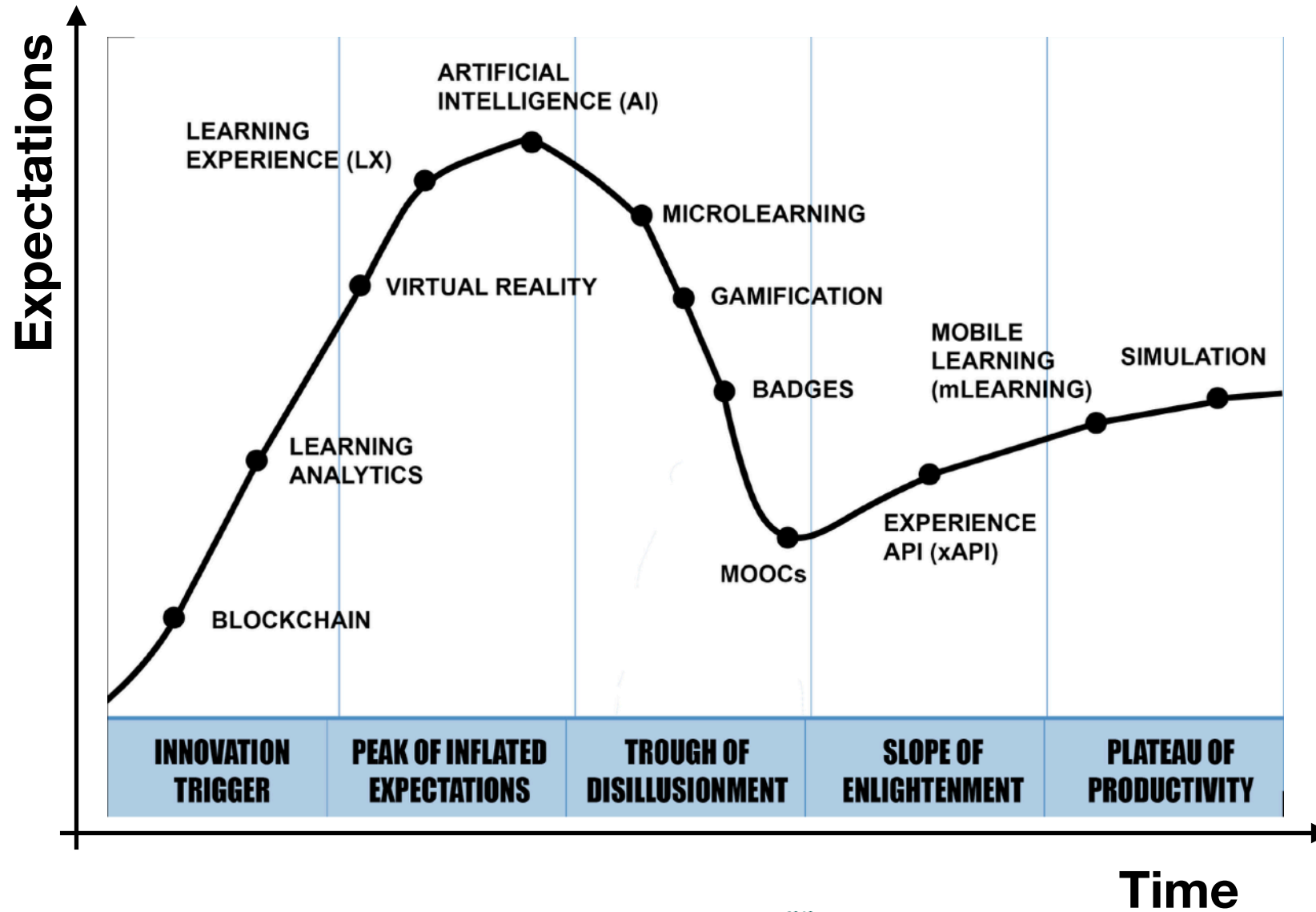


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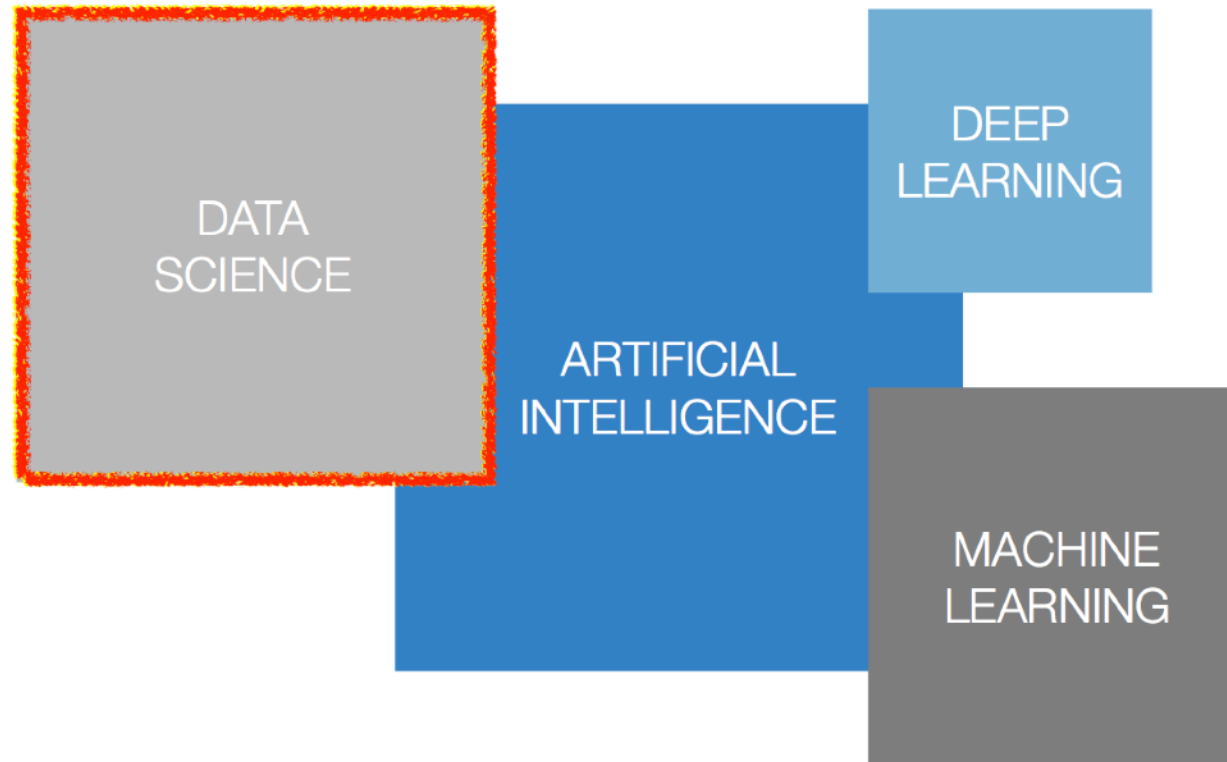


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INSTRUCTIONAL DATA ANALYTICS AND EDUCATION INTELLIGENCE

COURSE GIVES INSIGHT INTO CHALLENGES IN E-LEARNING:

- PRODUCTION,
- UTILISATION,
- AND ADMINISTRATION

CONTINUOUS LEARNING CONTENT:

- DESIGN
- DEVELOPMENT
- INTEGRATION
- TESTING
- ANALYSIS

IDENTIFY INSTRUCTIONAL DESIGN PRACTICES:

- BUSINESS
- RESEARCH
- AND CREATIVITY



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COURSE PREREQUISITES:

- BASIC COMPUTER SKILLS
- SKILLS WORKING WITH CLOUD SERVICES
- MULTIMEDIA SKILLS
- HEARD OF **AI**, **ML**, AND **BIG DATA**



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REQUIREMENTS:

- MAC OS / WINDOWS / LINUX
- ELEMENTARY PROGRAMMING SKILLS IN **PYTHON AND R**
- ACCESS TO UDEMY, UDACITY, OPENEDX, AND COURSERA
- ACCOUNTS ON AWS, ORACLE, AND GOOGLE



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LEARNING ENVIRONMENTS

- HANDS-ON LABS
 - TSC.EDX.LV
 - COLAB.RESEARCH.GOOGLE.COM/NOTEBOOKS
 - AWS.COM
 - ORACLE.COM
- WEEKLY WEBINARS
 - [INTRODUCTION TO COURSE \(IN WEBINAR FORM\)](#)



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COURSE OUTLINE

- Module One - **Fundamentals of Data Science. Revealing the Path from History to the Future**
- Module Two - **Overview of Challenges in Data Production, Retrieval, Cleansing and Storage in e-Learning Settings**
- Module Three - **Introduction to Data Analytics. Hands-on approach**
- Module Four - **How to retrieve, prepare, store and visualise e-Learning Data**
- Module Five - **Working with e-Learning Data in Mobile Environments**
- Module Six - **Data Analytics Challenges in Cloud-based e-Learning Environments**
- Module Seven - **Applying Artificial Intelligence (AI) and Machine Learning (ML) Techniques for modelling in e-Learning Environments**
- Module Eight - **E-learning Intelligence at Organisational Level**



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AFTER COMPLETING THE COURSE STUDENTS WILL BE ABLE:

- **to explain the basic theoretical concepts of data analytics;**
- **to understand the challenges of data retrieval and preparation in e-Learning;**
- **to prove skills to coordinate the supervising of e-learning data;**
- **to organise e-learning data retrieval and evaluation from a mobile device.**
- **to operate with open-source and commercial programming frameworks, languages and tools used today;**
- **to plan the analysis of e-study data at the instructional level;**



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APPENDIX

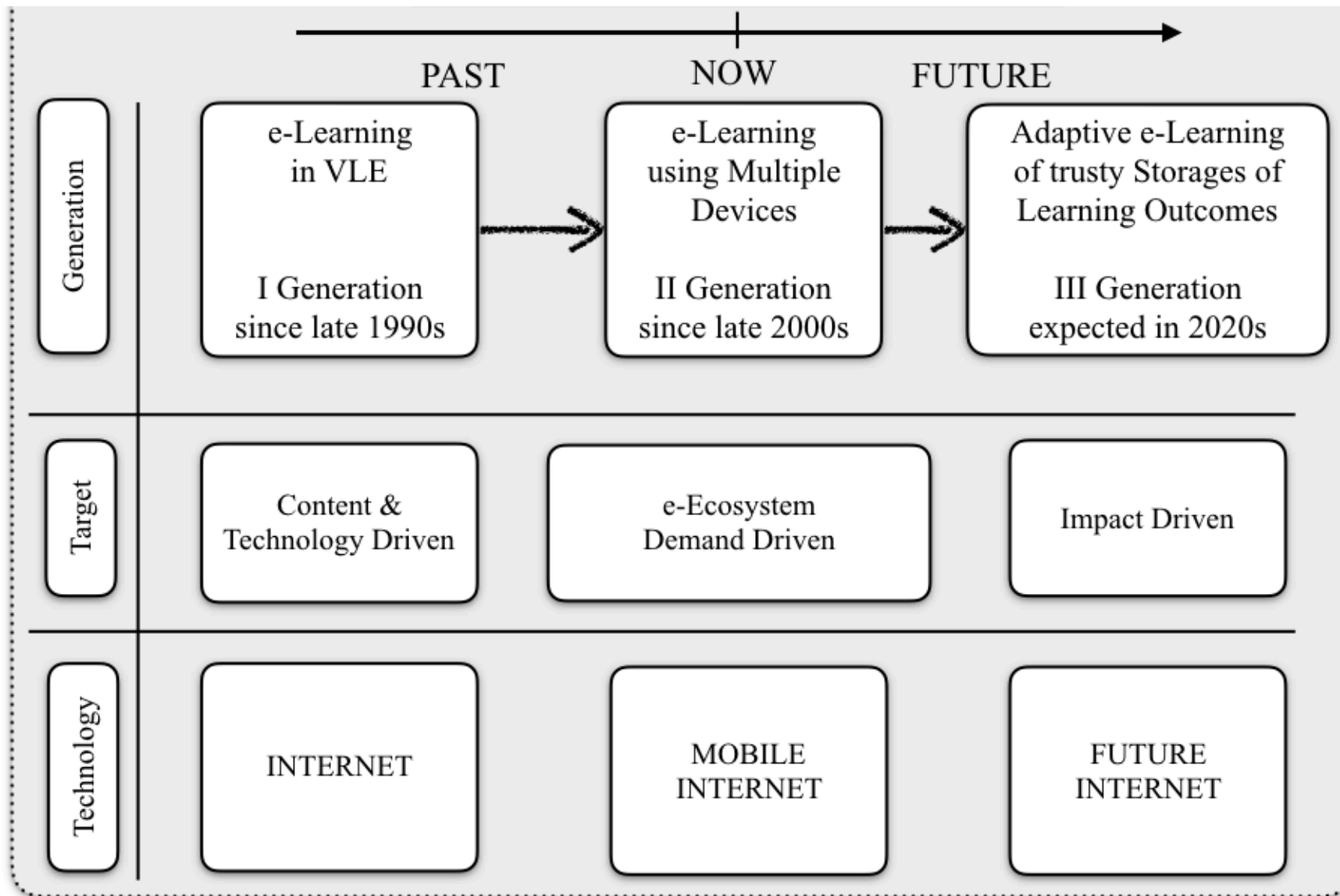


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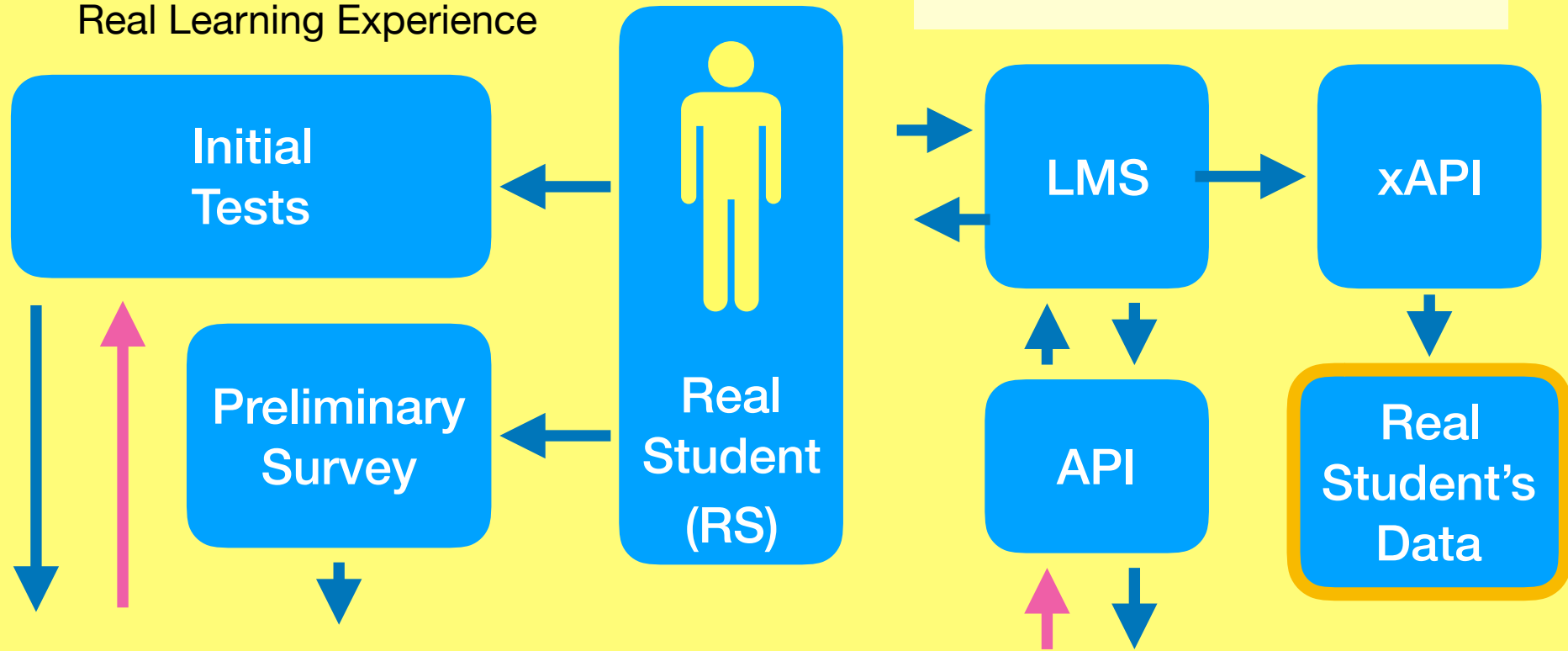


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REAL STUDENT

Real Learning Experience

RS Learning Workflow



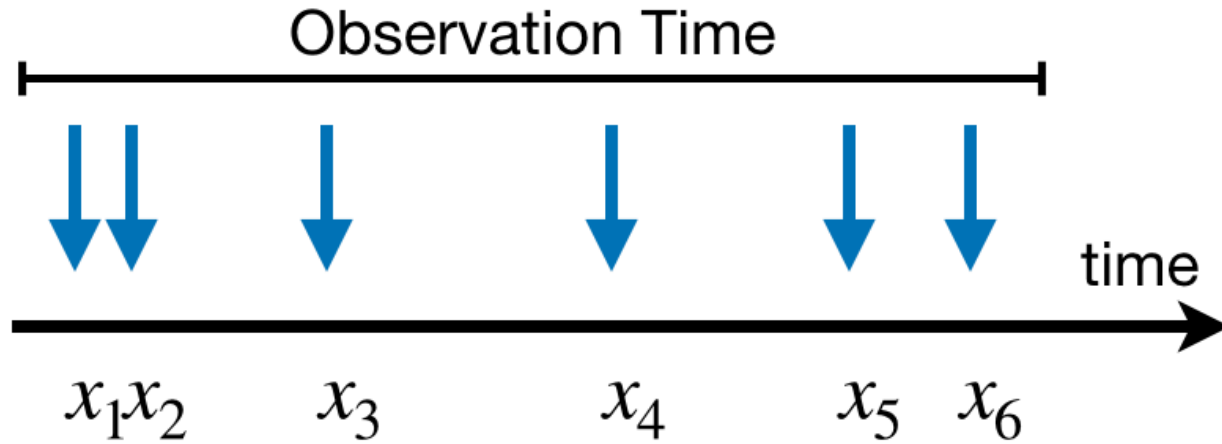
INSTRUCTIONAL
Requirements



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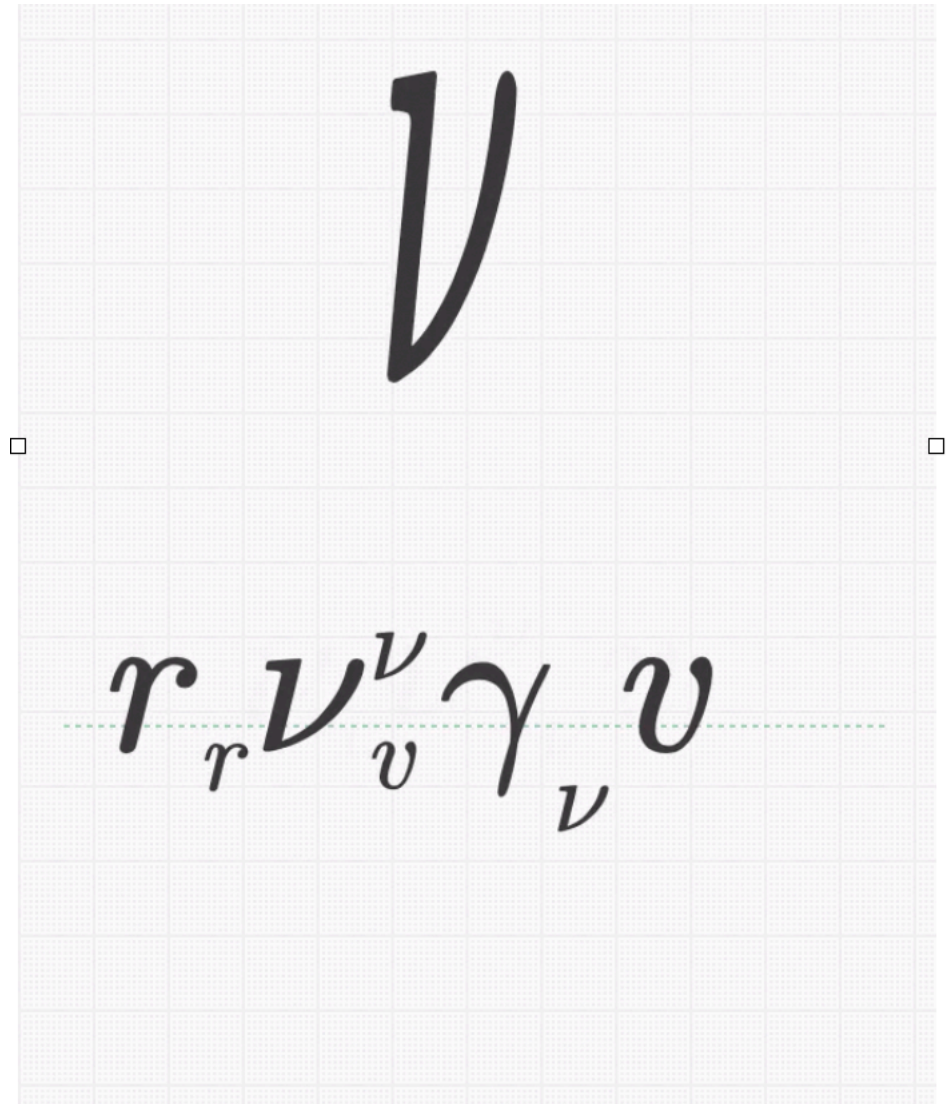


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$$X_i := \{x_1, x_2, x_3, \dots, x_n\}$$

$$X := \{X_1, X_2, X_3, \dots, X_k\}$$

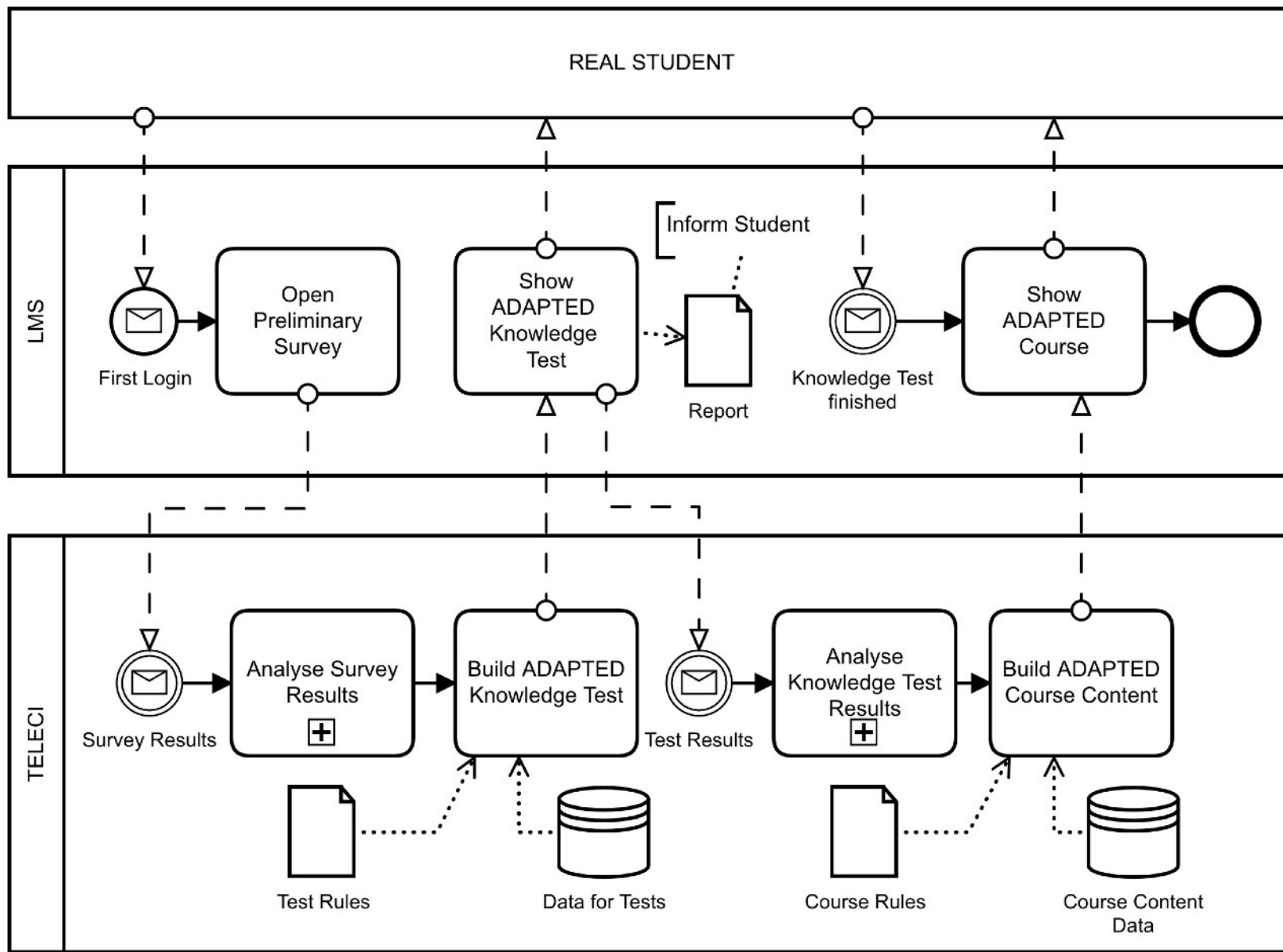


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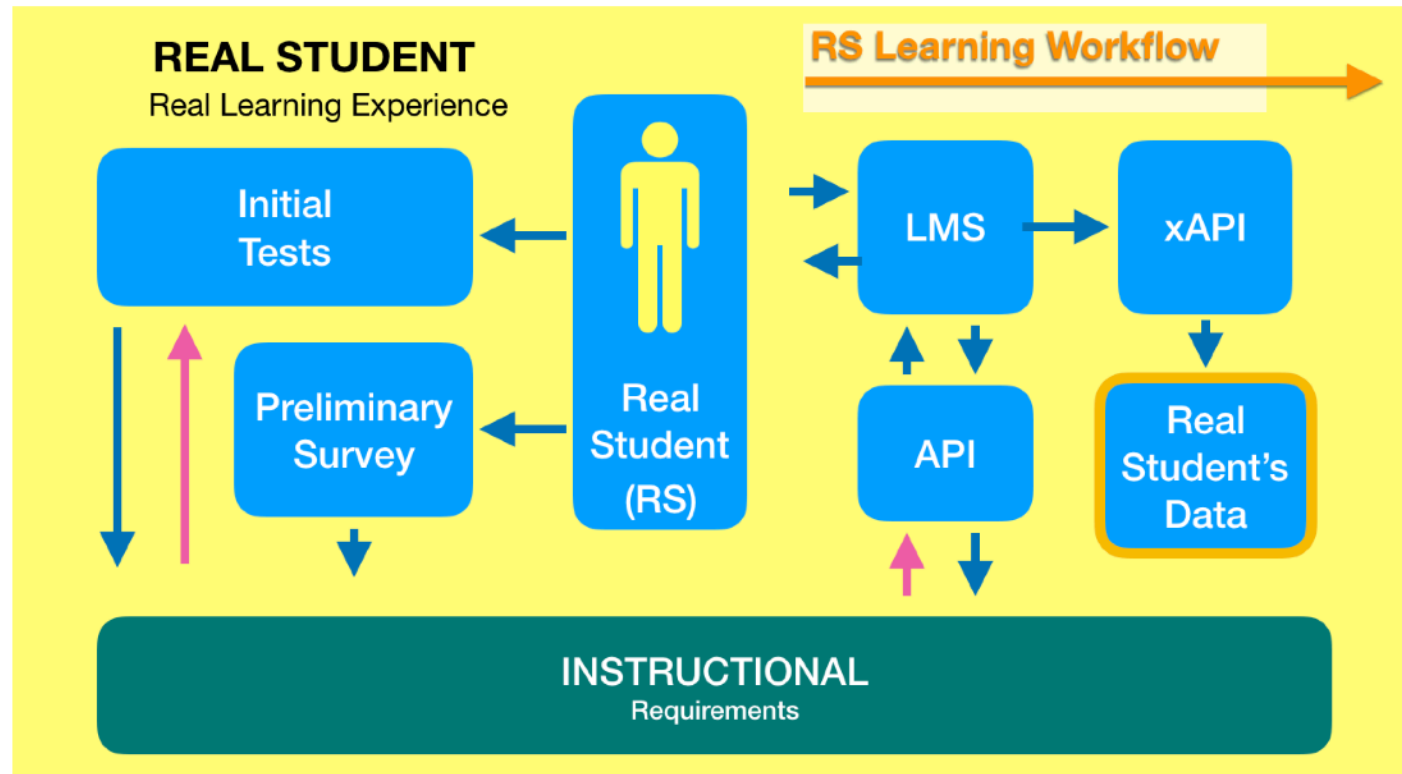


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