Augmented Science – E-Guide

This document is part of the Erasmus+ project '*Enriching Learning with Augmented Reality Simulations for Interactive Science*' (Project number: 2023-1-PL01-KA220-SCH-000164042). **The project aims** to develop scientific content and experiments enriched with **augmented reality**, together with all the necessary supporting documents and an **online active learning system** for schools in the EU. The idea behind the project is that an **augmented reality (AR)-based educational environment** will support the learning and teaching of science subjects by teachers by transferring science laboratories to students' tablets or mobile phones. Such simulations enriched with augmented reality are needed to make science education **accessible and attractive** and to continue active learning.

Main outputs of Augmented Science project:

- **E-Book**: Science Course Content-Scenario-Enriched Activities
- **Mobile app** with AR-Enriched Experiments and Simulations
- Web-based Active Learning System (**WALS**)

Upon completion of the project, its results will be made **available free of charge** and translated into the **languages** of the project partners (Polish, Greek, Turkish, Finnish).

The purpose of the E-Guide is to assist users (teachers, students, educators, administrators) in effectively utilising the project's outcomes: the mobile application and the WALS e-learning platform.

Below, we present a step-by-step guide on how to use the mobile application and the WALS e-learning platform.

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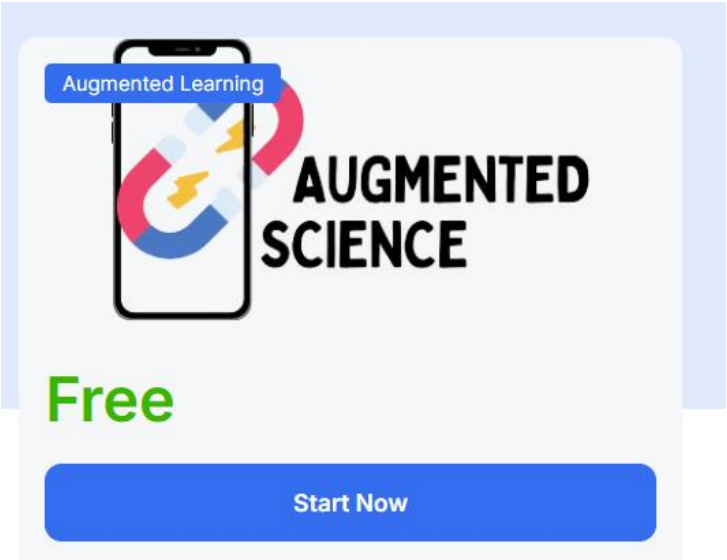
1. First, download the **Augmented Science app** to your mobile device: https://e-hub.augmentedscience.eu/courses/wals/

2. Then register on the **WALS platform** (click 'Start Now' button on the right): https://e-hub.augmentedscience.eu/courses/wals/



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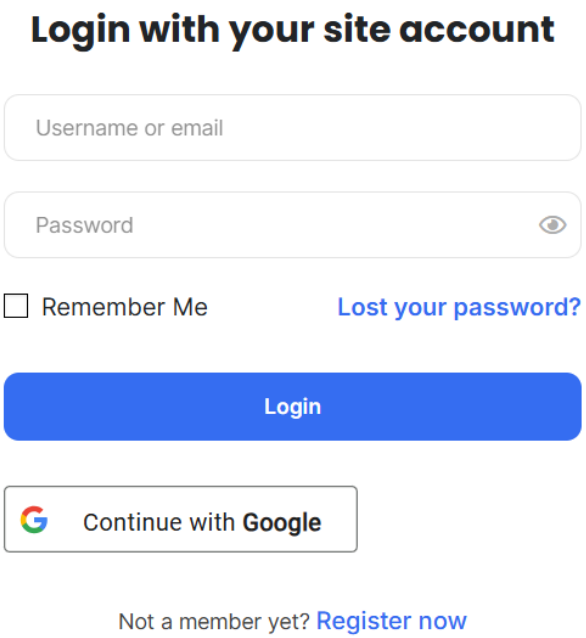
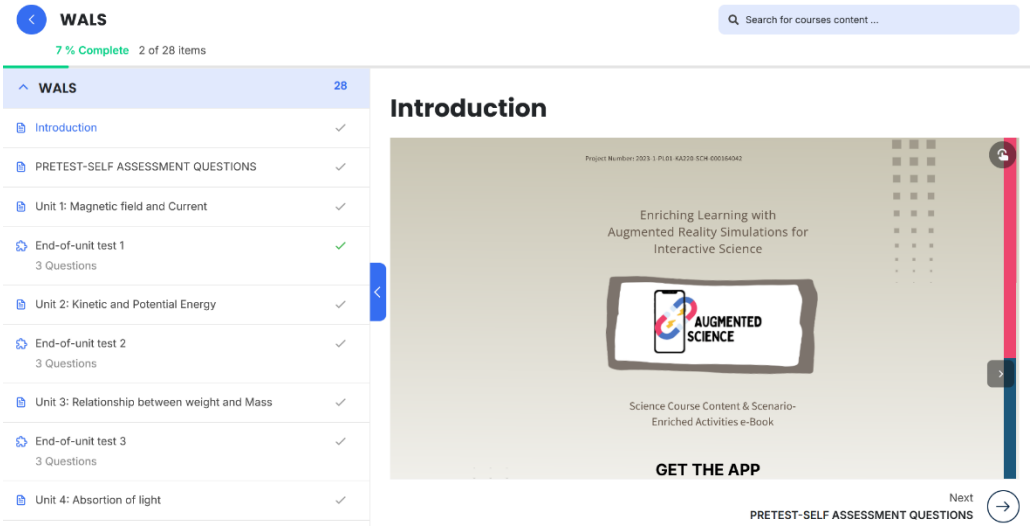
3. Enter your **username and password**. You can also register using your Google account.



4. After you login click **Start Course,** you will then be redirected to the e-learning platform, to the



Introduction module.

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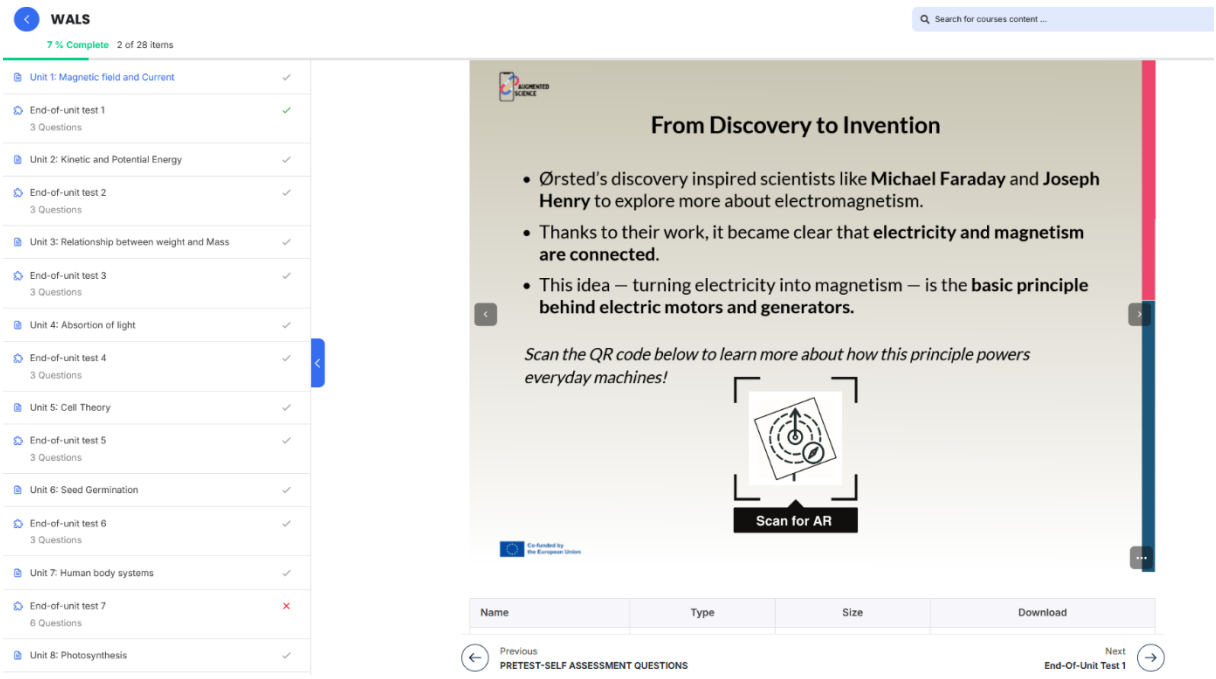
5. Use the arrows on the right and left to read the Introduction.

6. In the same way, **explore all the 12 units** in sequence. Each unit contains theoretical content and learning activities:

- Unit 1: Magnetic field and Current
- Unit 2: Kinetic and Potential Energy
- Unit 3: Relationship between weight and Mass
- Unit 4: Absorption of light
- Unit 5: Cell Theory
- Unit 6: Seed Germination
- Unit 7: Human body systems
- Unit 8: Photosynthesis
- Unit 9: Interactions between Molecules
- Unit 10: Acids and Bases
- Unit 11: Vapor Pressure
- Unit 12: Physical and Chemical changes

7. To complete the learning activities in each module, open the mobile application, select a specific unit/activity and **point your mobile device at the marker (Scan for AR)**.



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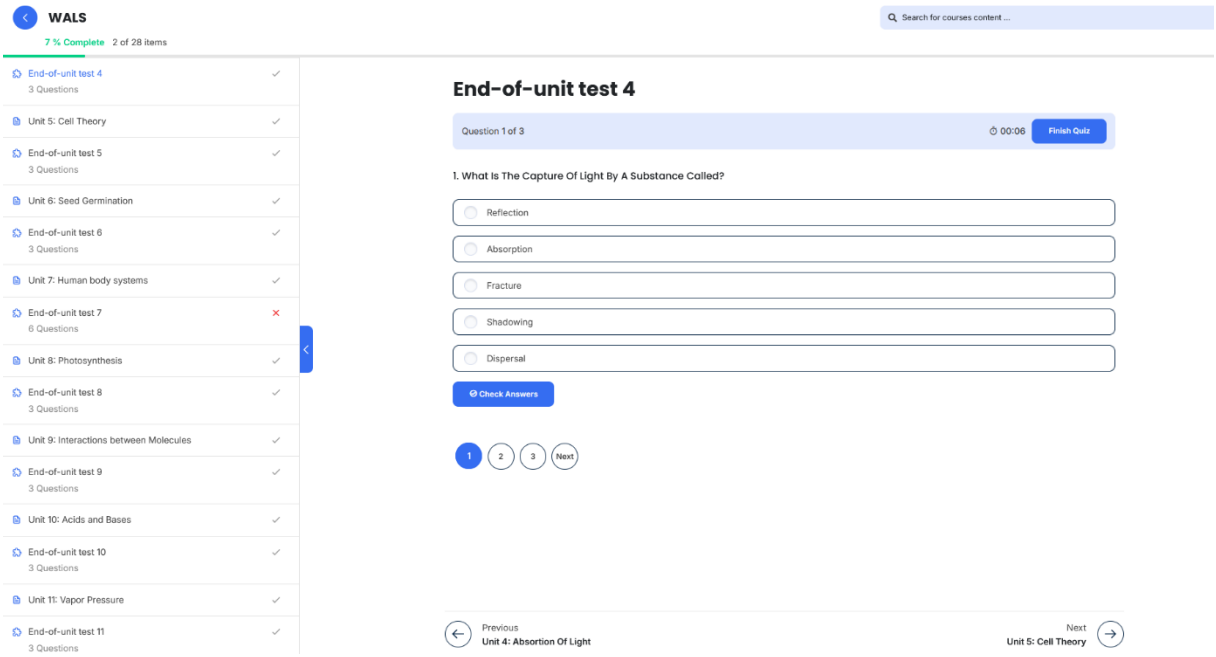
8. You can use the **marker on the slides or the marker below** (last page). You can also print the marker, place the printed marker on a flat surface and then point your mobile device at it.

9. After each unit on the WALS platform, take the **knowledge test** by answering the questions.



10. After each test, you will receive a **summary** of the points you have scored.

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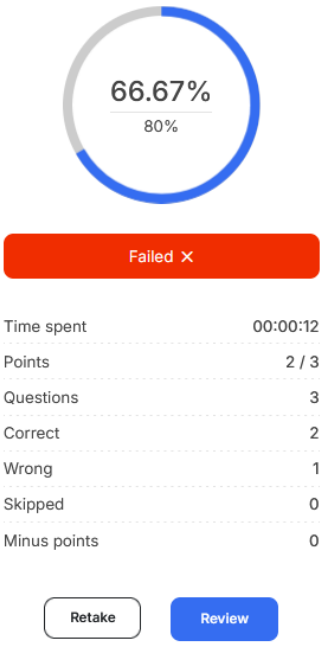
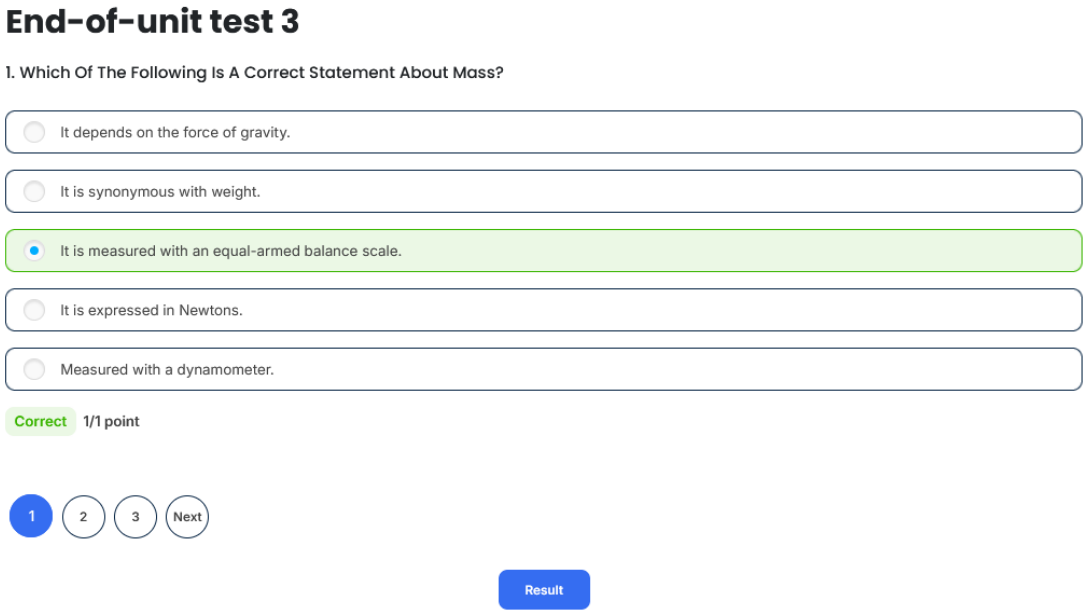


11. You can then **retake the test or review it** - check the correct answers.



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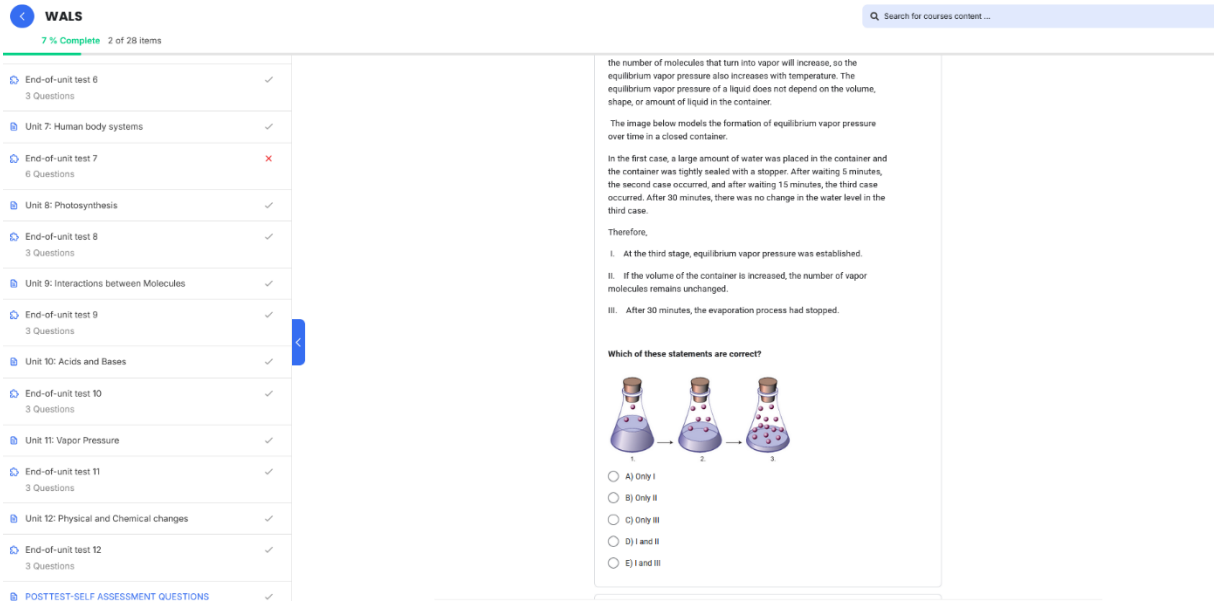
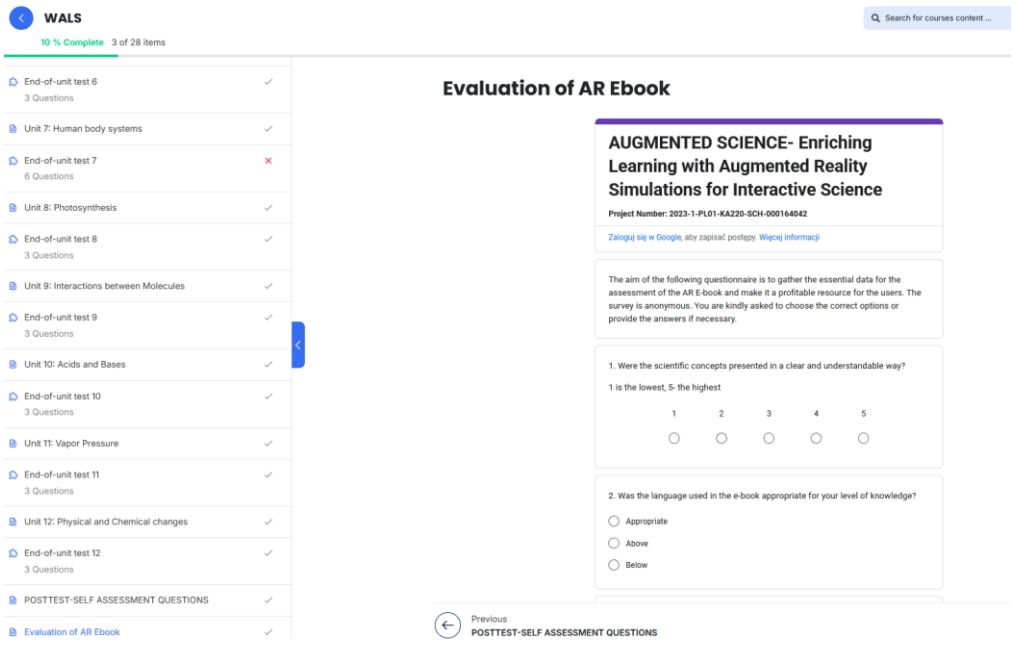
12. Before and after completing all 12 units, fill in the **Pretest and Posttest-Self Assessment Questions** on the WALS platform.



13. After completing the entire course, we encourage you to fill out the **evaluation form**.



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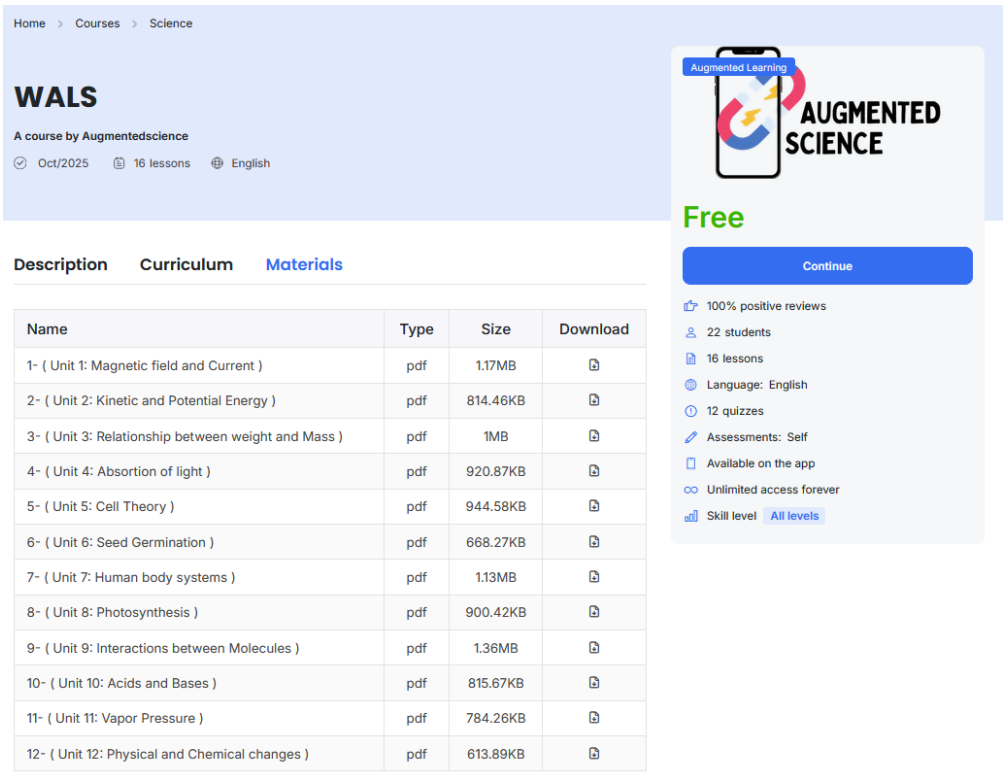
14. The pace of your individual work is up to you, but we estimate that it will take about 30 minutes to familiarise yourself with each unit on WALS platform and completing tests.

15. In the **materials section**, you can download PDF files from each module.



Name	Type	Size	Download
1- (Unit 1: Magnetic field and Current)	pdf	1.17MB	
2- (Unit 2: Kinetic and Potential Energy)	pdf	814.46KB	
3- (Unit 3: Relationship between weight and Mass)	pdf	1MB	
4- (Unit 4: Absortion of light)	pdf	920.87KB	
5- (Unit 5: Cell Theory)	pdf	944.58KB	
6- (Unit 6: Seed Germination)	pdf	668.27KB	
7- (Unit 7: Human body systems)	pdf	1.13MB	
8- (Unit 8: Photosynthesis)	pdf	900.42KB	
9- (Unit 9: Interactions between Molecules)	pdf	1.36MB	
10- (Unit 10: Acids and Bases)	pdf	815.67KB	
11- (Unit 11: Vapor Pressure)	pdf	784.26KB	
12- (Unit 12: Physical and Chemical changes)	pdf	613.89KB	

16. You can also click on **your profile** to view your completed steps, achievements, and available courses.

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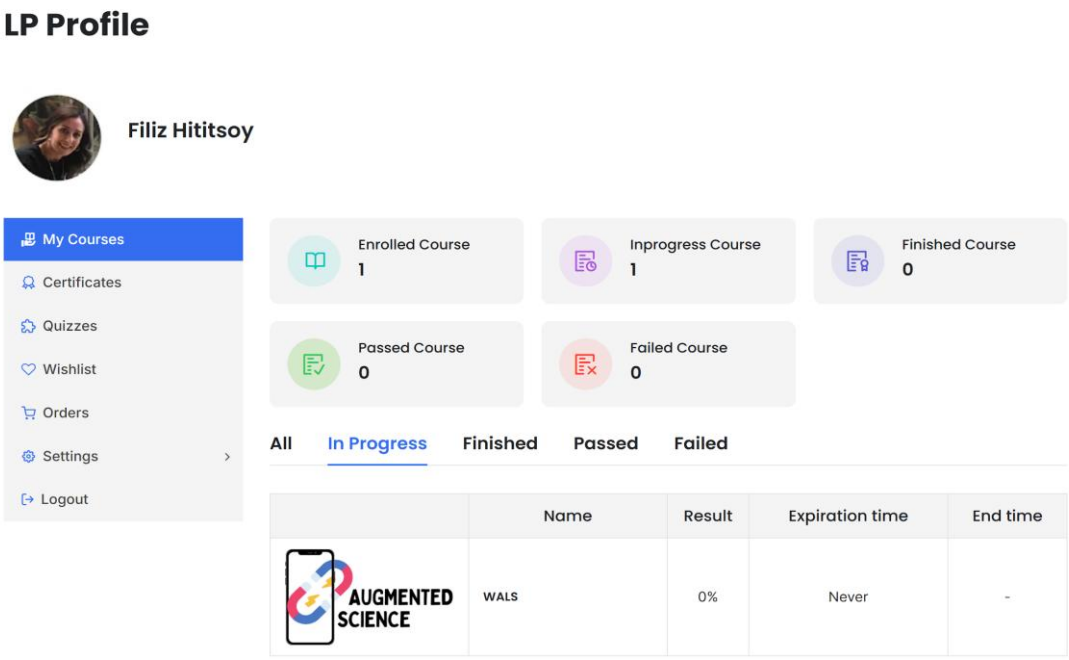
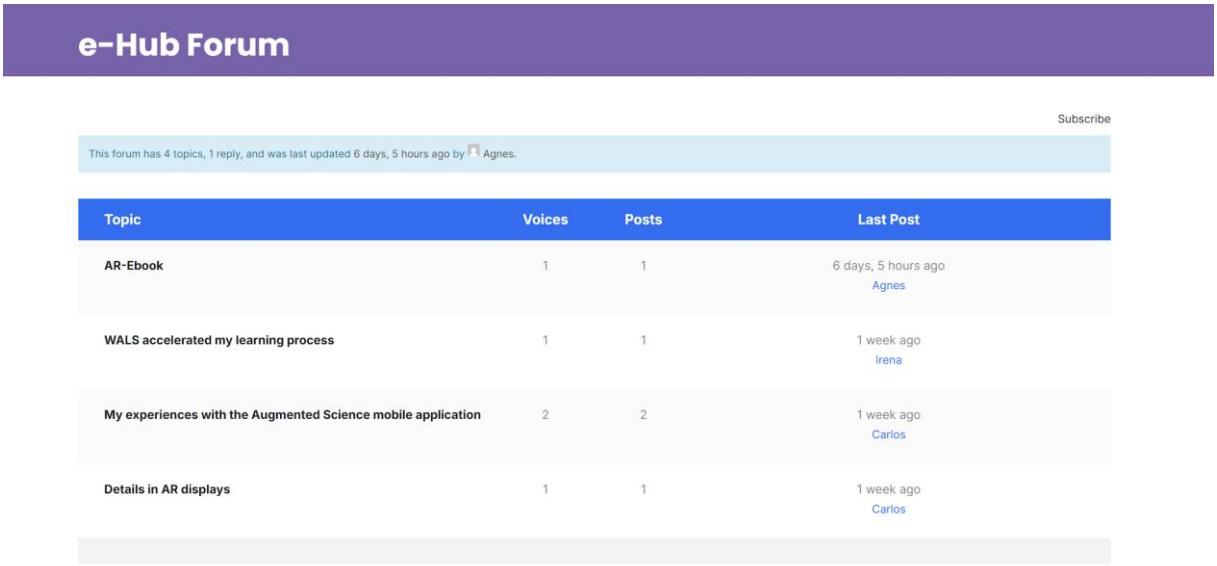


17. The **Forum section** allows you to exchange ideas and experiences, encouraging collaboration and peer learning among participants.



18. If you have any questions or concerns about the application, please contact **Muhsin: muhsinkyk08@gmail.com, Yahya: dogan.yahya.16@gmail.com** to arrange an individual consultation.
19. If you have any questions or concerns about the application or e-book, please contact **Filiz Hititsoy filiz@polygonalnorth.fi** to arrange an individual consultation.

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Marker do Augmented Science Mobile app:

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