

Introduction

During Covid-19 pandemic, with synchronous classes by videoconference and the use of Moodle platform as a virtual learning environment, a flexible learning assessment system was implemented in the Physics of the Universe subject, for high school pre-service science teachers in Chile.

Students were able to choose between two different learning paths, each one with its own assessment instances:

- A "traditional" learning path incorporated online classes (using Zoom) and a series of resources and activities through the Moodle platform. Evaluation consisted of two global written tests.
- An "optional" learning path consisted of the same online classes, resources and activities in Moodle platform, but also added two "Interactive Learning Modules" that students had to complete as outside classwork. In this case, evaluation consisted of the same two global written tests plus a final summative assessment for each module.

Implementation

Two Interactive Learning Modules (ILM) were designed: one for Unit 1 (Solar System), and another for Unit 2 (Stars). Students were required to complete both modules during the semester. A scheme of the Interactive Learning Module N° 1 is shown in Figure 1.

ILMs incorporated multimedia resources (Genially, WordWall, Stellarium) and intermediate formative assessments (see Figure 2).

Students had long deadlines to complete both modules, and to carry out the activities as many times as they wanted, but two fixed dates were established to send the final summative assessment, which consisted of making short videos (8 minutes).

Results

Out of a total of 70 students, 22 (31,4%) chose the optional learning path (G1), and 48 (68,6%) chose the traditional learning path (G2).

Regarding academic results:

- 32% of G1 students passed the subject.
- 50% of G2 students passed the subject.

Figure 1. Interactive Learning Module scheme.

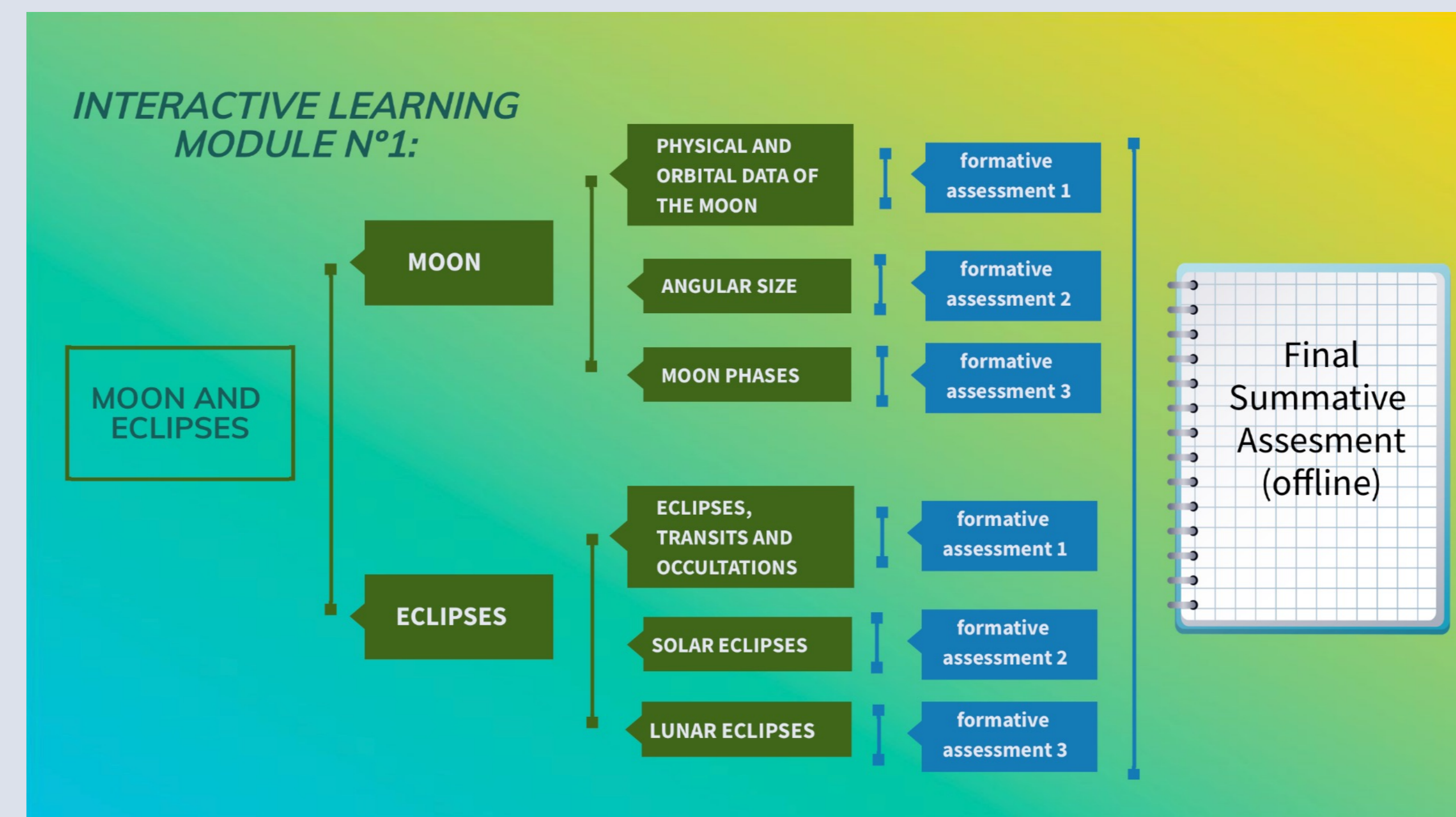


Figure 2. Some multimedia resources used.

Discussion

The purpose was to create a context that facilitated the autonomous work of students, favoring inclusion: those who did not have a computer or Internet access at home, had the possibility of organizing their time to complete the modules using the resources that the university makes available to students on campus.

Due to the pandemic context in which the subject was implemented, it is difficult to analyze academic results. We are preparing an improved design for the learning paths, in order to implement it during 2023.

Acknowledgements

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