

Mediating in Physics

**A sample lesson plan for learners' transition from primary to secondary education -
To be used in the language classroom and/or in other subjects**

Subject: Physics and second foreign language (German or French)

Level: Transition from primary to secondary education: first year of secondary education (age 11/12)

Duration: Five lessons

Short description:

In this lesson plan proposal students use previously acquired knowledge in Physics (5th and 6th grade of primary education) and the second foreign language (German or French) in order to enrich their knowledge in German or French as well as in Physics. In Greek schools the second foreign language is taught in parallel classes and students choose one of them, Therefore, all the foreign language lessons described here are relevant to both French and German courses. The students have learnt their second foreign language since the age of 10 and have learnt their first foreign language (English) since the age of 6.

The lesson plan proposal includes two texts describing two experiments related to water, one in German and one in French. The main objectives are reading comprehension, vocabulary acquisition and mediation. The proposal builds on plurilingual education: students acquire vocabulary in German or French whereby the vocabulary they already know in Greek or English can be the basis of useful learning by discovery and memory strategies. In addition, they practise their reading and mediation skills whereby their knowledge of physics, the pictures which accompany the texts and their knowledge in other languages (Greek and English) support their reading comprehension. Such comprehension need not be detailed and total, and this is why not every single word is explained (e.g., all the kinds of flowers in the German text). Finally, students in this unit become aware of the various linguistic systems as well as of their own learning. The aforementioned experiments will be carried out with the physics teacher later on after students have worked with both texts (German and French) and the guidelines for the experiments have been mediated in Greek.

Main learning objectives for language learning:

Increase language awareness (comparisons of languages/switch between languages/compare languages), vocabulary, reading comprehension

Main learning objectives for content learning:

Students learning French will mediate the instructions (a written text) of a physics experiment on water to their fellow students, learners of German, (and vice versa). The concepts in both experiments (in German and in French) are known to all students in Greek, since they are part of the school curriculum (5th¹ and 6th² grades of primary education).



Main learning objectives for plurilingual and intercultural education:






[FREPA, C.1.3 “Competence in mediation”](#)



¹ Apostolakis, E.G., Kalkanis, G., Panagopoulou, E., Pantazis, G., Savvas, S., Sotiriou, S., Tolia, V., Tsangogeorga, A. & Tsagliotis, N., 2015. Fysika Elementary. I research and discover. Student's book. Fifth Grade. Athens: Ministry of Education, Research and Religious Affairs, Institute of Educational Policy, Computer Technology Institute and Press "Diophantus".

² Apostolakis, E.G., Panagopoulou, E., Savvas, S., Tsagliotis, N., Makri, B., Pantazis, G., Petrea, K., Sotiriou, S., Tolia, V., Tsangogeorga, A. & Kalkanis, G.Th., 2009. Fysika Sixth Grade Course - Student's Book. Athens: CTI Diophantus.

	Learning objectives for language learning, for content learning, and for plurilingual education	Icons	Activities	Tools/resources
<p>Before lesson 1</p> <p>– last year of primary education</p>	<p>Learning objectives for language learning:</p> <p>Introduction of specific terms in German or French for this topic</p> <p>Learning objectives for plurilingual education:</p> <p>International words / plurilingual strategies</p>	 	<p>Teacher introduces the following terms (in German and in French):</p> <p>Terms in German (examples): Blumen, Pflanzen, Wasser, Glas, blau, rot.</p> <p>The meaning of these words can be deduced by the students based on their knowledge of English, for example, “blue” in English – „blau“ in German. In this way the students employ plurilingual strategies.</p> <p>Terms in French (examples): eau, glace, monde, croix, solidification, evaporation.</p> <p>The meaning of these words can be deduced by the students based on the knowledge of English, for example, “solidification” in English – „solidification“ in French. In this way the students employ plurilingual strategies (internationalisms).</p>	<p>Memory game</p>

	Learning objectives for language learning, for content learning, and for plurilingual education	Icons	Activities	Tools/resources
			In order to practise, students play (in pairs) a memory game with cards in which they need to pair the Greek and the German/French words (example in German).	
Before lesson 1 – first year of secondary education	<p>Learning objectives for content learning: Revision of content (physics/water)</p> <p>Learning objectives for plurilingual education: Revision of known vocabulary in German or French</p>	 	<p>Power point presentation (in Greek) revising the content of the 5th and the 6th grades physics.</p> <p>Vocabulary in German – Power point presentation for the revision of previous year’s vocabulary and introduction of new vocabulary (example for German): Experiment/Versuch, Tinte, Stiel, Blüte und verbs from the instructions of the first experiment (e.g., beobachten).</p> <p>Vocabulary in French – revision of previous year’s vocabulary and introduction of new vocabulary: experimentation, état,</p>	Power point presentation

	Learning objectives for language learning, for content learning, and for plurilingual education	Icons	Activities	Tools/resources
			condensation, buée, bouillante and verbs from the experiment (e.g., observe).	
Pupils have two weeks to prepare (in groups) their presentations 				
Lesson 1	<p>From German to Greek</p> <p>Learning objectives for language learning:</p> <p>Language Descriptors for Reading in German, Pre-A1/A1: Understand factual information and explanations</p> <p>Learning objectives for plurilingual education:</p> <p>Mediation objective-Pre-A1, from German to Greek: Can list (in Language B) names, numbers, prices and very simple information from texts (written Language A) that are of immediate interest, that are written in very simple language and contain illustrations.</p>	 	<p>Learners of German present the experiment in Greek (power point presentation with pictures and German text)</p> <p>Learners of French take part in a kahoot at the end</p>	<p>German text</p> <p>Source: https://www.pinterest.de/pin/752523418971431575/</p>
Lesson 2	<p>From French to Greek</p> <p>Learning objectives for language learning:</p>	 	<p>Learners of French present the experiment in Greek (power point presentation with pictures and French text)</p>	<p>French text</p> <p>Source: https://www.pinterest.fr/pin/483222234997339864/</p>

	Learning objectives for language learning, for content learning, and for plurilingual education	Icons	Activities	Tools/resources
	<p>Language Descriptors for Reading in French, Pre-A1/A1: Understand factual information and explanations</p> <p>Learning objectives for plurilingual education:</p> <p>Mediation objective-Pre-A1, from French to Greek: Can list (in Language B) names, numbers, prices and very simple information from texts (written Language A) that are of immediate interest, that are written in very simple language and contain illustrations.</p>		Learners of German take part in a kahoot.	
Lesson 3	<p>Learning objectives for language learning and plurilingual education:</p> <p>Increasing language awareness and learning awareness</p>	 	<p>Reflection</p> <p>Compare languages</p> <p>Discuss process of mediation</p> <p>Fill-out questionnaire on what and how they have learned.</p>	Questionnaire

Final products that could be added to the students' portfolio (dossier):

- 1) Power point presentation with pictures and [German](#) or [French](#) text,
- 2) [Questionnaire on the students' CLIL experience](#)

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