



IO 1. School debates – desk research

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Executive summary

This report concerns ODYSSEY Intellectual Output 1 **School debates – desk research**. The report includes an analysis of debate initiatives within the four project countries (Poland, Greece, Estonia, Serbia). The aim of the report is to explore the conditions for the reliable and efficient use of debates in education, especially in science education.

The report consist of following parts:

General introduction dedicated to controversies and ‘rhetorical turn’ in the field of Science. This section is based on text prepared by Foteini Egglezou (IRESE).

Why debates? – this section is dedicated to presentation of the results of the survey conducted in 2018 among 139 STEM teachers in order to collect information on oral presentation and argumentation skills of pupils, as well as usefulness of educational materials developing rhetorical skills.

What is a debate? – this section is dedicated to presenting general information about debates, including types of debate resolutions, debate’s participants, debate’s settings and necessary tools for debating. This section is based on text prepared by Foteini Egglezou (IRESE).

Short history of Debate – this part is presenting a brief history of debate overview, starting from its roots in ancient Greece to the modern Oxford Union Society. This section was prepared by Foteini Egglezou (IRESE).

Debates and STEM education section indicates the importance and usefulness of using debates and importance of skills developed thanks to debating in STEM education. This section was prepared by Foteini Egglezou (IRESE).

Debates in education – general overview – In this section general overview of national approaches to implementation of debating methods in school education in Estonia, Greece, Poland and Serbia and the most popular topics for debates are presented. Partners commented also on how debates fit into national curricula. Material was gathered by each partner.

Debates in education – national examples from partners’ countries – This section describes implementation of debates in school education in Estonia, Greece, Poland, Serbia, national organisations supporting usage debates in school practice and lists supporting materials and guidelines for teachers and educators. In case that debates are used during STEM classes, it is indicated. Material was gathered by each partner.

Main obstacles and barriers are presented, based on common conditions in partners’ countries. In the last section we present **recommendations for ODYSSEY implementation**, which address the most important challenges regarding debating in schools.

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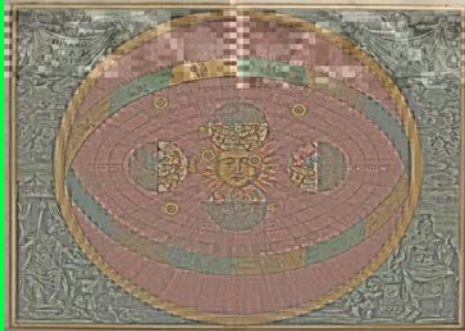


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General introduction

In Science, like in everyday life, controversies occur all the time. Scientists disagree about the methods which are used for conducting an experiment, about theories that explain certain phenomena, about various research hypothesis. Thomas Kuhn in the Structure of Scientific Revolutions (1962) is highlighting the importance of such conflicts between scientific paradigms and calls all the members of the scientific communities to learn the techniques of persuasive argumentation signalling a “rhetorical turn” (Simons, 1990) within the field of Science.



Did you know that the helio-centric theory of the solar system needed more than two centuries after the death (1543) of Nicolaus Copernicus for becoming acceptable by the scientific community and the public? (Kuhn, 1957; Sherwood, 2011).

The paradigm shift from the **Ptolemaic or Geocentric model** of the solar system to the **Heliocentric** was the result of a long debate among scientists.

New evidence, as the Keplerian orbits in 1609 and Galileo’s observations in 1610, contributed to the progressive conversion of the scientific community’s beliefs.

Source of the image: <https://www.universetoday.com/33113/heliocentric-model/>

In such cases, scientists as orators state their claims upon an issue and search for more evidence in order to better support their claims. Consequently, within the scientific context the notion of controversy is interwoven with the promotion of research and the development of Science itself, while, often, controversies deal with socio-scientific issues with great impact to human life (Oulton et al., 2004).

In science it often happens that scientists say, 'You know, that's a really good argument; my position is mistaken,' and then they would actually change their minds and you never hear that old view from them again. They really do it. It doesn't happen as often as it should, because scientists are human and change is sometimes painful. But it happens every day. I cannot recall the last time something like that happened in politics or religion.' (Carl Sagan)

Why debates?

Before preparation of the ODYSSEY proposal, the Consortium gathered feedback from STEM teachers about the general idea of implementing debates during STEM classes in the school practice. A CAWI and PAPI surveys were distributed among STEM teachers in partners’ countries. CAWI (Computer Assisted Web Interview) is a research technique - an interview in which participants fill in an online questionnaire or survey received via the Internet. The CAWI method is one of the most popular

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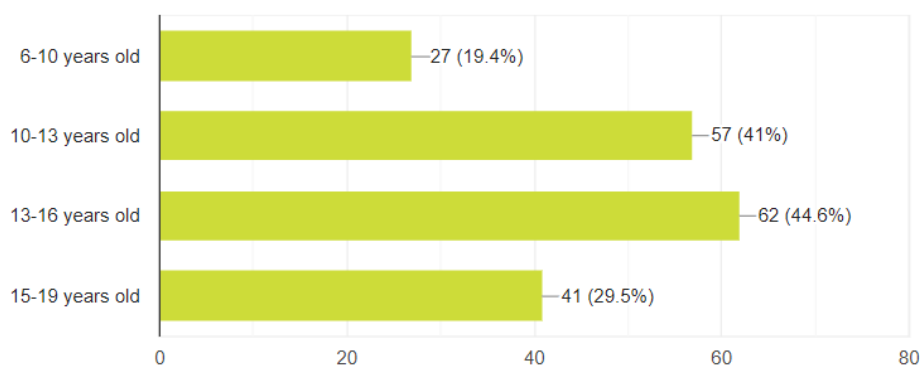
research methods, thanks to giving respondents a sense of anonymity and the opportunity to participate in the study at a time convenient for them. PAPI (Pen and Pencil Interview) is the traditional method in which a person fills in a paper form or a questionnaire. Both surveys gave the respondents sense of anonymity, which helps to obtain accurate data.

Three content questions were included in the survey. Teachers were requested to assess their students' skills in oral presentation and argumentation. Additionally, they were asked, if educational materials concerning the development of rhetorical skills in STEM would be useful in their work at schools.

139 responses from teachers were collected. Teachers of students aged 13-16 were the dominant group (45%), followed by the teachers of students aged 10-13 (41%). For details see the figure below.

Your students' age

139 responses



The first content question was dedicated to students' argumentation skills. Teachers could assess them in four categories: very good, satisfactory, requiring improvements and very poor. Most teachers responded that these skills required improvements (54%) or considered them as very poor (23,7%). Only 3,6% of respondents assessed the skills as very good.

Teachers assessed students' oral presentation skills mostly as requiring improvements (57,6%). Only 2,8% assessed them as very good.

The last question concerned usefulness of educational materials dedicated to the development of rhetorical skills in STEM in the school practice. The majority of teachers (93,6%) declared them as either useful or very useful. No one considered such material as not at all useful.

The graphical information on the teachers' answers is presented in figures on the next page.

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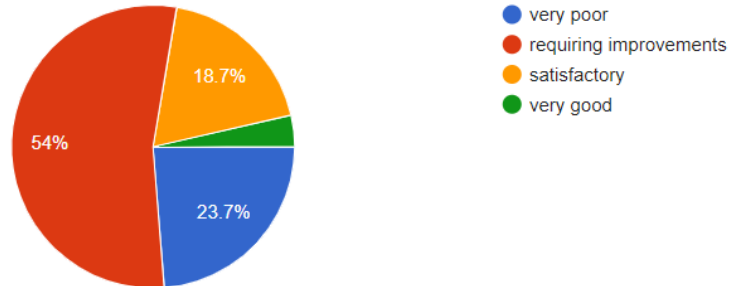
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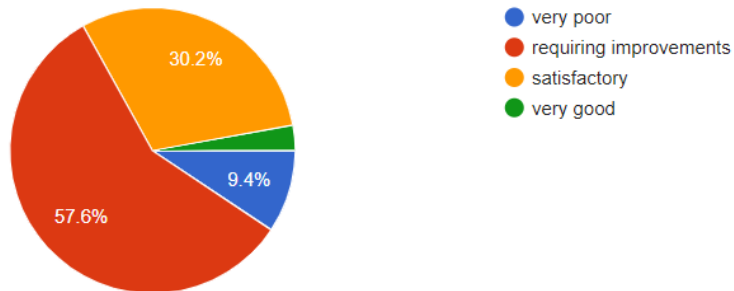
Do you find your students' argumentation skills

139 responses



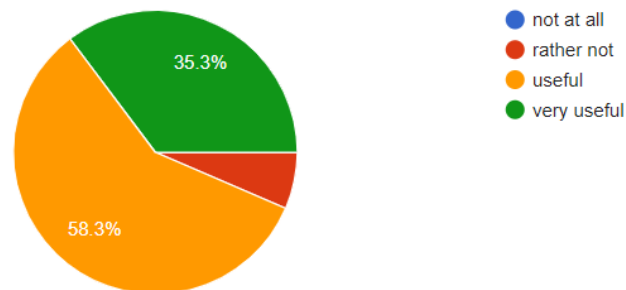
Do you find your students' oral presentation skills

139 responses



Would you consider educational materials for improving rhetoric skills in STEM useful in your school practice?

139 responses



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What is a debate?

Debate is a formal interactive process of exchanging reasonable arguments about a controversial **topic** or **resolution** or **motion** for supporting a certain claim after having conducted a thorough inquiry on it in equal and adequate time. The interaction among the participants of a debate may take a competitive form.

As educational strategy debate consists of the crossroad where various important life skills are meeting such as:

- a) **reasoning skills** (e.g. abductive reasoning, productive reasoning etc.)
- b) **communication skills** (e.g. active listening, body language, voice variety etc.),
- c) **argumentative skills** (e.g. invention of sound and persuasive arguments and counterarguments),
- d) **critical skills** (e.g. critical analysis and refutation of the produced counterarguments within a certain context through the use of critical questions),
- e) **linguistic skills** (e.g. accurate and effective use of language for expressing the necessary argumentation) and
- f) **cognitive skills** (e.g. knowledge of the examined topic).

As it becomes obvious, debate consists of a dynamic and demanding process. Also, it represents a particular form of public speech which presupposes both freedom of speech and complex mental and communications skills.

Types of debate resolutions

The base of a debate is its resolution. The resolution that sets the examined topic consists of the pivotal axe around which rotate the type of arguments and counter-arguments that will be used by the debaters, the type of analysis that will be followed and the type of evidence that is required (Henderson, 2015). There are three common types of debate resolutions:

- ▶ **Fact resolutions** : They call into question some reality. So, they are either true or false. The debater tries to promote the search for truth by using proof, evidence, empirical in nature. For example:

“Parallel circuits consume more energy than series circuits.”

- ▶ **Values resolutions**: Such resolutions compare conflicting values. They require a debater to rank a part value above all other values and to express evaluative judgments which are influenced by emotions, principles and morals. For example:

“It is wrong for the scientific community to hack the human DNA”.

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- **Policy resolutions:** Such resolutions intend to change some law, to propose a specific action, to reveal the consequences of modification. For example:

“The scientific community should promote the use of GMOs in order to fight poverty around the world”.

Where does a debate occur?

The process of debate may be realized in various contexts: besides the exchange of arguments and counter-arguments among friends, debating is a common process during the organization of public meetings of stakeholders for a specific goal. For example, within scientific communities, debating scientists' ideas facilitates the increase of the audience's awareness on an issue, due to sharing of information, while at the same time it empowers the involvement of the audience to decision-making processes. As it becomes obvious such interactive practices (Windes & Hastings, 1965:11) are necessary for the cultivation of citizens' "skills of advocacy" (Zompetti, 2006:178) and the successful function of democracy.

Also, debates possess an important role in school context (school debates) either in a competitive form or not. Debates can contribute both to students' educational achievement in various cognitive fields and to the formation of a "well rounded individual" (Fidler, 2011) due to the enhancement of students' linguistic, communication, collaborative and critical skills (Brown, 2015).

In the academic institutions, academic debates consist of a common competitive practice among students in local, national and transnational level. In particular, the World Universities Debating Championship (WUDC) is the world's largest annual tournament since the beginnings of 1970s, when it took a systematic form (Flynn, n.d.). More than 1200 teams from all over the world participate to it each year. It consists of a parliamentary debating tournament held in British Parliamentary Debate format (Bailey and Molyneaux, 2005), "which grew out of the traditions of the United Kingdom Parliament in Westminster and follows some of the conventions of the House of Commons" (Smith, 2011:2). Two teams represent the proposition and, correspondingly, two other teams the opposition. After the announcement of the resolution, both teams have fifteen minutes at their disposal for preparing their argumentation on various topics (Squirrell, n.d.; Morgan, n.d.).

Moreover, debate consists of a vital process in the procedures of the legislative assemblies too. The legislative debates are also ruled by special orders that set the context of the debating of ideas and laws. (Legislative Assembly, 2017).

Undoubtedly, the use of debate can be applied in many different disciplines. Besides Law, Politics and Social Work, students in design-based subjects, such as engineering, graphic or product design could acquire debating skills for providing their audience with "well-qualified justifications for making particular design choices" (Glover, 2014).

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Who participates to a debate?

The usual stakeholders of a debate are:

1) The moderator. The moderator is responsible for starting the debate, describing the debate format to the audience, introducing the speakers and wrapping up the debate.

2) An audience. The role of the audience varies. In some formats of debates (e.g. parliamentary debates) the audience, as critical listener, becomes better informed about an examined issue, while in other formats (e.g. Oxford debates) the audience votes for the decision that will be taken. In this way, it is reflected the power of debate to “change the world” (Tindale, 1990:84).

3) The debate participants. Two opposite teams participate in a debate: the **affirmative team** that stands for the motion and the **negative team** that stands against the motion. The number of participants of each team may vary according to the debate format (from two to five). Each team has to support its position by providing the audience with the necessary arguments, while it has to rebut the counter-arguments of the opposite team in order to convince the audience about the truth of their statement.



Which are the necessary tools for debating?

The necessary tools for participating to a debate are:

Logical consistency: The set of propositions that each participant uses for forming an argument is said to be consistent if and only if there is at least one possible situation in which they are all true.

Factual accuracy: Each participant needs to bolster his argumentation by providing **evidence:** facts such as statistics that support a position, historical or scientific examples etc.

Some degree of emotional appeal: Although emotions can influence negatively our judgment, all reasoning and thinking is loaded with emotions which is necessary for a final decision-taking (Baron, 1994).

Ethos: It concerns the strategy of “favorable character presentation” (Žmavc, 2012) of each participant.

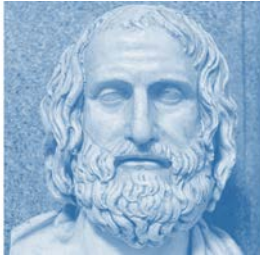
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Short History of Debate

It is commonly accepted that the roots of debate lie in Ancient Greece and, especially, in Athens (De Caro, 2011). Debate has shaped the democracy of the era through the delivery of persuasive argumentative speeches at the oratorical platform of Pnyx, by orators who were influencing the political decision-making and decision-taking of the Greek citizens.



Did you know that Protagoras (490 B.C.-420 B.C.), “the father of debate”, was teaching his students that there are at least two opposite arguments (*logoi*) for supporting a claim (for the claim and against it) (Mendelson, 2002:2). So, “dittoi logoi” or “dialexeis” consisted of a common teaching and learning strategy for enhancing students’ judgment as well as their capacity of managing and negotiating conflicting individual or political issues. Soon enough, “dittoi logoi” took the form of “public speech contests.”

Also, the *Tetralogy* of Antiphon (480-411B.C.) proves the influence of controversy and debate to the cultivation of the Greek judicial rhetoric. It was a collection of three groups of preparatory rhetorical activities. One group among them was including four speeches: first, the speech of the prosecutor and the defense speech of the victim and secondly, their second speech in an attempt for both to refute the arguments of the opponent. The main goal was the artful argumentative conversion from “thesis to antithesis” and the presentation of a fact under a new, different perspective.

Later, Aristotle (384-322B.C.), in 335 or 334 B.C. founded in Athens the “Lyceum” (called Peripatetics). Within the context of his school, debate was used as an educational technique for promoting ***Dialectic***. For Aristotle, dialectic was useful as: a) a mental exercise, b) a means for dialectical discussions and critical “elenchus” and c) a tool of philosophical research. (Aristotle, 1994:67). These dialectical discussions, that resembled to modern debates, were facilitating the implementation of dialectics in technical, social and gnoseological terms (De Conti & Giangrande, n.d.) contributing to the research and discovery of truth and the generation of knowledge.

Next, during the period of the Roman Republic (Res Publica Romana) (509-49 B.C.), the tradition of rhetoric, public speaking and debate was followed by the Senate, which was keeping a “central place in political action and debate” (Steel, 2015:3). For Cicero (1993, 2.8.) the exchange of arguments (*multiplex ratio disputandi*) is a useful technique, since it facilitates citizens to approach more

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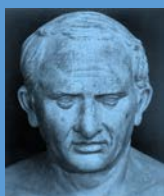
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Oxford Debates for Youths in Science Education



Marcus Tullius Cicero (106-43B.C.)

Did you know that...

Marcus Tullius Cicero, one of the most famous Roman orators sets up the five (5) rules of rhetoric and public speech?

These rules are:

(i) inventio: the necessity of finding the best arguments that support a claim,

(ii) dispositio: the arrangement of the arguments in the most effective order for achieving persuasion,

(iii) elocutio: the choice of the most suitable words for supporting a claim with accuracy, correctness and a certain style.

(iv) memoria: memory is a necessary element for delivering a speech without reading notes and

(v) actio: the delivery of the speech is based on phonetic expression, the body language (position, gestures) that have to accompany the performance of a speech.

efficiently the truth about political issues, to take decisions and undertake action relative to the political life of the era.

The notion of controversy is also present in the pedagogy of Seneca and of Quintilian (35-100 A.C.). In particular, for Quintilian *controversia* (Mendelson, 2002) was considered an optimum means for the teacher who wished to check out the “critical power” of his students (Quintilian, 1920:253, 2.5.13). In the same line, *controversia* consisted of the “organizing principle” of Quintilian’s rhetorical curriculum (Mendelson, 2001:277).

During the medieval period (XI and XVII centuries), disputation (*disputatio* in latin) become an essential part of the academic education as well as an “essential habit of medieval thought and culture” (Novikoff, 2013:1). These scholastic debates, derived from France and Italy, were expanded, as formative practice, in all Europe. They consisted of “formalized debate techniques of the medieval university” (ibid:1) in an attempt to reveal and establish truths in the fields of theology and sciences.

It is a fact that the renaissance of the ancient art of debate is noticed during the 18th century A.C. especially in London, England. By the 1770s many debating societies appear (approximately 35 of them) (Andrew, 1994; Andrew, 1996) in order to promote the Enlightenment spirit of the era as well as democratic ideals through the realization of discussions about various issues though the performance of the participants’ eloquence. Despite the fact that political and theological issues were of main importance, progressively, moral and social issues were also debated indicating the development of “public opinion” and a new “type of citizenry” (Andrew, 1994)

which included both genders of all kinds of social backgrounds (Wozniak, 2017), since women become accepted to these debating circles in 1752.

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Oxford Debates for Youths in Science Education

Among the most prominent debating societies which appeared during that era is the **Oxford Union Society**. It was founded in 1823, in Oxford, as an arena for discussion and debate, cultivating the free expression and exchange of ideas in a rather conservative University context. (<https://ecgi.global/content/history-oxford-union>).



Known personalities from various fields have participated to the debates of Oxford Union. For example, scientists such as Albert Einstein (1933), Stephen Hawking, Lord Robert Winston and Dr Jane Goodall and more recently Richard Dawkins, Ben Goldacre, Jim Al-Khalili, Simon Singh and Baroness Greenfield (<file:///C:/Users/User/Desktop/oxford%20debate/173037717-MT13-Oxford-Union-Freshers-Guide.pdf>) have developed their argumentation influencing the reasoning and thinking of the audience. The main *credo* of the Oxford Union is the freedom of speech, independent from specific political views. Also, Oxford Union is well known because of the impact of Oxford Debates on the decision-taking about important issues of the modern era.

The coat of arms of the Oxford Union Society
(Source: https://en.wikipedia.org/wiki/Oxford_Union)

Debates and STEM education

What is the most important is that the process of controversy for examining issues such as, for example, the evolution or the climate change, is considered not only as “a particularly attractive strategy” (Klumkowsky, 2017), but, also, as an essential teaching practice in the fields of **Science, Technology, Engineering and Mathematics** or in other words within the frame of **STEM Education** (White, 2014). Both, controversy and STEM Education are related to inquiry and problem-based learning (Nite et al., 2017:34), since controversial issues due to their nature don’t provide neither teachers nor students with “fixed or universally held point of view” (Crick, 1998: 56). Within this framework, controversies attribute to the students’ knowledge building process through “the movement toward argumentation” (Hanauer et al., 2009:16) and, consequently, through the use of debates or even the participation to debating competitions (<http://www.reddstar.eu/debating-science-issues-dsi-2015/>) for examining both sides of a scientific or socio-scientific issue.

The turn to argumentation and, in particular, to debate in the teaching of Science, it may seem not directly linked to STEM. Despite it, many teachers consider that “STEM subjects sometimes require going in from a different angle – like debating” and that “debate sparks students’ interest in STEM” (Reid, 2017), while, as educational strategy, debate may be related to the development of life skills or “4Cs super skills” (Kivunja, 2015) such as communication, critical thinking, creativity and collaboration.

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In more, the development of students' oral argumentation during the debates facilitates the development and debate of scientific theories based on evidence (Osborne, 2010), while at the same time it enhances their reasoning, critical thinking and communication skills (Jimenez-Alexandre & Erduran, 2008) enriching their content knowledge on scientific issues (Venville & Dawson, 2010).

In more, in USA argumentation and, consequently, debating are related to the *Next Generation Science Standards (NGSS)* (NGSS Lead States, 2013) as core practices which highlight that Science doesn't consist only of 'a set of facts' (McNeilla et al. 2016, 2027). For example, a NGSS Performance Standard requires students to be able to: "Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other." (<https://www.nextgenscience.org/topic-arrangement/hswaes-and-electromagnetic-radiation>).

Debates in education – general overview

In this section general overview of national approaches to implementation of debating methods in school education and the most popular topics for debates are presented. Partners commented also on how debates fit into national curricula.

Estonia

In Estonia main types of debates are: value, societal, economic, and policy debates. Developing verbal skills are an important part of Estonian language classes throughout grades 1 to 12. Those skills are also described in the Civic Education classes, History and Literature curricula have elements of written reasoning and argumentation (how to compose a good essay, speech etc). Rhetorical and reasoning skills are also cross-cutting themes in the curricula: Citizens Initiative & Entrepreneurship, Information Environment, Values & Morality.

Greece

In Greece main areas and topics covered by debates are:

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- Issues of environmental education
- Virtual trials
- Philosophical issues
- Issues of ancient literacy
- Political debates
- Ethical dilemmas
- Debates on modern social issues

Debating fits the Greek national curriculum. According to the *Interdisciplinary Common Framework of Studies Program* and the *National Curriculum* (FEK 303/13-3-2003) in the Senior School (Gymnasium) and the High School (Lyceum) debating covers the majority of the desirable goals in the teaching of oral argumentation in the teaching of Language Arts. In particular, debating might provide students of Senior Schools with the opportunity to develop argumentative skills, as communication skills, to “evaluate and critically examine information and argument...” (p. 3778), “... to spot and discuss about other’s arguments...” (p. 3781), to evaluate the “efficacy, persuasiveness and quality of oral arguments, their logical sequence and justification...” (p.3788).

The students of High school (FEK 131, vol. B; 07-02-2002) are called to participate to the debates (p. 1342), since their implementation is correlated to the more efficient teaching of ancient rhetorical texts (p. 1816).

(See Egglezou, Foteini (2016). Argumentation in DEPPS-APS of primary and secondary education in language arts lesson, in the proceedings of the 1st Panhellenic Conference “National Curriculums – Educational manuals: from the past to present and future (4-6 March 2016, Athens). (<https://tiny.pl/t4pjm>)

As regards the national curriculum for Physics and Chemistry, debating fits the purposes of these lessons, since it provides students with the possibility of:

- Defining various notions
- Explaining various scientific theories
- Providing the necessary justification for various scientific ideas
- Describing scientific information as evidence and
- Expressing scientific rules

(See the *Interdisciplinary Common Framework of Studies Program – Physics/Chemistry*)
http://ebooks.edu.gr/info/cps/25deppsaps_FisikisXimias.pdf

Many private schools in Athens and Thessaloniki organize interschool debate competitions such as: (American Community Schools (ACS), Champion School, Hellenic-American College of Athens (HAEF), Arsakeia-Tositseia Schools, Ekpedeftiki Anagenissi, Bryon College, Costeas-Geitonas, Geitonas School, Mantoulides Schools, Saint-Paul/DeLaSalle, College DeLaSalle, Jean d’ Arc, Saint Joseph, German

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School of Athens, Ellino-Germaniki Agogi, Politropi Armonia, American College Anatolia in Thessaloniki, Moraitis Schools, Pierce, Avgouleas-Geitonas, Nea Genia Ziridis, Rizareio Parochial School, Kessariss School, Ionios School, Kastritsi School Patra, I.M. Panagiotopoulos School, Ekpedftiria N. Bakogianni, American Farm School, etc.). Winners of the above private schools participate to the World Schools Debating Championships (WSDC). Relative debating activities are conducted by public and model experimental schools in Athens and Thessaloniki such as: Ralleia Model Experimental Schools in Peiraieus, Evangeliki Model School of Smyrna, Varvakio Model School, the Experimental Lyceum of Thessaloniki and many others.

Poland

In Poland, debating currently is not a part of educational curriculum. However, it is suggested as a valuable teaching method in the curriculum for Geography at the secondary school: **“organization of debates**, seminars, competitions, photo exhibitions, development of guides, posters, folders, portfolio, including using IT resources and modern multimedia techniques;” (PL: 5. organizowanie debat, seminariów, konkursów, wystaw fotograficznych, opracowywanie przewodników, posterów, folderów, portfolio, w tym z wykorzystaniem środków informatycznych i nowoczesnych technik multimedialnych). See: <https://podstawaprogramowa.pl/Liceum-technikum/Geografia>. As this curriculum is new (introduced for the school year 2019/2020), not many teachers are able to use this method during regular classes. However, there are some initiatives dedicated to debating, which are implemented as extracurricular activities, e.g. national championships (at high school at university level), local and international tournaments, national debate league, programs run by educational institutions e.g. museums. The main topics covered in such debates are: politics, economy, governance, social inclusion.

Polska Debatuje is currently working on an official report summarizing debating in Poland, entitled "How is Poland debating?" It is a scientific monograph created by debate experts and comprising the view of young scientists and professionals born after 1989 on the most important aspects of Polish public debate. It will not only describe the state of reality, but also provide specific recipes for improving it. One of the chapters will be dedicated to challenges of teaching debating in Polish schools. The report should be published by the end of 2019. More information is available at: <http://www.polskadebatuje.org/jak-debatuje-polska/>.

Serbia

Debates common in Serbia are conducted in the form of Debate clubs, organized in high schools and mainly run by Philosophy, Sociology and Serbian Language teachers. A number of universities also have Debate clubs. In Serbia there are no limitations as regards the topics of debates, however the most represented topics are related to social issues.

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Debate as a method and a learnable skill can significantly contribute to the Standards of general cross-curricular competences for the end of high school, such as communication, problem solving, cooperation, responsible participation in a democratic society, etc.

Debates in education – national examples from partners countries

In this section examples of existing initiatives using debates in school practice and organisations promoting or implementing debates initiatives are listed. Wherever possible, links to these initiatives and organisations are provided. Additionally, partners identified sources of information, supporting educational materials and guidelines, which are available for teachers.

Estonia

Initiatives dedicated to debates and supporting organisations

The Estonian Debate Society (www.argument.ee) is a non-governmental organisation with the mission of promoting debate and proper argumentation in Estonia. EDS also collects info about high school debate clubs active in Estonia (mostly in the three bigger cities, Tallinn, Pärnu, and Tartu), organises workshops on debate, supports local high school and university students to go to international debate competitions, and its projects have been funded by the European Commission. In 2019 EDS celebrated its 25th anniversary.

University of Tartu Debate Club debates in English as well as Estonian (<https://tartuvaitlus.wixsite.com/kodu>), so does the **Tallinn University of Technology Debate Club** (www.facebook.com/TTUDebate/).

TEN – Tegusad Eesti noored (Active Young Estonians) is a non-governmental organisation with the mission of promoting active participation in society and well-informed citizenship. While debating is not TEN's main activity, they have organised debates for high school students.

Individual schools are also very active – for instance, the Kadrioru Saksa Gümnaasium (a municipal school in Tallinn focusing on learning German) has participated in international debates conducted in German.

In 2011 the Estonian Debate Society organised a national debate competition on science topics, the project was funded by the Estonian Research Council. Within some Erasmus+ projects the EDS had created debate study materials that have included some resolutions on science topics.

Supporting materials and guidelines

The EDS has an overview of the most commonly used World Schools format on their website (format rules in Estonian and Russian plus a demo video: <https://argument.ee/vaitlus/keskkoolide-vaitlusformaad>), and has published a textbook about debates in Estonian (as of August 2019, the PDF

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version of the textbook is unavailable as the EDS has reportedly suffered technical issues with their newly updated website).

E-koolikott.ee (E-backpack) is a national database for educational materials to use freely from kindergarten up to high school and vocational schools, plus informal education environments. Adding new materials is encouraged nationally. The search-term “debate” yielded 17 results, which included videos and manuals, but were mainly meant for high school students (aged 16 to 19) and did not seem to be very comprehensive.

Greece

Debates in general education

As in Greece the tradition of debating is very long and strong, the list of initiatives dedicated to education (starting from university level to primary schools) is particularly big. Below, the most important initiatives in the breakdown into university, secondary school and primary school level, are presented.

At Universities (private and public):

In many Greek Universities exist rhetorical clubs that promote debating, e.g.:

- The rhetorical club of the Aristotle University of Thessaloniki (the first club of students in Greece) https://www.auth.gr/cultural_clubs/rhetoric, <https://www.facebook.com/thess.debate>
- The Rhetorical Club of the Economic University of Athens (since 2003), <http://tiny.cc/fipxfz>, <https://www.aueb.gr/el/node/13792>
- Deree College Debating Club (<http://dereedebatingclub.weebly.com/>)
- The Debate Club of the University of Patras (<https://www.facebook.com/DebateClubPatras>)
- The rhetorical club of Law School in Athens (2017) <https://www.facebook.com/LawThought/>
- The rhetorical club of Law School in Komotini (Democritus University of Thrace) <http://tiny.cc/2gpxfz>
- Club of Rhetoric, Argumentation and Narration (Pedagogical Department at the University of Ioannina)
- The Debate Club of the University of Peiraeus (<https://www.facebook.com/DebateClubUniversityOfPiraeus>)
- The Rhetorical club of the University of Peloponnese (Department of Philological studies in Kalamata), <http://classrhet-drama.kalamata.uop.gr/>

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- The rhetorical club of National Technical University of Athens <https://chemeng-ntua.gr/viewtopic.php?t=620>

(see also: Polychronides, M. (2014). Training in the art of rhetoric, today!) <https://www.e-paideia.org/content/ekpaideysi-stin-tehni-tis-ritorikis-simera>

The last decade it is noticed a constantly increased interest in the organization of debate contests among Senior and High schools. We indicate some of the organizations:

Inter Schools Debate Competitions (secondary education)

- Panhellenic Students' Competition of Argumentation-Controversy (since 2001). Organized by the Hellenic Ministry of Education and Religion and the European Cultural Center of Delphi. (<https://edu.klimaka.gr/drasthriothtes/diagwnismoi/1020-agwnes-epicheirhmatologias-antilogias>)
- Peripheral students' competition in rhetorical art of Peloponnese, since 2015 (in collaboration with the Hellenic Institute of Rhetorical and Communication Studies) <http://rhetorikoiaiones.blogspot.com/>
- Peripheral competition of argumentation-controversy of General Lyceums in Central Macedonia, Greece (since 2015) <https://edu.klimaka.gr/tritobathmia-ekpaideysh/1900-diagwnismos-kainotomia-epicheirhmatikh-ideas>
- The PanHellenic Forensics Association Tournament, <http://www.pfa.gr/winners.php>
- Debate competition for students of secondary school « Controversies », since 2014.
- Panhellenic Students' Competition of Rhetorical Art "Students-Declaimers" in Thessaloniki (for students of Senior and High School) <https://elart.gr/>
- Pan-Cretian Students' Competition of Rhetoric <http://www.pdekritis.gr/2018/04/25/18491/>
- Interschool debate competition of Senior schools "Positions and Counter-positions" (since 2017), <https://riseis2019.blogspot.com/>
- Festival of Rhetorical Education at the University of Crete (2019) <https://www.uoc.gr/agenda/7306.html>
- Municipal debate competition of Senior and High schools in Alimos « Thoukidideioi Ritorikoi Agones » , since 2017 (in collaboration with the Hellenic Institute of Rhetorical and Communication Studies), <https://www.notia.gr/2019/05/2oi-thoykydideioi-ritorikoi-agones-sto-4o-gymnasio-alimoy/>

For elementary school

Also, the last years the interest in rhetoric, argumentation and debate is extended to primary education. We indicate some relative activities:

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- Competition for students of elementary school in debate, organized by the private school DelaSalle, since 2012 (in collaboration with the Hellenic Institute of Rhetorical and Communication Studies) (<https://www.saintpaul-delasalle.gr/programmata-dimotiko/ekpaideftikes-drastiriotes/programma-ritorikis-antilogias>)
- Competition for students of elementary school, « Controversies » (2018), organized by Ellinogermaniki Agogi (<http://antilogies.ea.gr/organwsi>)
- Festival of Rhetorical Art for students of elementary school at the National Library of Greece, since 2017, organized by the Hellenic Institute of Rhetorical and Communication Studies (<http://tiny.cc/impxfz>, <https://www.rhetoricinstitute.edu.gr/?p=1154>)

Debates in STEM education

In general, within the field of STEM Education there are few initiatives for the integration of rhetoric and, especially, debate.

The initiatives concern the development of communication skills through activities such as:

the "Greek Student Parliament on Science" which makes part of the European Student Parliament in Science (since 2015). The students develop their argumentation on various socio-scientific issues following the parliamentary processes. The activity is organized by the NGO "Science View" in collaboration with the Philosophical-Psychological and Pedagogical Department of the National and Kapodistrian University of Athens under the auspices of the Greek Ministry of Education and Religion. (<https://www.latsis-foundation.org/ell/news/mathitiko-koinovoulio-tis-epistimis-2015-2016-to-mellon-tou-anthropou>)

the program "Science through Theatre" (<http://lstt.eu/>), that consists one of the accelerators of the European project *Open Schools for Open Societies* (<http://www.openschools.eu>)

The organization of **Fame Lab competition** that is organized by the British Council. The participants of this competition have at their disposition 3 minutes for presenting a scientific issue that they choose in a comprehensive and entertaining mode to the audience (>18 years old).

Few schools create science-rhetorical clubs, such as the Zanneio Model Experimental School of Peiraeus. Within the "Lab-e-ri Science Club" of the school, rhetoric is inserted in the teaching of STEM (<http://zanneiolykeio.gr/wp-content/arxeia/lamberh.pdf>).

Supporting organisations

The list of organisations supporting and promoting the use of debates in education is shown below.

- European Cultural Center of Culture (It is founded by the Greek Ministry of Culture and it collaborates with the Greek Ministry of Education and Religion for the organization of the Pan-Hellenic Competition of Argumentation-Debate (<https://www.eccd.gr/el/to-kentro/>))

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Oxford Debates for Youths in Science Education

- Centre for Ancient Rhetoric and Drama, Research Laboratory at the University of Peloponnese-Department of Philological Studies, which organizes the Peripheral Students' Debates of Peloponnese
- Laboratory of Political Communication and Media (National and Kapodistrian University of Athens), <http://www.pspa.uoa.gr/ereyna/ergastirio-politikis-epikoinwnias-kai-meswn-plhroforhshs.html>
- Laboratory of Rhetoric and Discourse (Panteion University of Social and Political Sciences), <http://mariakakaboulia.pgblogs.gr/>
- Laboratory of Strategic Communication and Media (University of Peiraius), <https://www.des.unipi.gr/el/ergastiria/scm>
- Laboratory of Applied Linguistics, Study of Literature and Rhetoric (Pedagogical Department of Athens University) <http://www.primedu.uoa.gr/ergastiria.ergastirio-efarmosmenhs-glwssologias-kai-meleths-ths-logotexnias-kai-ths-rhthorikis.html>
- The Panhellenic Forensics Association (http://www.pfa.gr/the_events.php)
- Hellenic Institute of Rhetorical and Communication Studies (I.R.E.S.E.), N.G.O./Research Institute) <https://www.rhetoricinstitute.edu.gr/>
- Debating Society of Greece, N.G.O. (<http://debating.gr/i-eteria/>)
- Greek Union for the Promotion of Rhetoric in Education, N.G.O. <https://rhetoricedu.com/>
- Afixis, N.G.O. <http://protagoras.afixis.org/about/>
- Club of Rhetoric « Logoi » <http://dittoilogoi.blogspot.com/p/blog-page.html>

Supporting materials and guidelines

There are some guidelines for teachers on debating in schools. For example:

- The Hellenic Ministry of Education provides all the participants (students and professors) to the Panhellenic Students' Competition of Argumentation-Controversy with material relative to the rules and the format of the debate.

https://www.minedu.gov.gr/publications/docs2012/121228_att00076.doc

- The Centre for Ancient Rhetoric and Drama, Research Laboratory at the University of Peloponnese-Department of Philological Studies provides all the participants to the debate's competition in Peloponnese with relative material about the format and the rules of the debate.
- Relative supportive material is provided by the Greek Union for the Promotion of Rhetoric in Education (<https://rhetoricedu.com/>)

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as well as the Debating Society of Greece (<http://debating.gr/i-eteria/>) .

- “Games of rhetorical art for students of elementary school: I think..., I express myself... I communicate” is a methodological guide (<https://www.rhetoricinstitute.edu.gr/?p=713>) submitted by the Hellenic Institute of Rhetorical and Communication Studies and accepted by the Pedagogical Institute of Greece, which may be applied as educational program in Greek schools.

The major part of the rest of the material is presenting guidelines in English language.

Poland

Supporting organisations

The most active organization supporting implementation of debates is **Polska Debatuje** Foundation. (see: www.polskadebatuje.org and <https://www.facebook.com/polskadebatuje/>). The foundation is the largest organization in Poland that develops sport debates and teaches public speaking skills. They promote substantive and cultural exchange of arguments through workshops, tournaments, moderation of public debates and international exchanges. They have already helped thousands of young people work on the art of speaking, often neglected in traditional education.

Supporting materials

Polska Debatuje prepared two handbooks: Polish version of “Winning debates” and guidelines for history teachers. They are available for free, together with some introductory videos on YouTube. In the section “Materials” there are some guides and multimedia, like:

- Lesson plan (see: <https://mlodziprzyglosie.pl/wp-content/uploads/2018/09/MPG-Scenariusz-lekcji.pdf>)
- 8 Videos, useful for trainings for debates (see: <http://www.polskadebatuje.org/video/>)

Serbia

Initiatives dedicated to debates and supporting organisations

Examples of initiatives implementing debates are as follows:

- Debate competitions and courses at the Faculty of Law, Faculty of Economics, Faculty of Organizational Sciences, Faculty of Political Sciences.
- Belgrade Debate Days
- High school tournaments (First, Third, Ninth and Fourteenth Grammar School, Saint Sava School, etc.).

Umbrella organization which organizes student competitions and provides teacher training is Open Communication - <https://www.facebook.com/ok.debate/>.

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Open Communication runs seminars for teachers and provides them with teaching materials. Very few teachers have attended this seminar, mainly those who run Debate clubs in their high schools.

STEM initiatives

STEM Initiatives in Serbia mostly rely on interested individual teachers, they have their own blogs, Facebook groups and similar channels of communication, where they share materials and experiences from the classroom with other interested educators.

The Center for the Promotion of Science, as part of the Ministry of Education, Science and Technological Development, is the Scientix National Contact Point and representative and offers support for STEM teachers. Other forms of support include textbooks and professional education seminars. Moreover, CPN promotes teaching materials available on the Scientix portal.

Lately, the British Council has started a STEM Initiative related to introducing microbits in schools.

Every year there are lots of entries for STEM Discovery Week from different schools across Serbia, as well as for International Day of Girls in STEM.

Main obstacles and barriers in implementation of debates in school practice

Greece

Potential difficulties on various levels (organisational aspects, audience engagement, awareness and motivation)

Although the use of debates in school practice is not unknown in Greece, especially in the Language Arts lessons, the implementation of debates as didactic practice is not generalized. The main obstacles are:

- their connection to the competitive dimension of debates and not the epistemic one,
- the lack of time for the training of educators and students,
- the lack of time for the teaching of the debate,
- the fragmented knowledge of educators on the debating process and argumentation.

Estonia

The main problem in Estonia seems to be the lack of teachers with the know-how and motivation to teach debate. The Estonian Debate Society (EDS) had somewhat succeeded in getting their alumni and university students to teach debate and start debate clubs in the bigger Estonian cities. Teachers have reported that students are so involved in other extracurricular activities (mostly music, dance, and

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sports) that have very little time to join debate clubs (the same barrier is faced by many STEM clubs). It is generally understood that parents prefer their kids to join music, dance, and sport clubs early on and do not value STEM clubs as they don't seem "any different" from what kids do at school. Some teachers have complained about the lack of resources to teach debate (the curriculum is too detailed already, no room or interest for debate, not enough time or support for it etc.). Based on EDS's extensive experience, one of the main problems is also the fact that teacher workshops are short-lived – after a day of debate workshops, teachers go back to their schools to try debate, but give up after a few attempts as there is no continuing support, advice, and educational materials for them.

Poland

In Poland, the main obstacles are: focus on national exams, unawareness of the teachers about the programs, lack of media coverage.

Serbia

In Serbia, the main barrier in implementation of debate is lack of training for teachers. Teachers are not educated for this type of work, everything is up to individual initiative. There is also a lack of teaching materials and lesson plans, which help get curricula closer to students using the debate method. Debate as a teaching method is not widely acknowledged.

Main recommendations for ODYSSEY implementation

Through arguments, students will have a deeper understanding of scientific theories and will develop linguistic and scientific skills, which are essential for their future careers as well-informed scientists/professionals and active, literate citizens. Focusing on the exchange of views will also significantly increase students' interest in Science and Technology and enhance teamwork and interaction by developing stronger bonds between team members.

In order to achieve these goals, ODYSSEY needs to provide qualitative support for teachers. For the successful implementation of ODYSSEY Debates in school practice, teachers are expecting support by means of:

- being informed on the positive epistemic results of debating,
- being persuaded about the necessity of debating in teaching practice,
- increasing knowledge of basic notions of argumentation and debate,
- trainings in an experiential mode to the basic rules of argumentation and debate,
- training on the format of the debating process and its rules,
- getting access to the necessary materials that direct their debating activities,

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- getting access to the necessary epistemic material that facilitates the research of evidence, arguments and the comprehension of the examined topic,
- facilitation of a continuous exchange of experiences and ideas within the context of a network of other teachers who apply debating,
- getting consistent and immediate help when they need it, by persons who monitor their activities,
- being trained as judges of debating contests,
- cultivating argumentation and dialogue and not eristics.

The ODYSSEY Consortium needs to address the needs of teachers by providing all expected support to teachers participating in the project. Special focus should be put on continuous mentoring support and trainings.

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