Co-funded by the European Union

NGSS

Quality assurance – Monitoring the impact of the AuReSSEL course

Global Evaluation Report

ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
UNIVERSITY OF CRETE

"Funded by the Erasmus+ Programme of the European Union. However, European Commission and Turkish National Agency cannot be held responsible for any use which may be made of the information contained therein".

Co-funded by the European Union

Project Information

Project acronym	NGSS
Project title	**Next Generation Science Standards through STEAM**
Authoring partner	University of Crete
Document version	1.0
	December 2023
Authors of the present report	Maria Ampartzaki
	Vasiliki Giannakou
	Konstantinos Christidis
	Stamatis Papadakis
	Michail Kalogiannakis
	Sofia Chatzoglidou
	Kalliopi Kanaki
	Maria Mazi

Table of contents

Introduction 4
Description of the questionnaire: 4
Countries 5
Question 2 – The respondents' professional Identity 5
Question 4 - Years of teaching experience 6
Question 5 – The respondents' gender 7
Question 7 – The primary reasons for completing the AuReSSEL course 9
Question 8 - Level of relevance 11
Question 9.1 - AuReSSEL usefulness to the development of teaching skills 12
Question 9.2 - Usefuleness of the supportive materials and Lesson Plans of AuReSSEL 12
Question 10 – Elaborating on the answers to Question 9 13
Question 11 – The possibility to apply approaches learnt about in teaching practice 14
Question 13 – Justification of the answers in Question 12 16
Question 14 – The easiest approach easy to apply 17
Question 15 – Justification of the answers in Question 14 20
Question 16 – The hardest approach to understand 21
Question 17 – Justification of the answers in Question 16 23
Question 20 – Can AuReSSEL become a primary source of information/learning? 31
Question 21 – Recommendation of AuReSSEL to a friend or colleague 32
Question 22 – Suggestions for improvement 32
Summarising 33
Appendix I – Polish evaluation - summarising 34
Appendix II – The evaluation questionnaire 35

Introduction

The AuReSSEL course is an online program that offers training in the methods recommended by NGSS for implementing the STEAM approach. The course utilizes five methods, namely, the Design Thinking method, the Inquiry-based approach, the Problem-based approach, the SCAMPER method, and the Montessori approach. Each method is presented in separate course modules that include supporting materials and lesson plans. The course also features introductory information on the STEAM approach and a module dedicated to assessing the outcomes of the STEAM approach. To evaluate the effectiveness of AuReSSEL, partners developed an evaluation questionnaire, which AuReSSEL users are encouraged to fill out.

Description of the questionnaire:

The questionnaire comprised of 22 questions:

- 5 multiple-choice questions
- 7 rating questions
- And 9 open-ended questions

The following subjects were covered during the evaluation:

- The respondents' occupation
- The p respondents' teaching experience
- The respondents' gender
- The level of overall satisfaction with AuReSSEL
- The level of overall relevance AuReSSEL has for the respondents' teaching practice
- The level of usefulness of AuReSSEL for the teaching skills of the respondents
- The level of usefulness of the supportive materials and methods presented by AuReSSEL
- The respondents' willingness to apply the methods of AuReSSEL in their teaching
- The AuReSSEL approaches that are hardest or easiest to apply
- The AuReSSEL approaches that are hardest to understand
- An evaluation of the AuReSSEL's attributes
- An evaluation of the skills that AuReSSEL helps to be gained or improved
- The respondents' willingness to use AuReSSEL as a primary source of information or learning
- The respondents' willingness to recommend AuReSSEL to friends and colleagues

The project partners collectively constructed and agreed on the above questions. The questionnaire was distributed online via Google Forms. The results for each question will be presented in upcoming sections, with a summary at the end.

Normality tests

Two common tests used to determine whether data is normally distributed are the Kolmogorov-Smirnov test and the Shapiro-Wilk test. The Shapiro-Wilk test is more suitable for smaller sample sizes, typically less than 50 samples, but can also be used for sample sizes up to 2000. In this case, we used the Shapiro-Wilk test to assess normality numerically. The explore test in SPSS indicated that the dependent variable was not normally distributed. The Shapiro-Wilk test confirmed this as the Sig. value was less than 0.05. Essentially, this means that the data significantly deviates from a normal distribution. Skewness and kurtosis values were also used to confirm these results. Since the data was not normally distributed, we tried to transform or normalize it using mathematical functions like log, square root, or inverse to reduce its skewness or outliers. However, due to the small size of the data, we couldn't perform any further analysis except for descriptive statistics.

Countries

Country					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Turkiye	29	39,7	39,7	39,7
	Greece	28	38,4	38,4	78,1
	Romania	6	8,2	8,2	86,3
	Lithuania	5	6,8	6,8	93,2
	Bulgaria	5	6,8	6,8	100,0
	Total	73	100,0	100,0	

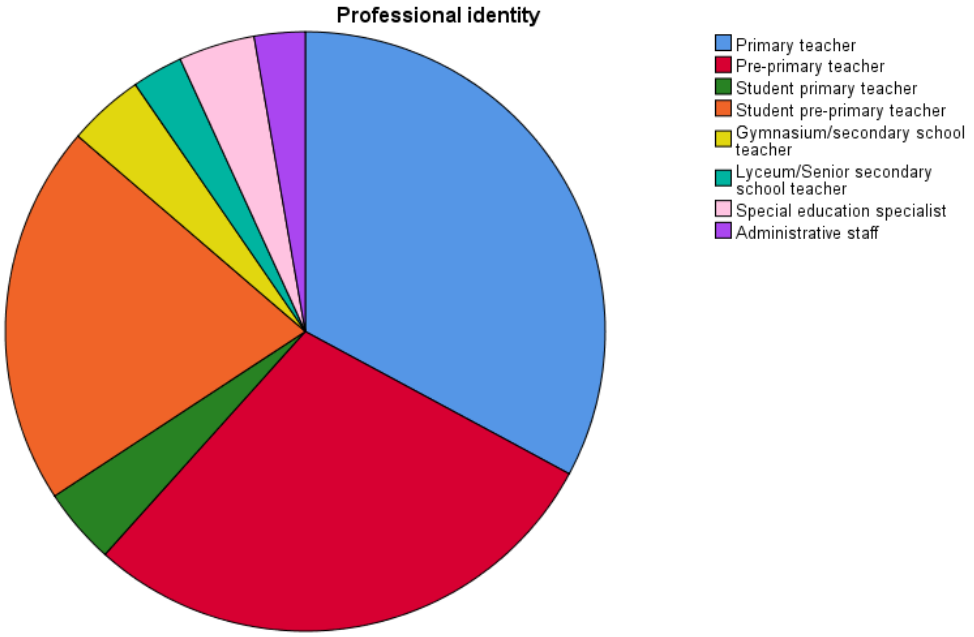
The table provided above displays the share of each partner country in the AuReSSEL evaluation. From the table, we can observe that two countries, Turkey and Greece, provided the largest sample of AuReSSEL evaluations. Turkey contributed 39.7% of the total evaluations, while Greece contributed 38.4%. Romania, on the other hand, contributed 8.2% of the total evaluations. Both Lithuania and Bulgaria contributed 6.8% of the total evaluations each.

Question 2 – The respondents' professional Identity

Question 2 gathers the occupation of the participants. The table below shows the various categories of educational and administrative staff who evaluated the AuReSSEL course.

Professional identity					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary teacher	24	32,9	32,9	32,9
	Pre-primary teacher	21	28,8	28,8	61,6
	Student primary teacher	3	4,1	4,1	65,8
	Student pre-primary teacher	15	20,5	20,5	86,3
	Gymnasium/secondary school teacher	3	4,1	4,1	90,4
	Lyceum/Senior secondary school teacher	2	2,7	2,7	93,2
	Special education specialist	3	4,1	4,1	97,3
	Administrative staff	2	2,7	2,7	100,0
	Total	73	100,0	100,0	

As seen in the table above, the participants were from different categories such as Primary teachers (32.9%), Pre-primary teachers (28.8%), Student-primary teachers (4.1%), Student-pre-primary teachers (20.5%), Gymnasium/secondary school teachers (4.1%), Lyceum/Senior secondary school teachers (2.7%), Special education specialists (4.1%), and Administrative staff (2.7%). It is noteworthy that the majority of participants, which was 32.9%, were Primary teachers.



Question 4 - Years of teaching experience

Question 4 gathers data on how many years of teaching experience the respondents have.

Years of teaching experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	15,1	15,1	15,1
	1	2	2,7	2,7	17,8
	2	1	1,4	1,4	19,2
	2	4	5,5	5,5	24,7
	3	2	2,7	2,7	27,4
	4	4	5,5	5,5	32,9
	5	3	4,1	4,1	37,0
	6	2	2,7	2,7	39,7
	7	2	2,7	2,7	42,5
	8	4	5,5	5,5	47,9
	9	1	1,4	1,4	49,3

	10	2	2,7	2,7	52,1
	11	1	1,4	1,4	53,4
	12	2	2,7	2,7	56,2
	14	1	1,4	1,4	57,5
	15	4	5,5	5,5	63,0
	16	1	1,4	1,4	64,4
	17	5	6,8	6,8	71,2
	18	1	1,4	1,4	72,6
	19	1	1,4	1,4	74,0
	20	3	4,1	4,1	78,1
	21	2	2,7	2,7	80,8
	23	1	1,4	1,4	82,2
	24	2	2,7	2,7	84,9
	25	3	4,1	4,1	89,0
	26	1	1,4	1,4	90,4
	27	1	1,4	1,4	91,8
	30	4	5,5	5,5	97,3
	33	1	1,4	1,4	98,6
	43	1	1,4	1,4	100,0
	Total	73	100,0	100,0	

According to the statistics presented in the table below, the respondents had a minimum of 0 years of teaching experience (which includes student-teachers starting their practicum) and a maximum of 43 years of experience. The average value was 12.05 years of experience.

Years of teaching experience

N	Valid	73
	Missing	0
Mean		12,05
Std. Error of Mean		1,215
Median		10,00
Std. Deviation		10,382
Minimum		0
Maximum		43

Question 5 – The respondents' gender

In Question 5, we gathered data on the gender of the participants.

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	4	5,5	5,5	5,5
	Female	69	94,5	94,5	100,0
	Total	73	100,0	100,0	

It was found that 94.5% of the participants were female and 5.5% were male. It was found that 94.5% of the participants were female and 5.5% were male.

Question 6- Satisfaction level

In Question 6, participants were asked to rate their satisfaction with the AuReSSEL course. The table below displays their overall responses.

Satisfaction level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat dissatisfied	2	2,7	2,7	2,7
	Neutral	1	1,4	1,4	4,1
	Somewhat satisfied	8	11,0	11,0	15,1
	Very satisfied	62	84,9	84,9	100,0
	Total	73	100,0	100,0	

According to the table, 84.9% of the participants were very satisfied, 11.0% were somewhat satisfied, 2.7% were somewhat dissatisfied, and 1.4% were neutral.

Participants' origin (countries) and professional identity, years of teaching experience, gender, and satisfaction level were correlated using bivariate Pearson Correlation.

Correlations						
		Country	Professional identity	Years of teaching experience	Gender	Satisfaction level
Country	Pearson Correlation	1	-,022	,082	,160	-,516**
	Sig. (2-tailed)		,856	,492	,176	,000
	N	73	73	73	73	73
Professional identity	Pearson Correlation	-,022	1	-,327**	-,100	,093
	Sig. (2-tailed)	,856		,005	,401	,435
	N	73	73	73	73	73
Years of teaching experience	Pearson Correlation	,082	-,327**	1	-,384**	-,137

	Sig. (2-tailed)	,492	,005		,001	,247
	N	73	73	73	73	73
Gender	Pearson Correlation	,160	-,100	-,384**	1	-,088
	Sig. (2-tailed)	,176	,401	,001		,461
	N	73	73	73	73	73
Satisfaction level	Pearson Correlation	-,516**	,093	-,137	-,088	1
	Sig. (2-tailed)	,000	,435	,247	,461	
	N	73	73	73	73	73
**. Correlation is significant at the 0.01 level (2-tailed).						

The study found that only the country variable had a significant impact on satisfaction levels. Turkey had the highest satisfaction level among participants, as per the mean comparison of responses by country. The study found that only the country variable had a significant impact on satisfaction levels. Turkey had the highest satisfaction level among participants, as per the mean comparison of responses by country.

Overall, the average level of satisfaction for each country was as follows:

Country	Mean	N	Std. Deviation
Turkey	4,97	29	,186
Greece	4,86	28	,448
Romania	4,83	6	,408
Lithuania	4,40	5	,548
Bulgaria	3,60	5	1,517
Total	4,78	73	,607

Turkey, Greece, and Romania had satisfaction levels close to "Very Satisfied" with ratings of 4.86, 4.83, and 4.83, respectively. Lithuania and Bulgaria had lower average values of 4.40 and 3.60, respectively, which were closer to "Somewhat Satisfied".

Question 7 – The primary reasons for completing the AuReSSEL course

Question 7 asked participants to describe the primary reasons for completing the AuReSSEL course. The following table shows the respondents' answers.

Country	**Justification**
Türkiye	Participants completed the AuReSSEL course for various reasons, including acquiring new information, discovering innovative teaching methods, and seeking professional development opportunities. They also expressed a desire to benefit from expert tutorials on STEAM, contribute to their professional development, and explore sample

	applications for STEAM in their own schools. Additionally, participants were interested in the visionary nature of the NGSS Project and the international examples provided in the course. The availability of descriptive asynchronous content and sample lesson plans was also cited as valuable. Overall, participants aimed to expand their STEM and STEAM application areas, strengthen their teaching skills, and improve their professional and personal competencies through the course.
Greece	Participants from Greece completed the AuReSSEL course for various reasons, including their interest in learning about the new program and how it can be implemented in the classroom. They also expressed a general interest in learning, knowledge development, and enriching their knowledge with new methods. Additionally, participants completed the course to broaden their subjects, learn about new methods and strategies for approaching and implementing STEM education, and to see if it is useful and accessible to students with difficulties. Some participants were interested in learning about new methods and innovative practices and wanted to get in touch with different methods of education.
Romania	Participants from Romania completed the AuReSSEL course to acquire new knowledge about STEAM education, learn about new teaching methods, and for professional development and continuous training. Additionally, some participants took the course for the development of their teaching careers and as part of their role as a member of the project team.
Bulgaria	Participants from Bulgaria completed the AuReSSEL course to familiarize themselves with new teaching methods, including STEAM education methods. Some participants aimed to upgrade their pedagogical competences in face-to-face courses and learn by sharing good practices in the communication process. Others wanted to understand how the methods could be used in the practice of primary teaching. Additionally, some participants completed the course to prepare for a mobility program in Rzeszow, Poland.
Lithuania	Participants from Lithuania completed the AuReSSEL course due to their interest in STEAM activities and their desire to improve their qualifications. They also expressed a general need for knowledge and found the topic to be interesting. Additionally, participants from Romania completed the course to acquire new knowledge about STEAM education, learn about new teaching methods, and for professional development and continuous training.

In summary, participants from various countries completed the AuReSSEL course for different reasons. Some participants completed the course to acquire new information, discover innovative teaching methods and techniques, and for professional development. Others completed the course to familiarize themselves with new teaching methods, STEAM education methods, and to upgrade their pedagogical competences. Additionally, some participants completed the course due to their interest in learning, knowledge development, and to enrich their knowledge with new methods. Participants also completed the course to learn about their profession, broaden their subjects, and to see if it is useful and accessible to students with difficulties. Some participants completed the course to learn how to apply different methods in practice and to learn about new methods and strategies for approaching and implementing STEM education.

Question 8 - Level of relevance

In question 8, respondents were asked to rate the relevance of the AuReSSEL course to their teaching.

Level of relevance					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very irrelevant	1	1,4	1,4	1,4
	Neutral	6	8,2	8,2	9,6
	Somewhat relevant	12	16,4	16,4	26,0
	Very relevant	54	74,0	74,0	100,0
	Total	73	100,0	100,0	

In the table shown above, it is evident that only 1.4% of the respondents found the AuReSSEL course to be completely irrelevant. 8.2% of the participants were neutral in their opinion about the course. About 16.4% of the participants claimed that the course was somewhat relevant to their teaching practice. However, the majority of the participants (74%) found that the course was highly relevant to their teaching practice.

Comparison of Mean of participant responses according to country

Below is the average level of satisfaction per country.

Level of relevance			
Country	Mean	N	Std. Deviation
Turkey	4,79	29	,491
Greece	4,43	28	1,034
Romania	4,83	6	,408
Lithuania	4,40	5	,548
Bulgaria	4,60	5	,548
Total	4,62	73	,757

Turkey, Romania, and Bulgaria had satisfaction levels of 4.79, 4.83, and 4.60 respectively, indicating high satisfaction. Meanwhile, Greece and Lithuania had averages of 4.43 and 4.40, respectively, indicating moderate satisfaction.

Question 9.1 - AuReSSEL usefulness to the development of teaching skills

In question 9.1, participants were asked to rate the usefulness of AuReSSEL in developing their teaching skills. The table below shows the overall responses.

AuReSSEL usefulness to the development of your teaching skills?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not very useful	1	1,4	1,4	1,4
	Neutral	2	2,7	2,7	4,1
	Somewhat useful	13	17,8	17,8	21,9
	Very useful	57	78,1	78,1	100,0
	Total	73	100,0	100,0	

The AuReSSEL course was found to be useful by 78.1% of respondents, in terms of developing their teaching skills.

Question 9.2 - Usefuleness of the supportive materials and Lesson Plans of AuReSSEL

In Question 9.2, participants were asked to rate the usefulness of supporting materials and lesson plans provided by AuReSSEL. The table below shows overall responses.

Usefuleness of the supportive materials and Lesson Plans of AuReSSEL?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat useful	14	19,2	19,2	19,2
	Very useful	59	80,8	80,8	100,0
	Total	73	100,0	100,0	

Out of all the teachers, 80.8% found the supportive materials and lesson plans of AuReSSEL very useful, while the remaining 19.2% found them somewhat useful.

Question 10 – Elaborating on the answers to Question 9

In Question 10 respondents were asked to elaborate on the answers they gave to Question 9 which refers to the usefulness of the AuReSSEL's materials and lesson plans and the usefulness of AuReSSEL for the development of teaching skills. In the following table we can see the respondents' answers per country.

Country	**Justification**
Türkiye	Participants from USKUDAR MEM found the AuReSSEL course to be very useful and helpful when applying and adopting the STEAM approach. They also found the lesson plans and examples to be practical, useful, and inspiring, and believed that they were instructive in terms of implementation in their classrooms. Participants found the modules on the platform to be very useful in improving their professional skills in the STEM and STEAM fields and to master innovative methods. They also found the activities in the plans to be adaptable to their lessons. Additionally, some participants completed the course to refresh their knowledge on the subjects they know and to gain a different perspective on the application and planning processes of Science and Mathematics courses.
Greece	Participants from Greece found the AuReSSEL course to be a very useful tool that can be easily implemented in a classroom, broadening children's horizons and bringing them into contact with scientific methods in a fun way. They also found it practical and with a wide range of activities, facilitating and developing teaching. Participants appreciated the useful information and innovative ideas for teaching practice, and found it to be something different and innovative for their profession. They also found it to be a modern system that keeps pace with the development of science. Additionally, participants gained more knowledge about managing children in the classroom and were motivated to put into practice all that they learned. They found the course to be helpful in broadening their teaching methods by approaching student-centered topics and knowledge areas in which they needed reinforcement. Finally, participants appreciated the practical examples and theory, the combination of theory with practice, and the concise but clear theoretical knowledge and examples of good practice.
Romania	Participants from Romania found models that can be put into practice through the course. They also learned how to use STEAM and gained new knowledge and skills.
Bulgaria	Participants from Bulgaria found live practice and observation in a real environment to be more useful for them. They also found the developed support materials and lesson plans to be quite sufficient.
Lithuania	Participants from Lithuania found the plans to be useful, but some were not completed. They also found it interesting to get to know not only the application of different methods but also the experience of different countries. Additionally, they gained new ideas from the course.

In summary, Participants from USKUDAR MEM, Bulgaria, Lithuania, Romania, and Greece found the AuReSSEL course to be very useful and practical, providing them with new knowledge and skills for teaching. They appreciated the innovative ideas, practical examples, and the opportunity to adapt activities to their lessons. The course was seen as a valuable tool for professional development and for implementing student-centered teaching methods.

Question 11 – The possibility to apply approaches learnt about in teaching practice

In Question 11, participants were asked if they planned to use the approaches they learned in AuReSSEL in their teaching practice. The table below shows their responses.

Are you going to apply the approaches you learnt about in your teaching practice?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	60	82,2	82,2	82,2
	No	1	1,4	1,4	83,6
	Only some	12	16,4	16,4	100,0
	Total	73	100,0	100,0	

82.2% of the respondents claimed that they are willing to apply the approaches learnt in AuReSSEL in their teaching practice. 16.4% of the respondents claimed that they are going to consider applying only a part of these methods and approaches.

Question 12 – The hardest approach to apply

In Question 12 of the survey, participants were asked to indicate whether any of the five NGSS approaches covered in the AuReSSEL course were difficult to apply in their teaching practice. They were asked to mark separately each approach, including Design Thinking, Inquiry-based, Problem-based, SCAMPER, and Montessori.

The table below shows the results for the Design Thinking approach.

Approach hard to apply: Design Thinking in STEM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	49	67,1	67,1	67,1
	missing	1	1,4	1,4	68,5
	Yes	23	31,5	31,5	100,0
	Total	73	100,0	100,0	

67.1% of participants found Design Thinking approach easy to apply while 31.5% believed otherwise.

The table below shows the participants' opinions on the Inquiry-based learning approach.

Approach hard to apply: Inquiry-based learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	58	79,5	79,5	79,5
	Yes	15	20,5	20,5	100,0
	Total	73	100,0	100,0	

79.5% of the participants reported that implementing Inquiry-based learning in their teaching practice was not difficult, while 20.5% of the respondents believed the opposite.

The table below displays the opinions of the participants regarding the Problem-Based Learning approach.

Approach hard to apply: Problem based learning					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	57	78,1	78,1	78,1
	Yes	16	21,9	21,9	100,0
	Total	73	100,0	100,0	

78.1% of respondents found Problem-based learning easy to apply to their teaching practice, while 21.9% disagreed.

The table below displays the opinions of the participants regarding the SCAMPER technique approach.

Approach hard to apply: the SCAMPER technique					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	51	69,9	69,9	69,9
	Yes	22	30,1	30,1	100,0
	Total	73	100,0	100,0	

69.9% of participants found the SCAMPER technique easy to apply in their teaching practice, while 30.1% believed it was difficult.

The following table displays the opinions of the participants about the Montessori approach.

Approach hard to apply: Montessori Approach					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	62	84,9	84,9	84,9
	Yes	11	15,1	15,1	100,0

	Total	73	100,0	100,0	

84.9% of the participants claimed that the Montessori Approach is not difficult to apply in their teaching practice, while 15.1% of the respondents believed the opposite.

The following table shows the number and percentage of participants who claimed that none of the aforementioned approaches were hard to apply in their teaching practice.

None of them was hard to apply					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	57	78,1	78,1	78,1
	Yes	16	21,9	21,9	100,0
	Total	73	100,0	100,0	

21.9% of respondents reported that none of the previously mentioned methods were difficult to implement in their teaching practice.

Question 13 – Justification of the answers in Question 12

In Question 13 the respondents were asked to justify their answers to Question 12 which referred to the AuReSSEL methods which are the hardest to apply. The following table shows a summary of the responses.

Country	Justification
Türkiye	Participants from USKUDAR MEM found the AuReSSEL course to be beneficial and easy to learn. They noted the importance of applying various teaching methods and considering the readiness of preschool children for design activities. They also highlighted the support for students' active participation in learning and the development of critical thinking skills. Some challenges were identified, such as the difficulty of implementing the Montessori approach at the primary school level and the need for further strengthening of the progression steps of problem-based learning. Additionally, they suggested the development of sections on social-emotional learning (SEL) and the inclusion of disadvantaged groups in lesson plans. Some participants encountered initial language problems with incomplete translations of methods, and they expressed the need for further development of the Design-Focused Thinking and Problem-Based sections. Overall, they found the course to be valuable, but some challenges were noted, particularly in designing activities with a lot of material and in developing creative thinking skills for certain methods.
Greece	Participants from Greece found the AuReSSEL course to be useful and interesting. They expressed the view that with the right effort, all methods could be easily implemented and adapted to the child's developmental stage. Some participants noted that certain methods, such as design thinking and problem-solving learning, might require more practice and gradual familiarization for preschoolers to respond appropriately. They also highlighted the importance of stimulating

	children's interest and adapting to the diversity of the student population. Some participants found that the procedures and steps of the methods were better suited for children with difficulties. Additionally, they noted that design thinking requires older children and that the SCAMPER method has many stages. Overall, they found the course to be feasible to implement in kindergarten and believed that it could help children a lot both now and in the future.
Romania	Participants from Romania found that the SCAMPER method could be complex and difficult to apply. They also noted that inquiry-based learning takes more time. However, after completing the course and accessing model projects, they believed that all methods could be applied according to the particularities of the class of students. Some participants expressed the view that preschoolers and young schoolchildren under 9 years old might be too young to understand certain methods, such as design thinking. Overall, they found the course to be valuable, but some challenges were identified in adapting certain methods to young ages.
Bulgaria	Participants from Bulgaria found live practice and observation in a real environment to be more useful for them. They also found the developed support materials and lesson plans to be quite sufficient.
Lithuania	Participants from Lithuania found all methods from the AuReSSEL course to be applicable and implemented them in practice. They noted that some methods were more suitable for older age groups and that the specifics of the subject matter should be taken into account. Overall, they found the course to be useful and practical.

In summary, the participants from various countries provided insights into the difficulty of applying different approaches in the AuReSSEL course. Some found the SCAMPER method to be challenging due to its complexity and the difficulty in preparing the stages of its implementation in advance. Additionally, the Montessori approach was perceived as more suitable for kindergarten and challenging to implement at the primary school level due to curriculum differences. In contrast, some participants found the SCAMPER method to be easier and more feasible to implement in kindergarten, while others believed that all methods could be applied under the right conditions. Furthermore, some participants highlighted the need for preschoolers to practice and gradually familiarize themselves with techniques such as design thinking and problem-solving learning in order to respond appropriately. Overall, the feedback provided valuable insights into the challenges and feasibility of implementing different approaches in the classroom.

Question 14 – The easiest approach easy to apply

In question 14 of the AuReSSEL course survey, participants were asked to indicate which of the five teaching approaches was the easiest to implement in their teaching practice. Respondents were allowed to choose more than one approach. The following tables display the number and percentage of respondents who selected each approach as being easy.

The following table displays the number of respondents who believe that the Design Thinking approach is one of the easiest to implement.

Approach easy to apply: Design Thinking in STEM					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	51	69,9	69,9	69,9
	Yes	22	30,1	30,1	100,0
	Total	73	100,0	100,0	

According to the table, 30.1% of respondents found Design Thinking to be one of the easiest approaches to apply in their teaching.

The table below displays the percentage of respondents who believe that the inquiry-based approach is easy to apply.

Approach easy to apply: Inquiry based learning					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	27	37,0	37,0	37,0
	Yes	46	63,0	63,0	100,0
	Total	73	100,0	100,0	

According to the table, 37.0% of respondents found Inquiry-based Learning to be the easiest approach to implement in their teaching practice.

The following table shows how many respondents think that the Problem-based approach is among the easiest to apply.

Approach easy to apply: Problem based learning					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	33	45,2	45,2	45,2
	Yes	40	54,8	54,8	100,0
	Total	73	100,0	100,0	

As shown in the table above, 54.8% of respondents found Problem-Based Learning to be a relatively easy teaching approach to implement..

The table below illustrates the percentage of respondents who consider the SCAMPER approach to be the easiest.

Approach easy to apply: the SCAMPER technique

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	54	74,0	74,0	74,0
	Yes	19	26,0	26,0	100,0
	Total	73	100,0	100,0	

As the table above shows, 26,0 % of the respondents thought that the SCAMPER technique is among the easiest approaches to apply in their teaching practice.

The table below displays the percentage of respondents who believe that the Montessori approach is easy to implement.

Approach easy to apply: Montessori Approach					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	57	78,1	78,1	78,1
	Yes	16	21,9	21,9	100,0
	Total	73	100,0	100,0	

According to the table, 21.9% of respondents found the Montessori Approach easy to apply in their teaching practice.

The table below displays the number of respondents who found none of the aforementioned methods the easiest to apply.

None of them was easy to apply					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	69	94,5	94,5	94,5
	Yes	4	5,5	5,5	100,0
	Total	73	100,0	100,0	

A total of 5.5% of the respondents stated that none of the approaches covered in the AuReSSEL course were the easiest to apply in their teaching practice.

Question 15 – Justification of the answers in Question 14

In Question 15 the respondents were asked to justify their answers to Question 14 which referred to the AuReSSEL methods which are the easiest to apply. The following table shows a summary of the responses.

Country	**Justification**

Türkiye	Participants from USKUDAR MEM expressed positive experiences with the SCAMPER method, finding it enjoyable and effective for creating creative and enjoyable activities in the classroom. They also emphasized the need for developing sections on Social-Emotional Learning (SEL) and the inclusion of disadvantaged groups in lesson plans, particularly highlighting the importance of effective short SEL and Psychomotricity activities. Additionally, they found the stages and examples of the Inquiry-Based Learning method to be easy and enjoyable to apply at all levels. The participants preferred implementing approaches that require fewer materials and documents, and they found the applications easy due to the limitless world of imagination and boldness in speaking and acting. Overall, they indicated that most of the approaches are suitable for the age group they work with, and they often use these approaches in their lesson plans.
Greece	Participants from Greece provided diverse feedback on the different approaches in the AuReSSEL course. They found that the approaches were interesting and could be applied with the same ease, although some might require more time, effort, and organization in their execution. They also highlighted that the approaches were built on what interests the child and enabled students to build knowledge on their own without losing their interest. Additionally, they found that the steps involved in the implementation of the approaches were clear and flexible.
Romania	Participants from Romania provided insights into the benefits and ease of applying different approaches in the AuReSSEL course. They found that the amount of information provided was quite large, and the means that helped them investigate were much more diverse. They also highlighted that children like to come up with ideas for solving problems and are generally very inventive. The approaches were perceived as motivating students and optimizing their potential by stimulating curiosity. Additionally, they found that the approaches were suitable for kindergarten and could be easily applied through play. They also emphasized that the approaches were very easy to adapt for age and any type of content or lesson. Overall, the feedback provided valuable insights into the benefits and ease of applying different approaches in the classroom.
Bulgaria	Participants from Bulgaria provided insights into the ease of applying different approaches in the AuReSSEL course. They found that the inquiry-based learning and problem-based learning approaches had a practical orientation and were easy to apply because they had applied them in their practice. Additionally, the Three-Step Montessori Lesson was perceived as the easiest because they applied it daily in their Montessori kindergarten. However, they emphasized that all methods require a serious attitude towards preparation, implementation, and reporting of results. They also found it challenging to distinguish between inquiry-based learning and problem-based learning methods when developing a given topic or idea. Overall, the feedback provided

	valuable insights into the practicality and ease of applying different approaches in the classroom.
Lithuania	Participants from Lithuania expressed that they had already applied the methods and found all of them easy to apply when they were ready. They also mentioned that they already apply these methods in their work and appreciated the clear steps involved in the application of the methods.

In summary, participants from different countries provided feedback on the easiest approaches to apply in the AuReSSEL course. SCAMPER was mentioned as an easy and enjoyable method to apply, especially for creating creative and enjoyable activities in the classroom. Inquiry-based learning and problem-based learning were also mentioned as easy to apply, with clear steps and examples. The Three-Step Montessori Lesson was considered easy to apply by a participant who works in a Montessori kindergarten. Some participants found that all methods could be applied with the same ease, while others preferred approaches that required less materials and documents. Additionally, some participants found that the approaches were built on what interests the child and enabled students to build knowledge on their own without losing their interest. Overall, the feedback provided valuable insights into the benefits and ease of applying different approaches in the classroom.

Question 16 – The hardest approach to understand

Participants were asked to identify the most difficult AuReSSEL approach to comprehend in Question 16. The answers for each approach are presented in separate tables below. The table below indicates the number of respondents who believe that the Design Thinking approach is one of the most challenging to understand.

Approach hardest to understand: Design Thinking in STEM					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	60	82,2	82,2	82,2
	Yes	13	17,8	17,8	100,0
	Total	73	100,0	100,0	

According to the table, only 17.8% of respondents found the Design Thinking in STEM approach difficult to understand.

The table below displays the percentage of respondents who find the Inquiry-based learning approach challenging to comprehend.

Approach hardest to understand: Inquiry based learning					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	61	83,6	83,6	83,6
	Yes	12	16,4	16,4	100,0

	Total	73	100,0	100,0	

As shown in the table above, only 16.4% of respondents found Inquiry-based learning difficult to comprehend.

The table below displays the percentage of respondents who find the Problem-based learning approach difficult to understand.

Approach hardest to understand: Problem based learning					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	67	91,8	91,8	91,8
	Yes	6	8,2	8,2	100,0
	Total	73	100,0	100,0	

As shown in the table above, only 8.2% of respondents found Problem-based learning difficult to understand.

The following table shows how many respondents think that the SCAMPER approach is among the hardest to understand.

Approach hardest to understand: the SCAMPER technique					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	53	72,6	72,6	72,6
	Yes	20	27,4	27,4	100,0
	Total	73	100,0	100,0	

According to the table, only 27.4% of the respondents found the SCAMPER technique difficult to understand.

The following table shows how many respondents think that the Montessori approach is among the hardest to understand.

Approach hardest to understand: Montessori Approach					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	64	87,7	87,7	87,7
	Yes	9	12,3	12,3	100,0
	Total	73	100,0	100,0	
Total	73	100,0	100,0		

As shown in the table above, only 12.3% of the respondents found it difficult to understand the Montessori Approach.

The following table shows how many respondents think that none of the approaches is the hardest to understand.

None of them was hard to understand					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2,7	2,7	2,7
	No	41	56,2	56,2	58,9
	Yes	30	41,1	41,1	100,0
	Total	73	100,0	100,0	

According to the table provided above, 41.1% of the respondents claimed that they did not find any of the mentioned approaches hard to understand. This percentage is significantly higher in comparison to the answers provided in the previous approaches. If we add up the total number of respondents who replied "yes" to the approaches mentioned before, then we have a total of 83% of respondents who claimed that at least one of the approaches was hard to understand. This suggests that Question 16 might have been confusing for the respondents.

Question 17 – Justification of the answers in Question 16

In Question 17 the respondents were asked to justify their answers to Question 16 which referred to the AuReSSEL methods which are the hardest to understand. The following table shows a summary of the responses.

Country	Justification
Türkiye	-
Greece	-
Romania	Participants from Romania found that the methods in the AuReSSEL course were presented in a simple and easy-to-understand manner. They also mentioned that all methods are easy to understand and can be applied in the primary cycle if the teacher is competent and adapts the approach to the specifics of the class. However, some participants found that the methods are too complex for kindergarten and certain passages are difficult to understand for children under 7 years old.
Bulgaria	In Bulgaria, some participants mentioned that SCAMPER was the most difficult for them because they hadn't heard about it and it was implemented with younger students than theirs. Additionally, some participants found it difficult to apply to 5-6 year old children. However, others noted that the methods were well explained in the platform and supporting materials, as well as well presented during the mobilities they had participated in.
Lithuania	Participants from Lithuania mentioned that the concept of the methods in the AuReSSEL course is very similar and their differences are not distinct. They also found that the methods are more suitable for primary

	school-aged children. Additionally, there were references to a general understanding and detailed description of the methods.

In summary, participants from Lithuania found the methods to be conceptually similar and more suitable for primary school age. Participants from Romania found the methods easy to understand but complex for kindergarten and difficult for children under 7 years old. Participants from Bulgaria found SCAMPER to be the most difficult method, but appreciated the explanations provided in the platform and supporting materials.

Question 18 – Rating the attributes of AuReSSEL

In question 18, users of AuReSSEL were asked to rate several attributes of the platform, including ease of navigation, accuracy of information, quality and quantity of content, layout or design, ease of registration, ease of tracking progress, ease of following tasks, and the degree to which AuReSSEL meets their needs.

The tables below display the total responses for each attribute. Here is a table that shows the level of satisfaction of participants regarding AuReSSEL's ease of navigation.

Ease of navigation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	5	6,8	6,8	6,8
	Average	13	17,8	17,8	24,7
	Above average	28	38,4	38,4	63,0
	Well above average	27	37,0	37,0	100,0
	Total	73	100,0	100,0	

According to the survey, 6.8% of the respondents reported that the ease of navigation in AuReSSEL is below average, while 17.8% found it to be average. 38.4% of the respondents claimed that the ease of navigation is above average, and 37% reported it to be well above average.

The following table shows the level of participant's satisfaction regarding the AuReSSEL's accuracy of information.

Accuracy of information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	5	6,8	6,8	6,8
	Average	4	5,5	5,5	12,3
	Above average	23	31,5	31,5	43,8
	Well above average	41	56,2	56,2	100,0
	Total	73	100,0	100,0	

According to the survey, 6.8% of the respondents rated the ease of navigation in AuReSSEL as below average, while 17.8% rated it as average. On the other hand, 38.4% rated the ease of navigation as above average, and 37% rated it as well above average.

The following table shows the level of participant's satisfaction regarding the AuReSSEL's quality of content.

Quality of content					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	4	5,5	5,5	5,5
	Average	8	11,0	11,0	16,4
	Above average	23	31,5	31,5	47,9
	Well above average	3	52,1	52,1	100,0
	Total	73	100,0	100,0	

According to the survey, 5.5% of the respondents reported that the quality of content provided by AuReSSEL is well below average, while 11.0% considered it to be average. On the other hand, 31.5% of the respondents found the content quality to be above average, and 52.1% of the respondents stated that it is well above average.

The following table shows the level of participant's satisfaction regarding the AuReSSEL's quantity of content.

Quantity of content					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	4	5,5	5,5	5,5
	Average	14	19,2	19,2	24,7
	Above average	18	24,7	24,7	49,3
	Well above average	37	50,7	50,7	100,0
	Total	73	100,0	100,0	

According to the survey, 5.5% of the participants stated that the quantity of content in AuReSSEL is below average, while 19.2% found it to be average. In contrast, 24.7% of the respondents claimed that the quantity of content in navigation is above average, and a majority of 50.7% claimed that it is well above average.

The following table shows the level of participant's satisfaction regarding the layout/design of AuReSSEL.

Layout/design				
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Well below average	4	5,5	5,5	5,5
	Below average	1	1,4	1,4	6,8
	Average	8	11,0	11,0	17,8
	Above average	26	35,6	35,6	53,4
	Well above average	34	46,6	46,6	100,0
	Total	73	100,0	100,0	

According to the survey results, 5.5% of the respondents think that the layout and design of AuReSSEL is well below average, while 1.4% think it is below average. 11.0% of the respondents think that it is average. On the other hand, 35.6% of the respondents think that the layout and design is above average, and 46.6% think that it is well above average.

The following table shows the level of participant's the degree by which the AuReSSEL's ease is meeting the respondents' needs.

Meeting your needs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	4	5,5	5,5	5,5
	Below average	1	1,4	1,4	6,8
	Average	6	8,2	8,2	15,1
	Above average	23	31,5	31,5	46,6
	Well above average	39	53,4	53,4	100,0
	Total	73	100,0	100,0	

According to the survey, 5.5% of the respondents believe that the meeting in AuReSSEL fails to meet their needs, 1.4% believe it falls below average, and 8.2% consider it to be an average meeting. On the other hand, 31.5% of the respondents believe that the meeting is above average, while 53.4% believe that it is well above average.

The following table shows the level of participant's satisfaction regarding the AuReSSEL's ease of registration.

Ease of registration					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	4	5,5	5,5	5,5
	Average	14	19,2	19,2	24,7
	Above average	17	23,3	23,3	47,9
	Well above average	38	52,1	52,1	100,0

	Total	73	100,0	100,0	

According to the survey, 5.5% of the respondents reported that the registration process for AuReSSEL is well below average, while 19.2% found it to be average. On the other hand, 23.3% of the respondents found the navigation registration process to be above average, while 52.1% found it to be well above average.

The following table shows the level of participant's satisfaction regarding the AuReSSEL's ease of tracking one's progress.

Ease of tracking your progress					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	4	5,5	5,5	5,5
	Average	10	13,7	13,7	19,2
	Above average	20	27,4	27,4	46,6
	Well above average	39	53,4	53,4	100,0
	Total	73	100,0	100,0	

According to the survey, 5.5% of the respondents found AuReSSEL's progress tracking system to be well below average in terms of ease of use. 13.7% found it to be average, 27.4% found it to be above average, and 53.4% found it to be well above average.

The following table shows the level of participant's satisfaction regarding the AuReSSEL's ease of following each task.

Ease of following each task					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well below average	5	6,8	6,8	6,8
	Below average	1	1,4	1,4	8,2
	Average	10	13,7	13,7	21,9
	Above average	19	26,0	26,0	47,9
	Well above average	38	52,1	52,1	100,0
	Total	73	100,0	100,0	

6.8% of the survey participants reported that they find the ease of following each task in AuReSSEL well below average, while 1.4% find it below average. On the other hand, 13.7% of the respondents claimed that it is an average. A majority of the participants, 78.1%, find the ease of following each task above average, with 26.0% rating it as above average and 52.1% rating it as well above average.

The following table presents a report on the average values for each attribute per country. Most countries have average values ranging between 4 and 5, which indicates that they are performing "well above average" to "above average". However, Greece has the lowest value of 3.89 for ease of navigation, Lithuania has the lowest values of 3.40 for ease of navigation and 3.80 for ease of following each task, and Bulgaria has the lowest value of 3.99 for ease of navigation.

Mean values for each AuReSSEL attribute					
Country		Ease of navigation	Accuracy of information	Quality of content	Quantity of content
Türkiye	Mean	4,14	4,52	4,14	4,14
	N	29	29	29	29
	Std. Deviation	,990	,871	,915	,990
Greece	Mean	3,89	4,14	4,25	4,18
	N	28	28	28	28
	Std. Deviation	1,227	1,208	1,295	1,278
Romania	Mean	4,17	4,50	4,67	4,17
	N	6	6	6	6
	Std. Deviation	,753	,837	,516	,983
Lithuania	Mean	4,00	4,40	4,20	4,40
	N	5	5	5	5
	Std. Deviation	,000	,894	,837	,894
Bulgaria	Mean	3,40	3,60	4,40	3,80
	N	5	5	5	5
	Std. Deviation	1,673	1,673	,894	1,095
Total	Mean	3,99	4,30	4,25	4,15
	N	73	73	73	73
	Std. Deviation	1,086	1,076	1,038	1,089

Mean values for each AuReSSEL attribute					
Country		Layout/design	Meeting your needs	Ease of registration	Ease of tracking your progress
Türkiye	Mean	4,31	4,21	4,28	4,03
	N	29	29	29	29
	Std. Deviation	,930	,978	,960	,981
Greece	Mean	4,04	4,21	3,93	4,25
	N	28	28	28	28
	Std. Deviation	1,261	1,287	1,331	1,295
Romania	Mean	4,17	4,33	4,33	4,83
	N	6	6	6	6
	Std. Deviation	1,169	,816	1,033	,408
Lithuania	Mean	4,20	4,60	4,40	4,40

	N	5	5	5	5
	Std. Deviation	,447	,548	,548	,548
Bulgaria	Mean	4,00	4,40	4,40	4,40
	N	5	5	5	5
	Std. Deviation	1,000	,894	,894	,894
Total	Mean	4,16	4,26	4,16	4,23
	N	73	73	73	73
	Std. Deviation	1,054	1,054	1,093	1,061

Mean values for each AuReSSEL attribute

Country		Ease of following each task
Türkiye	Mean	4,00
	N	29
	Std. Deviation	1,134
Greece	Mean	4,18
	N	28
	Std. Deviation	1,335
Romania	Mean	4,67
	N	6
	Std. Deviation	,516
Lithuania	Mean	4,60
	N	5
	Std. Deviation	,548
Bulgaria	Mean	3,80
	N	5
	Std. Deviation	1,095
Total	Mean	4,15
	N	73
	Std. Deviation	1,151

Question 19 – Skills gained or improved through AuReSSEL

Question 19 asked participants to name the skills they gained or improved through AuReSSEL. The following table shows a summary of the responses.

Country	Skills gained

Türkiye	Participants from USKUDAR MEM reported that the AuReSSEL course improved their instructional design and planning skills, as well as their knowledge and skills in different innovative methods and techniques. They also mentioned learning how to apply methods like SCAMPER and how to ask effective questions. Some participants realized the importance of considering social emotional skills and disadvantaged groups in their lesson planning and expressed a better understanding of how to plan their lessons and time effectively. Overall, participants rated their improvement as above average.
Greece	Participants from Greece reported various benefits from the AuReSSEL course, including the development of cognitive skills, empathy, and fine motor skills. They also mentioned learning how to create activities that incorporate scientific elements in a fun way and improve the quality of teaching. Additionally, they highlighted the development of organizational skills, scientific thinking, creativity, flexibility, and knowledge enrichment through theory and practice. Participants also reported gaining new material, learning new methods, and improving their lesson planning to be more student-centered. They emphasized the importance of listening to children during the educational process and encouraging their participation in STEM, especially girls. Furthermore, they mentioned the development of cognitive and digital skills, as well as navigating a digital platform.
Romania	Participants from Romania reported various benefits from the AuReSSEL course, including the development of critical thinking, the ability to design and deliver lessons, and improved teaching effectiveness. They also mentioned the integration of active learning techniques, use of technology in teaching, interdisciplinary approach, and the development of critical thinking, problem-solving, and creativity in students. Additionally, they highlighted the development of effective communication, adaptability, and resilience, as well as the acquisition of valuable tools to improve the quality of teaching and create a more engaging educational experience for students. Furthermore, they expressed gaining knowledge and skills specific to STEAM education, better organization, observational abilities, and the capability to apply STEAM-related skills.
Bulgaria	Participants from Bulgaria highlighted the development of critical thinking and collaboration skills through the AuReSSEL course. They also mentioned gaining theoretical knowledge and learning how to formulate essential questions that can be answered by applying the appropriate methods. Additionally, they emphasized the importance of teamwork and their orientation in the five methods covered in the course.
Lithuania	Participants from Lithuania reported familiarizing themselves with the SCAMPER method, recalling the methods, learning a new method, reviewing and evaluating their knowledge, and deepening their understanding through the AuReSSEL course.

In summary, participants from various countries reported gaining or improving a wide range of skills through the AuReSSEL course. These skills include the ability to apply innovative methods such as

SCAMPER, improved instructional design and planning, critical thinking, collaboration, active learning techniques, use of technology in teaching, interdisciplinary approach, development of creativity in students, effective communication, adaptability, resilience, and the ability to work with STEAM. Additionally, participants mentioned the development of cognitive skills, empathy, fine motor skills, organizational skills, scientific thinking, creativity, flexibility, knowledge enrichment, self-awareness, self-improvement, and the ability to listen to children during the educational process. Furthermore, they highlighted the improvement of lesson planning to be more student-centered and the encouragement of children's participation in STEM, especially girls. Lastly, participants mentioned the development of cognitive and digital skills, as well as navigating a digital platform.

Question 20 – Can AuReSSEL become a primary source of information/learning?

In Question 20, respondents were asked if they would consider using AuReSSEL as their primary source of information and learning. The table below shows the overall responses.

Use AuReSSEL as your primary source of information/learning?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unlikely	2	2,7	2,7	2,7
	Somewhat unlikely	2	2,7	2,7	5,5
	Neutral	5	6,8	6,8	12,3
	Somewhat likely	12	16,4	16,4	28,8
	Very likely	52	71,2	71,2	100,0
	Total	73	100,0	100,0	

The majority of the respondents (71.2%) claimed that AuReSSEL could “very likely” be their primary source of information and learning.

Question 21 – Recommendation of AuReSSEL to a friend or colleague

Question 21 asked respondents if they would recommend the AuReSSEL course to their friends or colleagues in the future. The table below shows their responses.

Recommend AuReSSEL to a friend or colleague in the future?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unlikely	2	2,7	2,7	2,7
	Somewhat unlikely	2	2,7	2,7	5,5

	Neutral	2	2,7	2,7	8,2
	Somewhat likely	9	12,3	12,3	20,5
	Very likely	58	79,5	79,5	100,0
	Total	73	100,0	100,0	

The vast majority of respondents (79.5%) said they would recommend AuReSSEL as a source of information and learning to their friends and colleagues.

Question 22 – Suggestions for improvement

Question 22 asked respondents to offer suggestions for the improvement of the AuReSSEL course. The table below shows their responses.

Country	**Skills gained**
Türkiye	-
Greece	Participants from Greece claimed they needed more interaction with other colleagues concerning the program. They did, however, express interest in more examples of practical applications in AuReSSEL.
Romania	Participants from Romania suggested organizing seminars for collaboration between teachers to share ideas and best practices, improve teaching approaches, and create more engaging interdisciplinary projects. They also recommended holding events or exhibitions where teachers can share their experiences and the results of STEAM course activities to inspire other teachers and create a stronger learning community. Additionally, they highlighted the need for improving the design and presentation of information and facilitating the registration process.
Bulgaria	Participants from Bulgaria expressed that communicating with colleagues and observing lessons was more useful to them than the platform itself.
Lithuania	Participants from Lithuania reported that not all lesson plans and materials were ready to use, some answers to self-assessment questions were questionable, and not all links worked. They suggested that inaccuracies in theory and test questions should be corrected and that correct notes should be provided in national languages.

In total, participants from Bulgaria emphasized that communicating with colleagues and observing lessons was more useful than the platform. Participants from Lithuania highlighted issues with the readiness of lesson plans and materials, questionable self-assessment answers, non-functional links, and the need for corrections in theory and test questions, as well as the provision of correct notes in national languages. Romanian participants suggested collaboration between teachers through seminars and events/exhibitions to share experiences and results, improve teaching approaches, and create a stronger learning community. Greek participants expressed a desire for interaction with colleagues concerning the program and for more examples of practical applications in AuReSSEL.

Summarising

This report provides a comprehensive analysis of the impact of the AuReSSEL course based on feedback from participants in various countries. The report highlights the responses of participants from Turkey, Greece, and Romania regarding the ease of applying different methods in the AuReSSEL course.

Participants from Turkey expressed positive experiences with the SCAMPER method, emphasizing its effectiveness in creating creative and enjoyable activities in the classroom. They also highlighted the need for developing sections on Social-Emotional Learning (SEL) and the inclusion of disadvantaged groups in lesson plans. Additionally, they found the stages and examples of the Inquiry-Based Learning method easy and enjoyable to apply at all levels. Participants from Greece provided diverse feedback on the different approaches, finding them interesting and applicable with varying levels of ease. Similarly, participants from Romania found the methods in the AuReSSEL course to be presented in a simple and easy-to-understand manner.

The report also indicates that 80.8% of teachers found the supportive materials and lesson plans of AuReSSEL very useful, while the remaining 19.2% found them somewhat useful. Additionally, participants from various countries provided insights into the difficulty of applying different approaches in the AuReSSEL course. Some found the SCAMPER method to be challenging due to its complexity and the difficulty in preparing the stages of its implementation in advance.

Overall, the report offers valuable insights into the ease of applying different methods in the AuReSSEL course, as well as the usefulness of its materials and lesson plans, based on the feedback from participants in multiple countries. The detailed feedback from participants provides a nuanced understanding of the practical implications and challenges associated with implementing the AuReSSEL course in educational settings.

Appendix I – Polish evaluation - summarising

The evaluation conducted as part of the AuReSSEL course provided valuable information on the experiences of the Polish participants about the platform. Of the five respondents, four were primary school teachers and one was a kindergarten teacher. Most participants expressed a high level of satisfaction with the platform, with four being very satisfied and one being satisfied. The main reasons why participants took the AuReSSEL course were their desire for further education and their interest in learning. Respondents found the platform quite useful in developing their pedagogical skills and found the support materials and lesson plans quite or very useful.

All course participants expressed their intention to apply the methods they had learned in their teaching practice. The most difficult methods to apply were 'Design thinking in STEM' and 'SCAMPER technique', while the easiest were 'Inquiry-based learning', 'Problem-based learning' and 'Montessori'. "Design thinking in STEM" and "SCAMPER" were also found to be the most difficult to understand.

When evaluating the various features of the AuReSSEL platform, participants mostly identified that navigation, accuracy of information, quality of content, quantity of content, layout/layout, meeting needs, ease of registration, progress tracking and task completion were above average or even well above average.

Respondents reported that through the AuReSSEL course they had gained or developed workshop skills, better teaching methods and better lesson structure planning.

Finally, all participants expressed that they would like to use the AuReSSEL platform as their main source of information/teaching in the future and would recommend it to their friends or colleagues.

In conclusion, the results gathered from the Poland of this study indicate a positive experience of the participants with the AuReSSEL platform and the potential of this platform to support the development of pedagogical skills.

Appendix II – The evaluation questionnaire

The following pages present the questionnaire used to evaluate the AuReSSEL course.

AuReSSEL evaluation

Dear course participants,

Please, give your feedback regarding AuReSSEL. Your opinion about the course is important to us since it will help us improve AuReSSEL and the NGSS project in total. Your answers will be handled anonymously.

* This shows a mandatory question

1. ……..

2. Your professional identity *

Single answer required.

- ◯ Primary teacher
- ◯ Pre-primary teacher
- ◯ Student primary teacher
- ◯ Student pre-primary teacher
- ◯ Άλλο:

3. If the answer to the above is "other", please specify:

4. How many years of teaching experience have you got? *

5. Gender *

Single answer required.

- Male
- Female

6. Mark the level of your satisfaction *

Single answer required.

	Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied
How satisfied are you with AuReSSEL?					

7. What was your primary reason for completing the AuReSSEL course? *

8. Mark the level of relevance *

Single answer required.

	Very relevant	Somewhat relevant	Neutral	Somewhat irrelevant	Very irrelevant
How relevant was AuReSSEL to your teaching?					

9. Mark the level of usefulness *

Single answer required.

	Very useful	Somewhat useful	Neutral	Not very useful	Not useful at all
How useful was AuReSSEL to the development of your teaching skills?	◯	◯	◯	◯	◯
How useful were the supportive materials and Lesson Plans of AuReSSEL?	◯	◯	◯	◯	◯

10. Please elaborate the above answers (explain why).

11. Are you going to apply the approaches you learnt about in your teaching practice? *

Single answer required.

◯ Yes

◯

◯

No

Only some

12. You may choose more than one approaches.

Mark all that applies.

	Design Thinking	Inquiry-based learning	Problem-based learning	SCAMPER method	Montessori Approach	None of
Which them approaches are the hardest to apply?						

13. Please explain why? *

14. You may choose more than one approaches.

Mark all that applies.

	Design Thinking	Inquiry-based learning	Problem-based learning	SCAMPER method	Montessori Approach	None of them
Which approaches are the easiest to apply?						

15. Please explain why? *

16. You may choose more than one approaches

Mark all that applies.

	Design Thinking	Inquiry-based learning	Problem-based learning	SCAMPER method	Montessori Approach	None of
Which them approaches are the hardest to understand?						

17. Please explain why? *

18. Please rate the following attributes of AuReSSEL: *
Single answer required.

Να επισημαίνεται μόνο μία έλλειψη ανά σειρά.

	Well below average	Below average	Average	Above average	Well above average
Ease of navigation	◯	◯	◯	◯	◯
Accuracy of information	◯	◯	◯	◯	◯
Quality of content	◯	◯	◯	◯	◯
Quantity of content	◯	◯	◯	◯	◯
Layout/design	◯	◯	◯	◯	◯
Meeting your needs	◯	◯	◯	◯	◯
Ease of registration	◯	◯	◯	◯	◯
Ease of tracking your progress	◯	◯	◯	◯	◯
Ease of following each task	◯	◯	◯	◯	◯

19. What are the skills you gained or improved through AuReSSEL? *

20. How likely are you to use AuReSSEL as your primary source of information/learning? *

Single answer required.

- Very likely
- Somewhat likely
- Neutral
- Somewhat unlikely
- Very unlikely

21. How likely are you to recommend AuReSSEL to a friend or colleague in the future? *

Single answer required.

- Very likely
- Somewhat likely
- Neutral
- Somewhat unlikely
- Very unlikely

22. Do you have any suggestions for improvement?

The content of this form has neither been created nor approved by Google.

Google Forms

This document is prepared in the frames of the international project "Next Generation Science Standards Through STEAM" (NGSS), implemented with the financial support of the European Commission under Erasmus+ Program, through the Turkish National Agency Erasmus+ (ref. No 2020-1-TR01-KA201-094463). The content of the document reflects the views only of its authors, and the Commission cannot be held responsible for any use, which may be made of the information contained therein.