

Erasmus+ KA2-Project small scale project

2022-1-DE02-KA210-VET-000083354



"All in bowl of digitalization of education."

REPORT

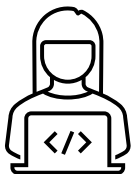
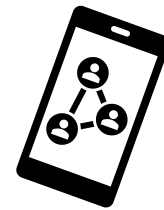
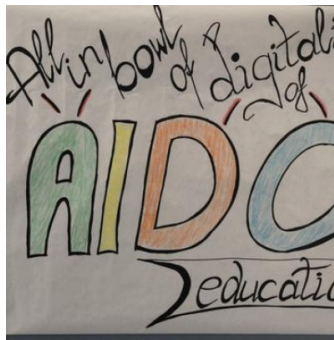
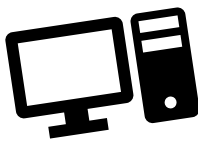


Photo by AIDO Team 13.03.24



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1 Introduction

“All in bowl of digitalization of education” is an Erasmus small-scale partnership project. The main goal of the project is to expand the digital skills of the partners for planning of educational offerings in the field of elementary education and educator training and to contribute to the digitalization of vocational education. Second goal is the creation of a learning platform for digital learning spaces dedicated to elementary education and professional training of educators, under didactic considerations. Eight partners from Germany, Lithuania, Estonia, Romania, Sweden, and Finland were involved in this project. The partners come from the fields of vocational, elementary, and primary education.

The project had meetings online and in person. Firstly, there was a need to clarify which tools and apps were already used in the organizations. After that, the assessment form was created and it was decided to collect the information using Microsoft Forms. Between meetings, partners tested tools and apps that were new or already used in their organizations. In the project, there was a discussion about what kind of digital skills the participants as teachers have. All the participants took the Selfie for Teachers -online tests at the beginning of the project and at the end. The results are in the report section five (5).

List of tested and evaluated digital tools

Book Creator, Canva, Forms, Frepy, Kahoot!, Learningapps, Magic School, Mentimeter, National Geographic kids, One Note, Padlet, PowerPoint, Prezi, Starfall and Wordwall.



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2 Learning apps in kindergarten

2.1 Data Interpretation of Digital Tool Starfall

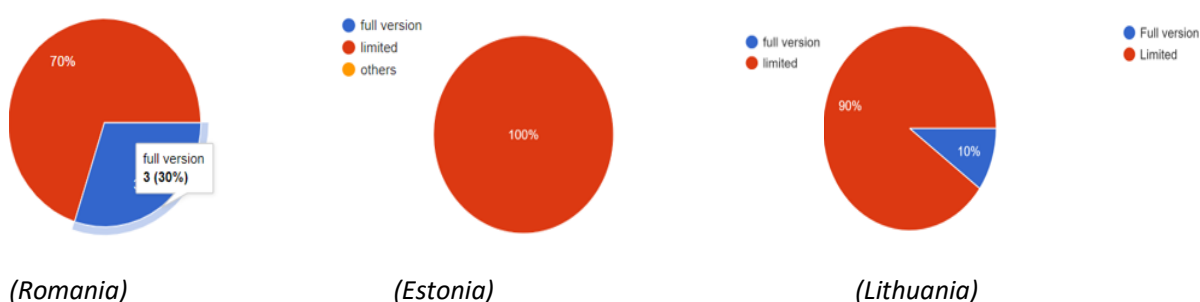
Vendor Description – Starfall Education Foundation strives to create a safe and playful environment for all children. We adhere to a strict policy of respecting and protecting the privacy of our users. This privacy policy applies to Starfall branded websites, mobile applications, and software whether accessed via computer, mobile device, or otherwise.

Here at the Starfall Parent-Teacher Center is where you can print worksheets and use other tools for the classroom or at home. While Starfall.com is for kids, the Parent-Teacher Center is a companion site that provides resources to help you teach in ways that differ from interactive activities and games.

Starfall Education Foundation is a publicly supported nonprofit organization. We create free and low-cost experiences whereby children can successfully learn through exploration. On the Starfall website and in Starfall classrooms, children have fun while learning in an environment of collaboration, wonderment, and play. We teach through positive reinforcement to ensure children become confident, intrinsically motivated, and successful.

Questionnaire Survey - The primary objective of the survey was to assess the utilization of the digital tool Starfall in educational activities among kindergarten teachers in three European countries – project partners from Romania, Lithuania and Estonia. Additionally, we aimed to gather feedback on teachers' opinions regarding various aspects of the tool, including its accessibility, navigability, quality of content, required user level, cost-benefit ratio, and overall usefulness. The respondents included teachers from LA Mudila Kindergarten (Estonia), Saulės Gojus Kindergarten (Lithuania), and Gradinita nr.50 Kindergarten (Romania).

Evaluated Version – The first point aimed to highlight the usage of Starfall application in the full version or in the limited (free) version. It was found that 30% of Romanian respondents mentioned that they use full version, 70% are using the limited version. In Estonia 100% respondents mentioned that they use limited version. For Lithuania, 10% from teachers are using a full version and 90% using limited version.



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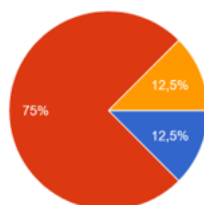


Navigability – The navigability of the digital tool Starfall was indicated as easy by 40% of the responding teaching staff from Romania, 80% from Lithuania and 75% from Estonia. Additionally, 60% of the respondents from Romania, 20% from Lithuania and 12.5% from Estonia noted that navigability is very easy. Also, Estonian teachers considered that this tool navigability is neither easy nor difficult at 12.5%.



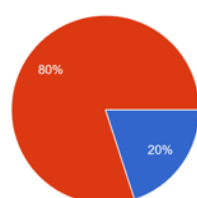
(Romania)

● very easy
● easy
● neither easy, nor difficult
● difficult
● very difficult



(Estonia)

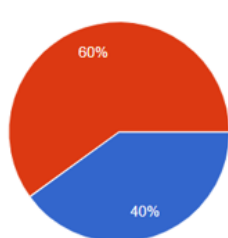
● very easy
● easy
● neither easy nor difficult
● difficult
● very difficult



(Lithuania)

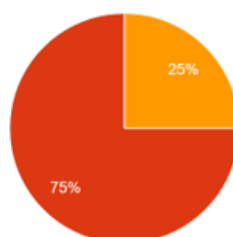
● Very easy
● Easy
● Neither easy nor difficult
● Difficult
● Very Difficult

Quality of Content – The quality of Starfall is indicated as very good by 40% of the respondents from Romania, good by 60%. From Lithuania, 10% of respondents claimed that the quality of content of this tool is good; 30% neither good nor bad; 20% poor and 40% considered that this tool quality is very poor. From Estonia, 75% see this tool as good and 25% considered it neither good nor bad.



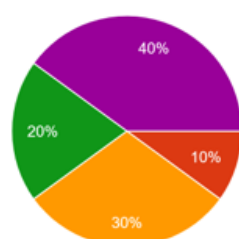
(Romania)

● very good
● good
● neither good, nor bad
● poor
● very poor



(Estonia)

● very good
● good
● neither good, nor bad
● poor
● very poor



(Lithuania)

● Very good
● Good
● Neither good nor difficult
● Poor
● Very poor



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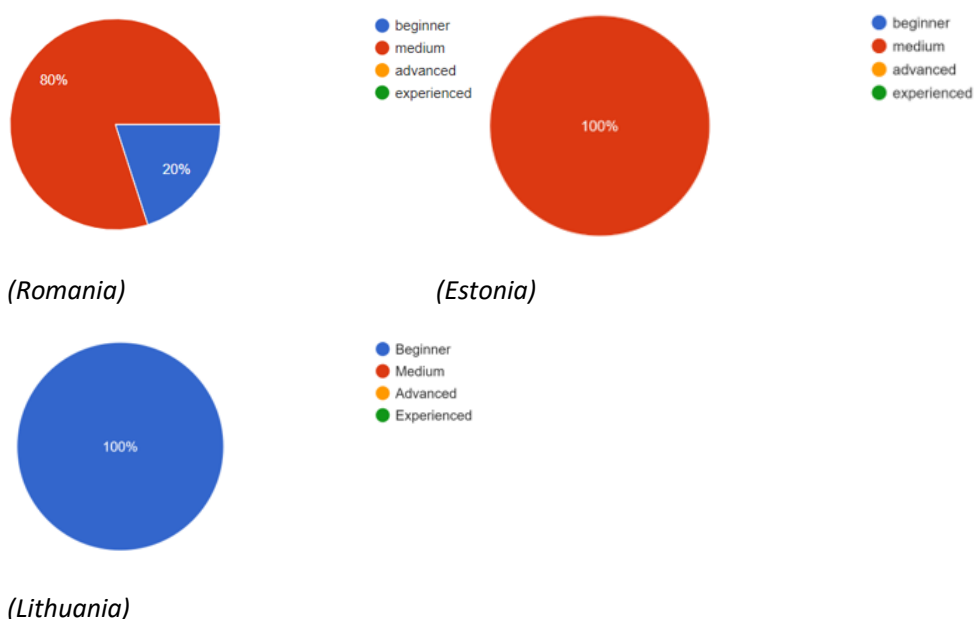
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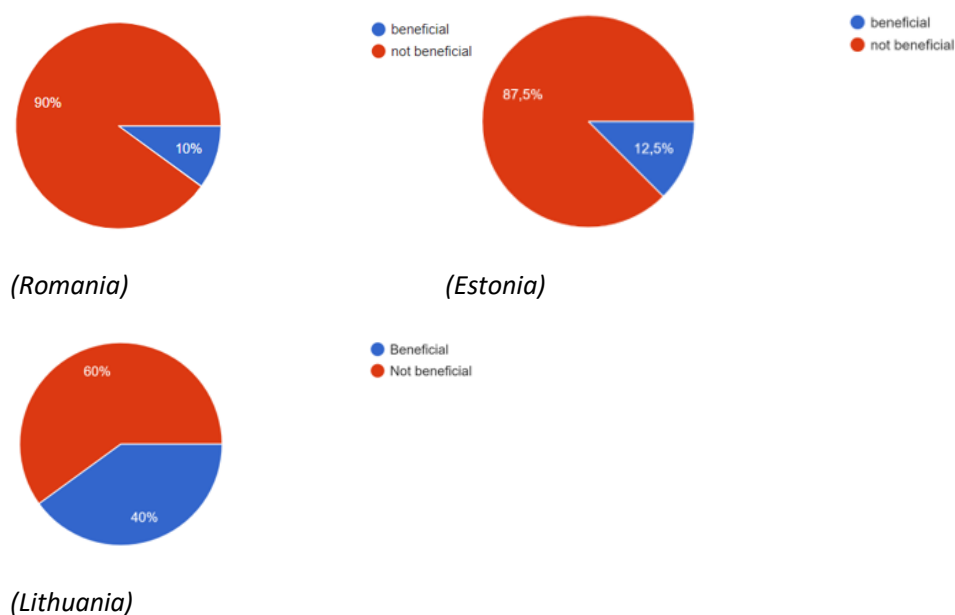
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Recommended User Level – This evaluation criterion reveals the relationship between the user’s digital skill level and the use of the tool. It was found that 20% of the responding teaching staff from Romania considered it to have a beginner level, 80% considered it to be medium level. 100% of the Lithuanian respondents considered it to be beginner level. 100% of the Estonian respondents considered it to be medium level.



Cost Benefit – This evaluation criterion concerns the cost-benefit ratio of Starfall, highlighting the correlation between the benefits and the use of the application for educational purposes. Specifically, 10% of the respondents from Romania declared that this digital tool is beneficial for instructional-educational activities, while 90% considered it not beneficial. 40% of Lithuanian staff considered it to be beneficial and 60% think it is not beneficial. On the other hand, 12.5% of Estonian respondents declared that Starfall is a beneficial tool for instructional-educational activities and 87.5% is not beneficial.



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Area of Application - The ranking of the application fields of Starfall highlighted the fact that 30% of Romanian respondents mostly used it for brainstorming; 20% used Starfall for quiz; also 20% used it for evaluation; 10% used it for visualization. The answers of Estonian respondents showed us that 100% used it for learning games; 25% used it for create worksheets; 12.5% used it for brainstorming, presenting and quiz. The answers of Lithuanian respondents showed us that 100% used it for visualization and learning games; 70% used it for quiz; 20% used it for music intellect; 10% used it for learning songs and numbers.



(Romania)



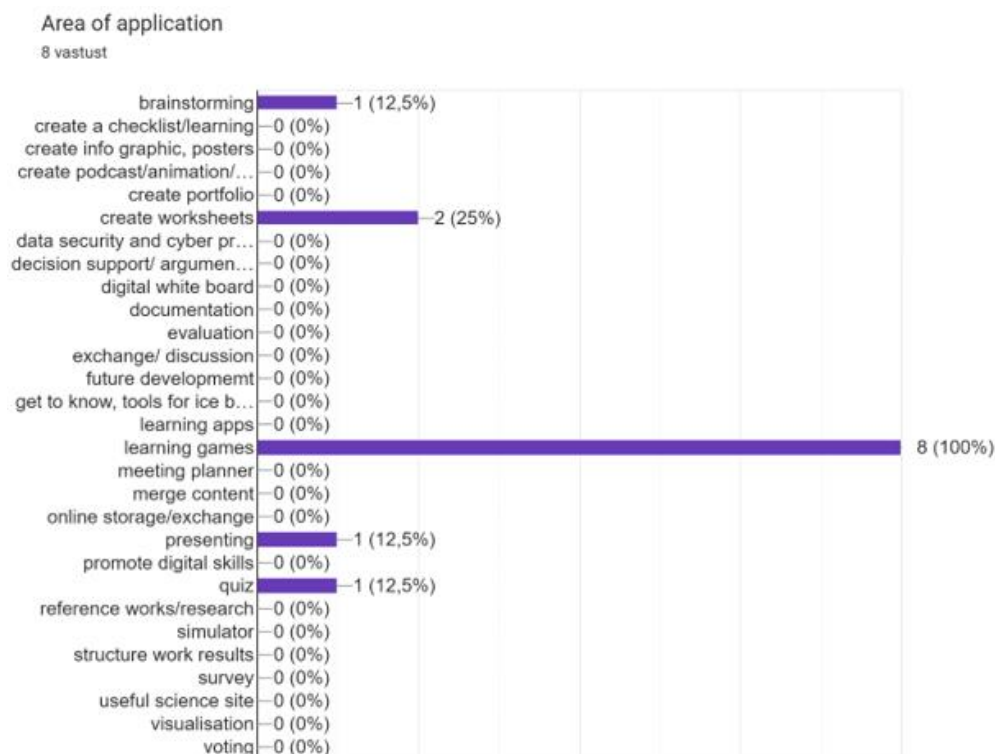
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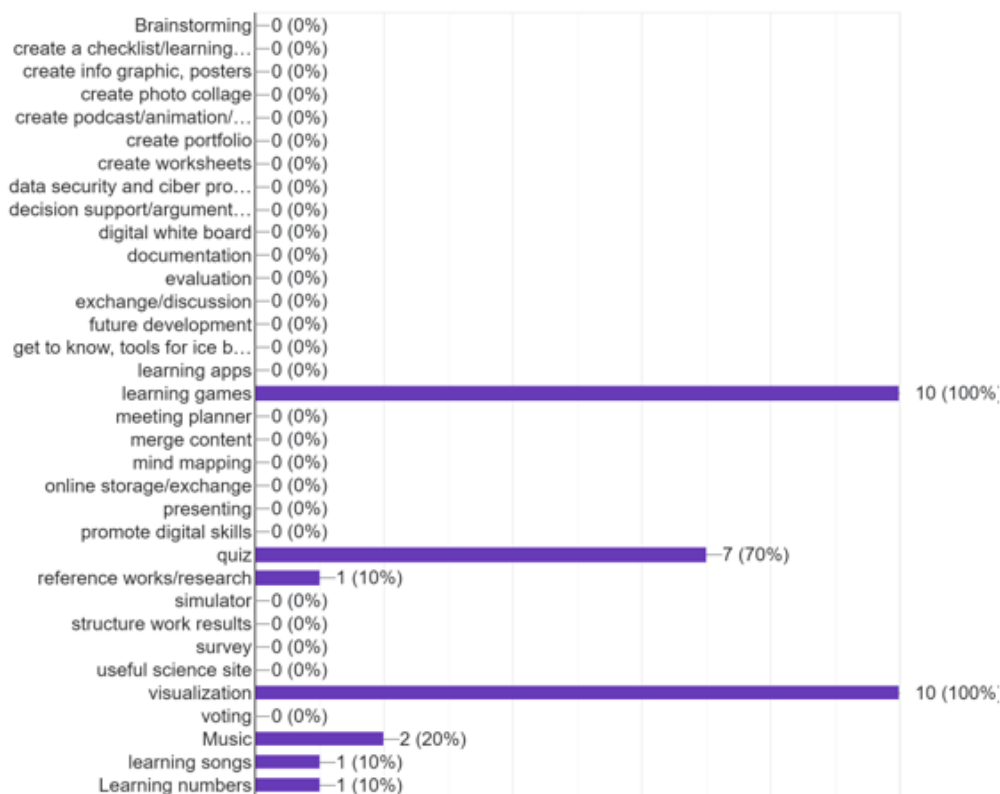
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(Estonia)



(Lithuania)



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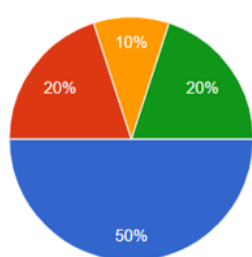
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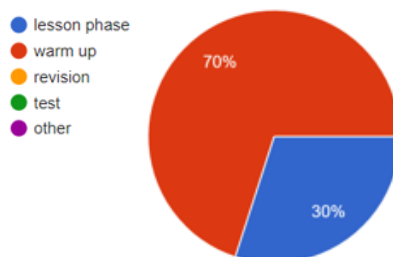
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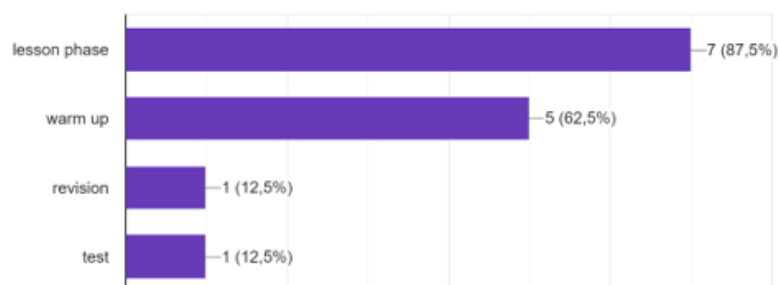
Educational Use – 50% of Romanian, 87.5% of Estonian and 30% of Lithuanian respondents claimed that they use this tool for lessons. Additionally, 20% of Romanians, 62.5% of Estonians and 70% of Lithuanians use it for warm up. 20% Teachers from Romania also use Starfall for test and 10% for revision. 20% Teachers from Romania also use Starfall for test and 10% for revision.



(Romania)

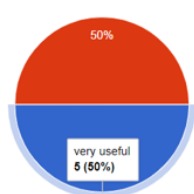


(Lithuania)

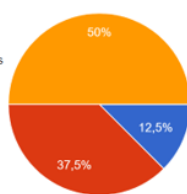
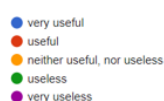


(Estonia)

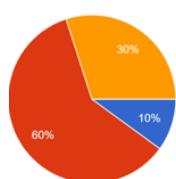
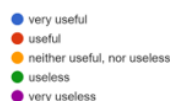
Usefulness – 50% respondents from Romania, 50% teachers from Estonia and 60% of Lithuanian teachers think this tool is useful. 50% respondents from Romania, 12.5% from Estonia and 10% from Lithuania respondents claimed this tool is very useful. Meanwhile, 50% from Estonia and 30% from Lithuania stated that it is neither useful nor useless.



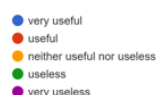
(Romania)



(Estonia)



(Lithuania)



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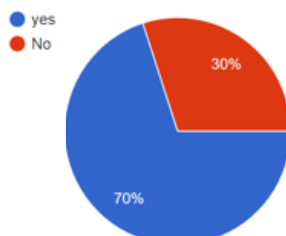
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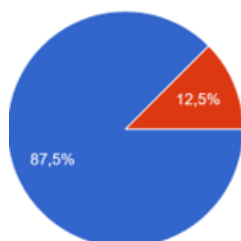
Recommendation – The responding teaching staff from Romania considered (100%) they would recommend this tool for other teachers. 70% of Estonian teachers also would recommend and 30% would not. 87.5% would recommend this tool and 12.5% would not recommend it to other teachers.



(Romania)



(Estonia)



(Lithuania)

Conclusion - Summing up the responses of teachers from three countries, Starfall can be used for a variety of educational purposes. For kindergartners, it is particularly useful for basic literacy and numeracy exercises, language (English) learning. It supports learning through repetition, reinforcement and games, which are key at this developmental stage.

Starfall is a great example of how digital tools can be integrated into the classroom effectively. However, the quality of the tool's content was not appreciated equally in each kindergarten school. Romanian and Estonian considered that this tool has good quality, but Lithuanian teachers see this tool quality as very poor. According to the Lithuanian teachers, Starfall website is slow, you need to press too many buttons. The quality of music and graphic design is poor. According to the assessment of the respondents, Starfall can be useful in visualization, learning English numbers, alphabet and many other songs. Teachers can integrate Starfall into their lessons, as well as use it for warm up, revision or for testing certain skills or knowledge. Most teachers agreed that this tool is very useful or useful and can be highly recommended to other kindergarten teachers.



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2.2 Data Interpretation of Digital Tool National Geographic Kids

Vendor Description – National Geographic Kids features educational games, videos, and other activities, centered mostly on animals and the natural world. Kids also can get a virtual tour of different countries, featuring fun facts and other information.

National Geographic Books creates and distributes print and digital works that inspire, entertain, teach, and give readers access to a world of discovery and possibility. Each year, we publish more than 175 new books for adults, families, and children on a wide range of nonfiction subjects from animals to travel, cartography to history, fun facts to moving stories.

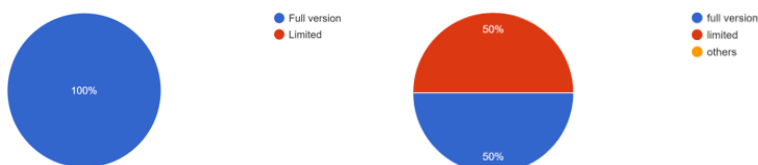
We are one of the world's leading nonfiction publishers, proudly supporting the world of our scientists, explorers, photographers, and authors, as well as publishing a diverse list of books that celebrate the world and all that is in it. A portion of our proceeds is used to fund exploration, conservation, and education through ongoing contributions to the work of the National Geographic Society.

We publish about 50 titles each year for adults in the categories of history, science, health, travel, photography, reference, memoir, and narrative nonfiction. Our books are distributed by Penguin Random House, the world's largest trade publisher, and are available in 38 languages in more than 60 countries and can be found in countless bookstores, mass-market outlets, schools, libraries, and specialty retailers throughout the world.

In our efforts to support the mission of the National Geographic Society and inspire children's curiosity, we are category leaders in atlases, kid-driven books on high-interest topics with strong visuals and amped-up fun, as well as curriculum-based language, literacy, and STEM programs. We also create activity and gift books, along with award-winning narrative nonfiction and fact-based fiction titles.

Questionnaire Survey - The primary objective of the survey was to assess the utilization of the digital tool National Geographic Kids in educational activities among kindergarten teachers in three European countries – project partners from Romania, Lithuania and Estonia. Additionally, we aimed to gather feedback on teachers' opinions regarding various aspects of the tool, including its accessibility, navigability, quality of content, required user level, cost-benefit ratio, and overall usefulness. The respondents included teachers from LA Mudila Kindergarten (Estonia), Saulės Gojus Kindergarten (Lithuania), and Gradinita nr.50 Kindergarten (Romania).

Evaluated Version – The first point aimed to highlight the usage of National Geographic Kids application in the full version or in the limited (free) version. It was found that 33.3% of Romanian respondents mentioned that they use full version, 66.7% are using the limited version. In Estonia 50% respondents mentioned that they use a full version and 50% are using the limited version. For Lithuania, 100% from teachers are using a full version.



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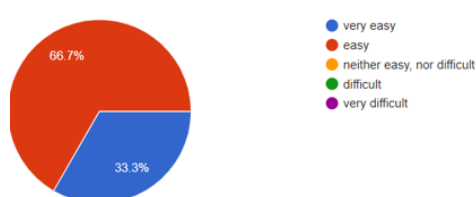
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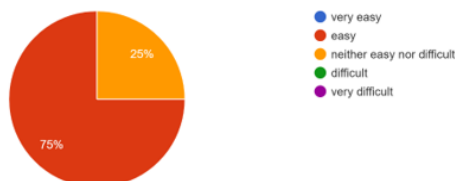
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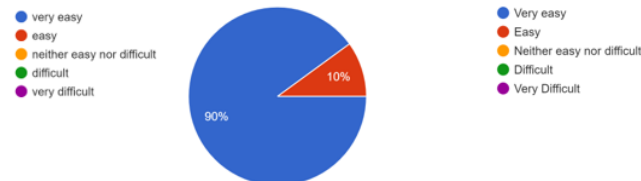
Navigability – The navigability of the digital tool National Geographic Kids was indicated as easy by 66.7% of the responding teaching staff from Romania, 75% from Estonia and 10% from Lithuania. Additionally, 33.35 of the respondents from Romania, 25% from Estonia and 90% from Lithuania noted that navigability is very easy.



(Romania)

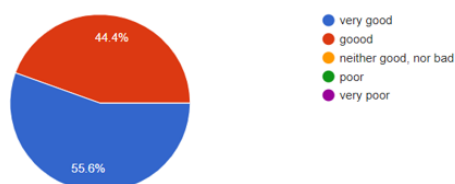


(Estonia)

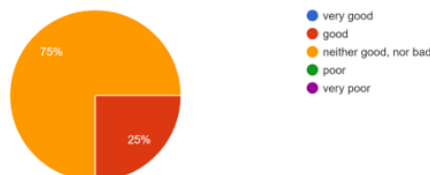


(Lithuania)

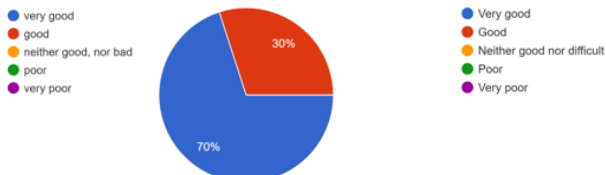
Quality of Content – The quality of National Geographic Kids is indicated as very good by 55.6% of the respondents from Romania, good by 44.4%. From Estonia, 25% of respondents claimed that the quality of content of this tool is good and 75% neither good nor bad. From Lithuania, 30% see this tool as good and 70% considered it very good.



(Romania)

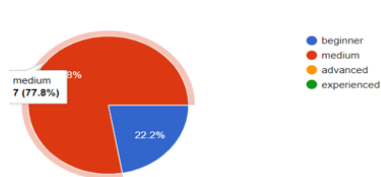


(Estonia)

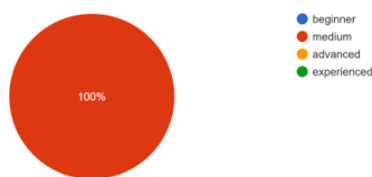


(Lithuania)

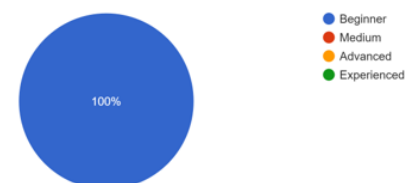
Recommended User Level – This evaluation criterion reveals the relationship between the user's digital skill level and the use of the tool. It was found that 22.2% of the responding teaching staff from Romania considered it to have a beginner level, 77.8% considered it to be medium level. 100% of the Estonian respondents considered it to be medium level. 100% of the Lithuanian respondents considered it to be beginner level.



(Romania)



(Estonia)



(Lithuania)



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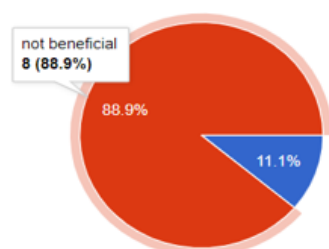
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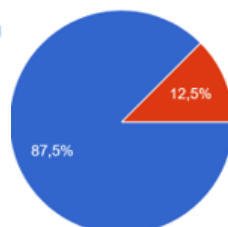


Cost Benefit – This evaluation criterion concerns the cost-benefit ratio of National Geographic Kids, highlighting the correlation between the benefits and the use of the application for educational purposes. Specifically, 11.1% of the respondents from Romania declared that this digital tool is beneficial for instructional-educational activities, while 88.9% considered it not beneficial. 87.5% of Estonian staff considered it to be beneficial and 12.5% think it is not beneficial. On the other hand, 100% of Lithuanian respondents declared that National Geographic Kids is a beneficial tool for instructional-educational activities.



(Romania)

● beneficial
● not beneficial



(Estonia)

● beneficial
● not beneficial



(Lithuania)

● Beneficial
● Not beneficial

Area of Application - The ranking of the application fields of National Geographic Kids highlighted the fact that 44.4% of Romanian respondents mostly used it for brainstorming; 33.33% used National geographic Kids for create worksheets; 11.1% used it for learning apps and 11.1% used it for presenting. The answers of Estonian respondents showed us that 87.5% used it for presenting; 37.5% used it for learning games; 25% used it for visualization and 12.5% used it for brainstorming. The answers of Lithuanian respondents showed us that 90% used it for visualization; 80% used it as useful science site; 60% used it for learning games; 50% used it for quiz.



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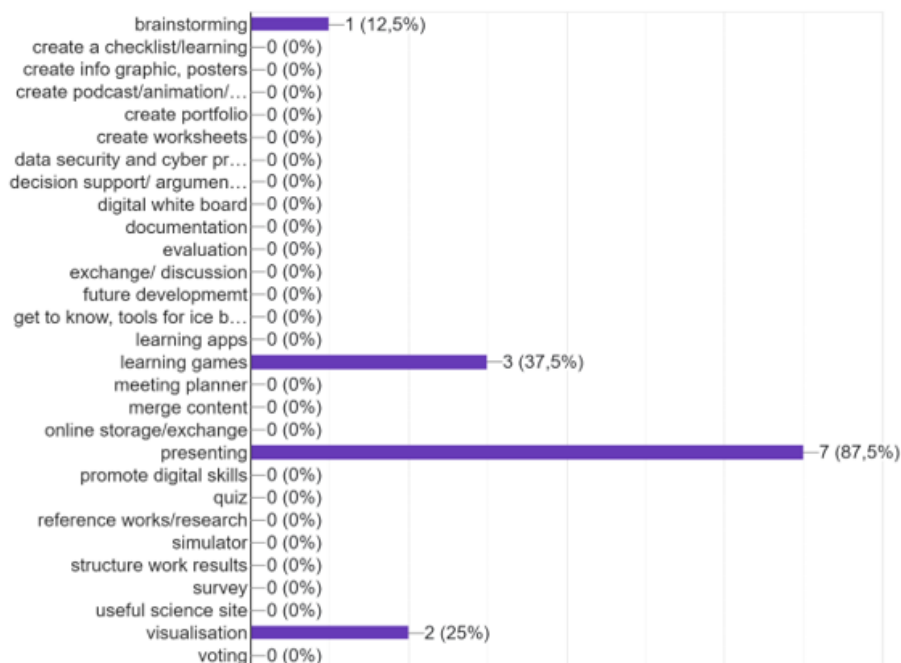
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(Romania)



(Estonia)



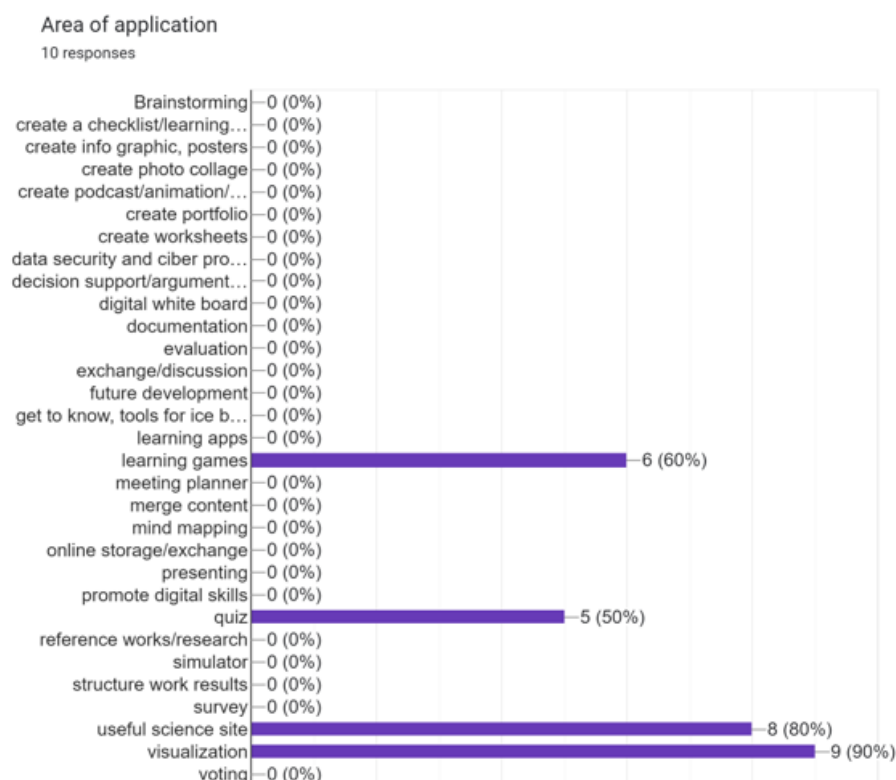
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(Lithuania)

Educational Use – 66.7% of Romanian, 87.5% of Estonian and 90% of Lithuanian respondents stated that they use this tool for lessons. Additionally, 22.2% of Romanians, 87.5% of Estonians and 10% of Lithuanians use it for warm up. Teachers from Romania also use National Geographic Kids for tests (11.1%).



(Romania)

(Lithuania)



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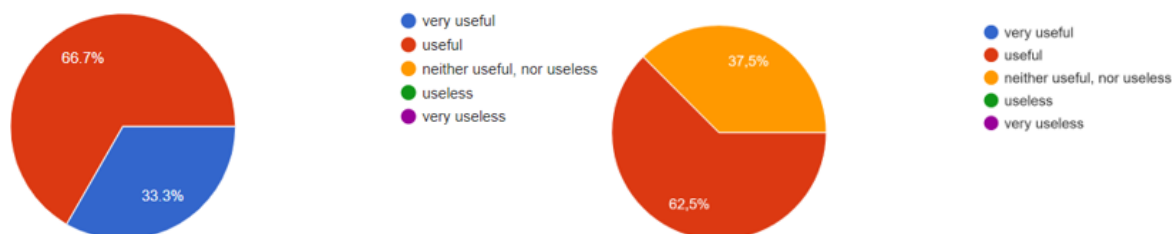
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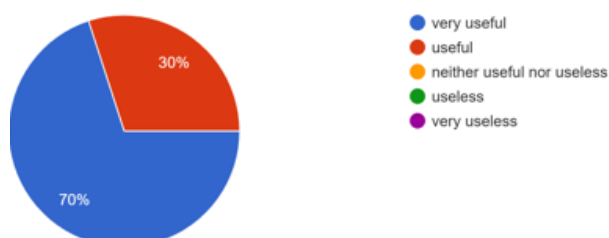


(Estonia)

Usefulness – 66.7% respondents from Romania, 62.5% teachers from Estonia and 30% of Lithuanian teachers think this tool is useful. 33.3% respondents from Romania and 70% from Lithuania respondents claimed this tool is very useful. Meanwhile, 37.5% from Estonia stated that it is neither useful nor useless.



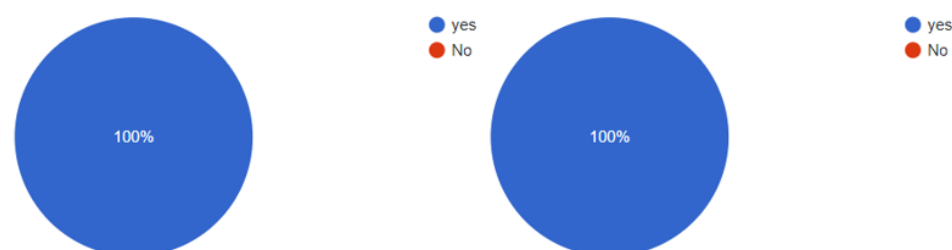
(Romania)



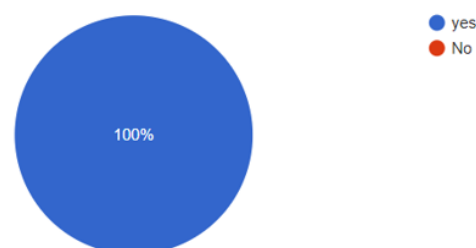
(Estonia)

(Lithuania)

Recommendation – The responding teaching staff from all three countries concluded that National Geographic Kids is one of the digital tools that can be recommended to another teacher or student with a 100% certainty.



(Romania)



(Estonia)

(Lithuania)



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Conclusion – Summing up the responses of teachers from three countries, National Geographic Kids can be used for a variety of educational purposes. For kindergartners, it's particularly useful for basic literacy and numeracy exercises, language learning, and introductory science concepts. It supports learning through repetition, reinforcement and games which are key at this developmental stage.

National Geographic Kids is a great example of how digital tools can be integrated into the classroom effectively. The quality of the tool's content was well appreciated by the teachers. The possibilities of creation of educational content provided by National Geographic Kids received high marks and this tool does not require users to have intermediate digital skills. According to the assessment of the respondents, National Geographic Kids can be useful in learning about science, there are learning games, you can create various presentations for childrens. This tool teaches us about the environment, nature, and the world around us. Teachers can integrate National Geographic Kids into their lessons as a part of the lesson, as well as use it for revision or for testing certain skills or knowledge. Most teachers agreed that this tool is very useful and can be highly recommended to other kindergarten teachers.

2.3 Data Interpretation of Digital Tool Kahoot!

Vendor Description. Kahoot! is a global learning and engagement platform company that wants to empower everyone, including children, students, and employees, to unlock their full learning potential.

Our Kahoot! platform makes it easy for any individual or corporation to create, share, and host learning sessions that drive compelling engagement. Kahoot! sessions can be hosted anywhere, in person or virtually, using any device with an internet connection.

In addition, our family of apps takes math learning to a new level and empowers children to learn to read through play. Learners of all ages can make language learning natural with immersive visuals and play through our Drops apps, and organizations can connect and engage their work teams with Actimo, our employee engagement platform.

Kahoot! offers free and paid plans designed for use in the classroom, at work—whether in-person or virtual— or at home for social use or self-study.



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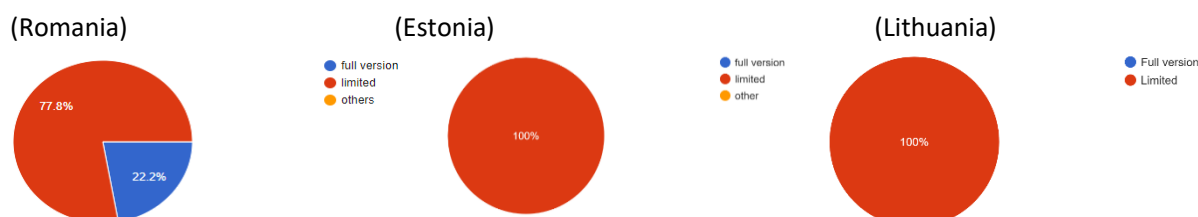
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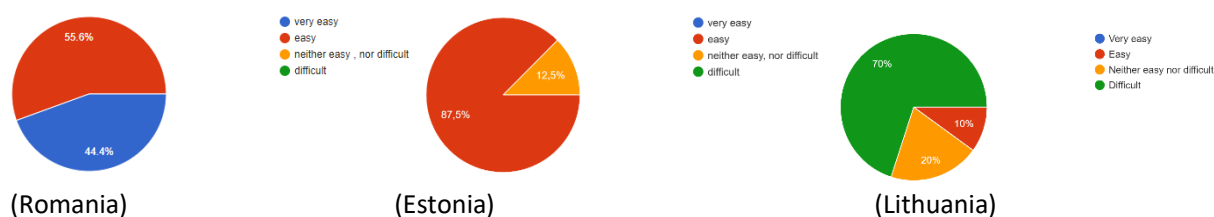


Questionnaire Survey. The primary objective of the survey was to assess the utilization of the digital tool Kahoot! in educational activities among kindergarten teachers in three European countries – project partners from Estonia, Lithuania and Romania. Additionally, we aimed to gather feedback on teachers' opinions regarding various aspects of the tool, including its accessibility, navigability, quality of content, required user level, cost-benefit ratio, and overall usefulness. The respondents included kindergarten teachers from Tallinna Kindergarten Mudila (Estonia), Saulės Gojus Kindergarten and School (Lithuania) and Kindergarten no.50 (Romania).



Evaluated Version. The first point aimed to highlight the usage of Kahoot! in either the full (paid) version or the limited (free) version. Results indicated that 77.8% of Romanian and all Estonian and Lithuanian respondents used the limited version of Kahoot!. 22.2% of Romanian respondents used the full version.

Accessibility. This criterion aimed to assess how respondents evaluate the accessibility of the tool. 44.4% of Romanian respondents indicated that the tool has a high level of accessibility, and they can access it very easily. 55.6% of Romanian, 87.5% of Estonian and 10% of Lithuanian respondents thought that it has quite high level of accessibility and they can access it easily. 12.5% of Estonian and 20% of Lithuanian respondents claimed that it is neither easy nor difficult to access. At the same time 70% of Lithuanian respondents indicated a high degree of difficulty in accessibility.



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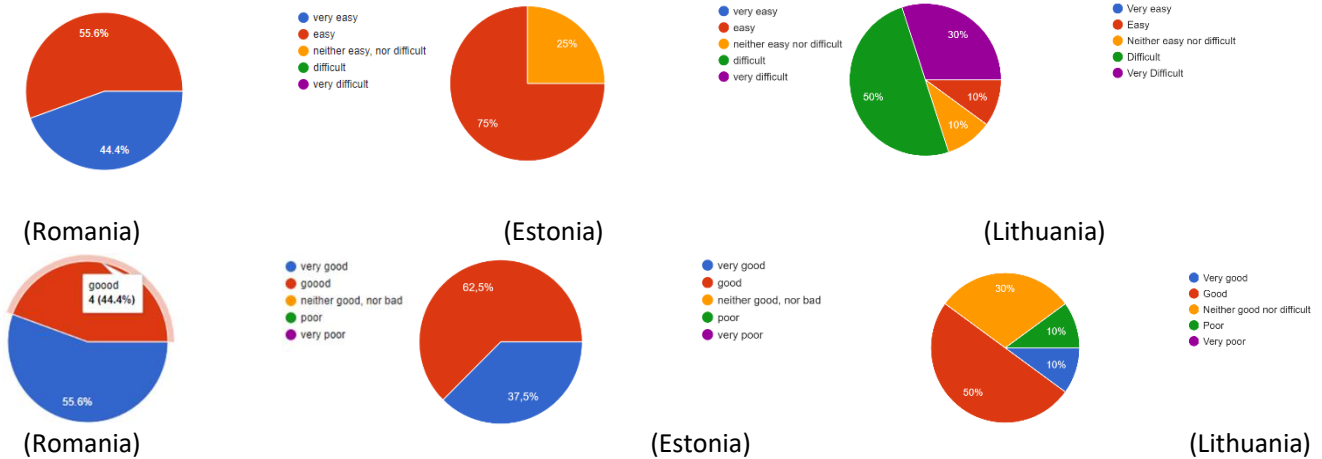
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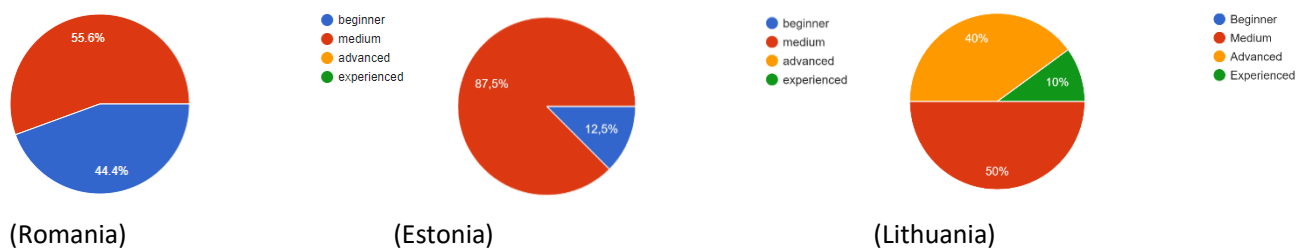


Navigability. The navigability of the digital tool Kahoot! was indicated as very easy by 44.4% of Romanian respondents. 55.6% of Romanian, 75% of Estonian and 10% of Lithuanian respondents noted that navigability is easy. 25% of Estonian and 10% of Lithuanian respondents considered Kahoot! to be neither easy nor difficult. At the same time, 50% of Lithuanian respondents thought that it is difficult and 30% of Lithuanian respondents considered Kahoot! to be very difficult.

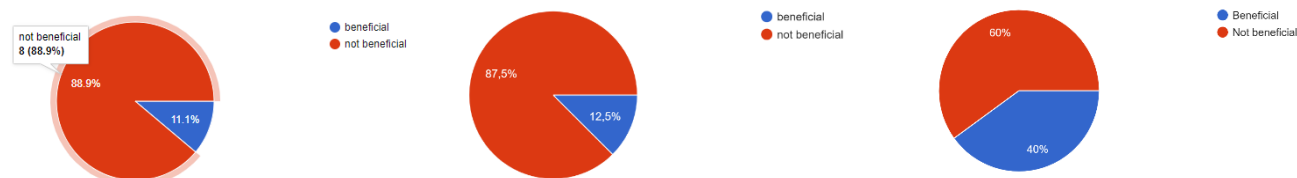


Quality of content. The quality of Kahoot! is indicated as very good by 55.6% of Romanian, 37.5% of Estonian and 10% of Lithuanian respondents. 44.4% of Romanian, 67.5% of Estonian and 50% of Lithuanian respondents considered the quality of Kahoot! to be good. At the same time, 30% of Lithuanian colleagues thought that the Kahoot's quality is neither good nor bad and 10% of Lithuanian respondents found the quality to be poor.

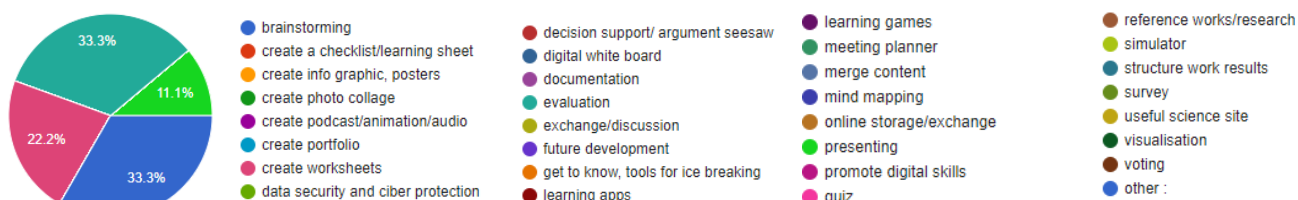
Recommended User Level. This evaluation criterion reveals the relationship between the user's digital skill level and the use of the tool. It was found that 44.4% of the responding teaching staff from Romania who used the application and 12.5% of Estonian respondents thought that while using Kahoot! it is sufficient to have a beginner's user level. 55.6% of Romanian, 87.5% of Estonian and 50% of Lithuanian respondents thought that while using Kahoot! the user level must be at least medium skills. At the same time, 40% of Lithuanians thought that the user should have advanced skills and 10% of Lithuanians thought that Kahoot!'s users should have experienced user level.



Cost Benefit. This evaluation criterion concerns the cost-benefit ratio of Kahoot!, highlighting the correlation between the benefits and the use of the application for educational purposes. Specifically, 40% of Lithuanian, 12.5% of Estonian and 11.1% of Romanian respondents declared that this digital tool is beneficial for instructional-educational activities. On the other hand, 88.9% of Romanian, 87.5% of Estonian and 60% of Lithuanian respondents declared that Kahoot! is not a beneficial tool for instructional-educational activities.

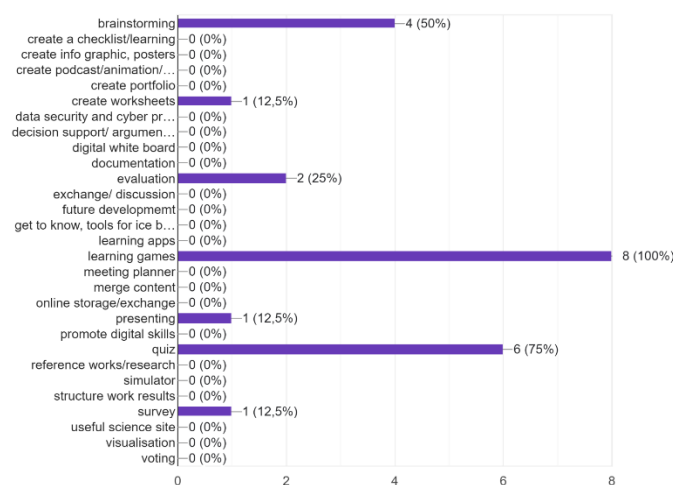


Area of Application. The ranking of the application fields of Kahoot! highlighted the fact that 33.3% of Romanian, and 50% of Estonian respondents use Kahoot! for brainstorming. 100% of Estonian and 40% of Lithuanian respondents use Kahoot! for learning games. 33.3% of Romanian and 25% of Estonian respondents use it for evaluation. 22.2% of Romanians, 75% of Estonians and 80% of Lithuanians use Kahoot! for quizzes. 11.1% of Romanian and 12.5% of Estonian respondents use Kahoot! for presenting. 12.5% of Estonians and 30% of



Lithuanians use it for survey or voting. 30% of Lithuanians use Kahoot! for visualization.

(Romania)



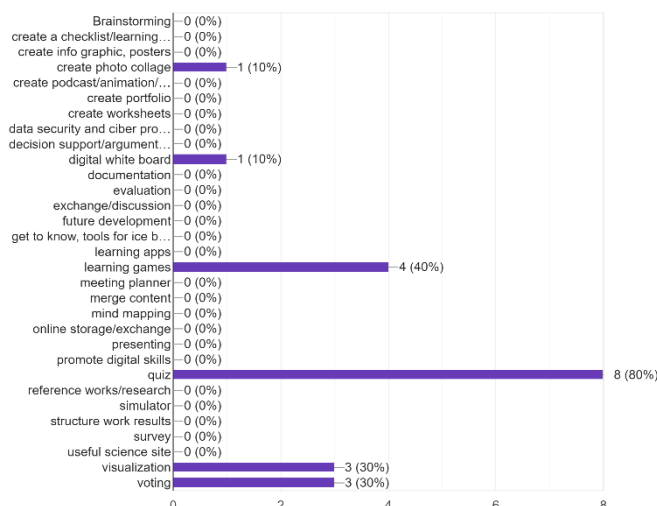
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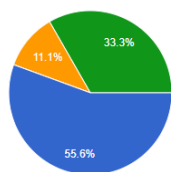


(Lithuania)

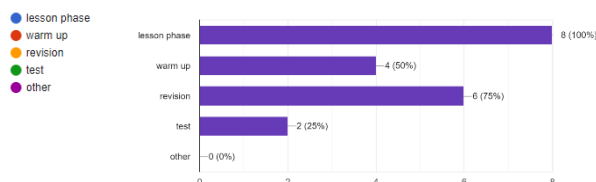


Educational Use. 100% of Estonian, 55.6% of

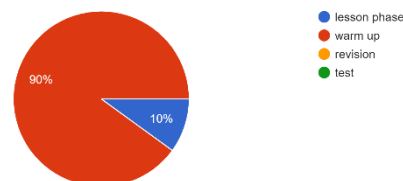
Romanian and 10% of Lithuanian respondents use Kahoot! in lesson phase. 50% of Estonian and 90% of Lithuanian respondents use it for warm up. 75% of Estonian and 11.1% of Romanian teaching staff use Kahoot! for revision. 25% of Estonian and 33.3% of Romanian respondents use it for tests.



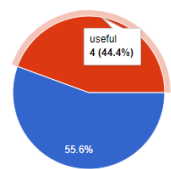
(Romania)



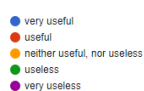
(Estonia)



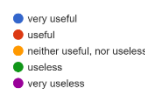
(Lithuania)



(Romania)



(Estonia)



(Lithuania)

Usefulness. The evaluation showed that 55.6% of Romanian, 25% of Estonian and 30% of Lithuanian respondents find Kahoot! to be very useful. 44.4% of Romanian, 75% of Estonian and 20% of Lithuanian respondents think it is useful. At the same time, 40% of Lithuanian teaching staff think it is neither useful nor useless and 10% of Lithuanians think it is very useless.

Recommendation (To Teacher or Student). All of the responding teaching staff from Romania and Estonia concluded Kahoot! is one of the digital tools that can be recommended to another teacher or student. 50% of Lithuanian respondents agreed with the recommendation. 50% of Lithuanian respondents would not recommend it to another teacher or student.



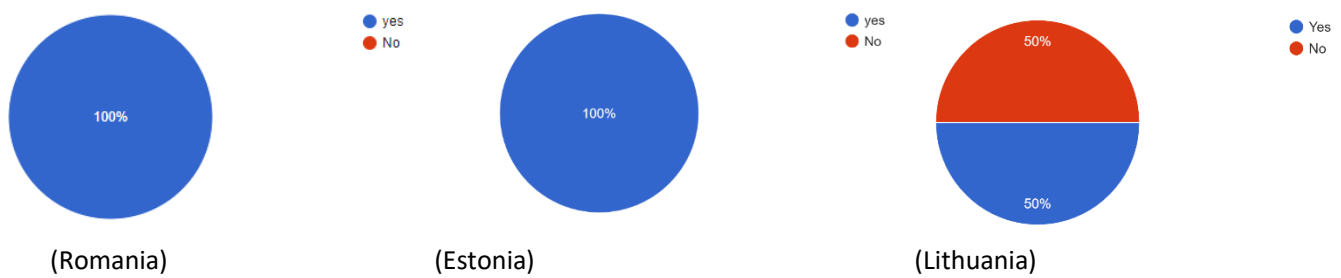
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Conclusion. To sum up the responses, the experiences with accessibility, navigability and the thoughts about Kahoot! vary from country to country. Nevertheless, teachers in Estonia and Romania find the digital tool to have very good or good quality. They also think that it is useful and would recommend it to another teacher or a student. The experiences and thoughts about Kahoot! may be so different, because kindergarten teachers mainly use digital tools with the children's mother tongue, so the content is easier for a child to understand.

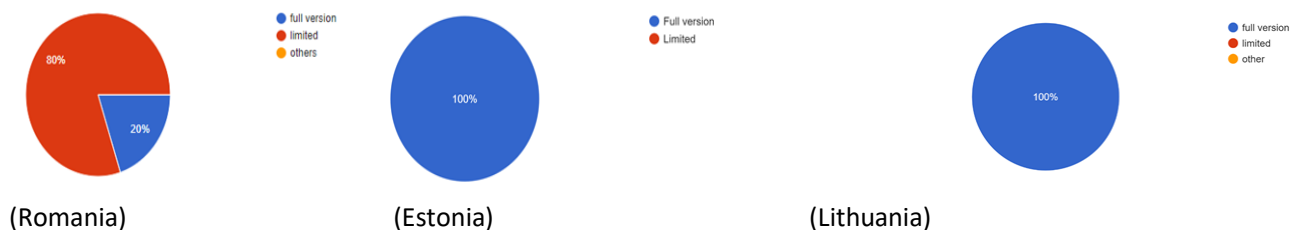
2.4 Data interpretation of digital tool Frepy

The application to be interpreted is Frepy for the three European countries Romania, Estonia and Lithuania. The research based on the questionnaire had as its main objective the determination to what extent the respondents use the application within instructional-educational activities. The three institutions involved with the choosing, testing and evaluation of the apps are Kindergarten no.50, Tallinna Lastead Mudila and Saules Gojus.

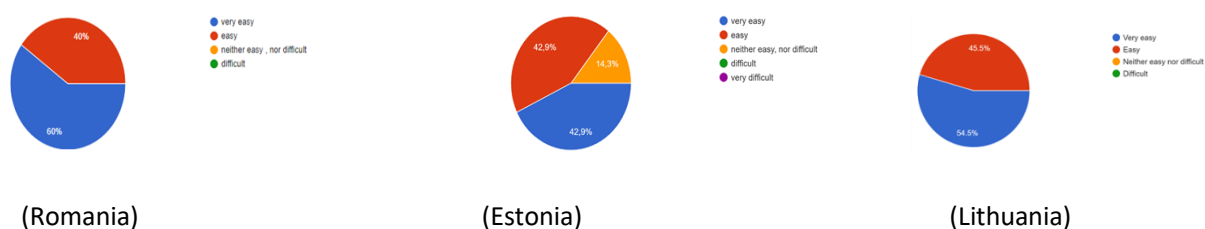
The digitalization of the classroom environment, especially at the kindergarten level, is a fascinating and transformative journey. It's not just about swapping out paper for screens; it's about enriching the educational landscape in ways that are engaging, inclusive, and incredibly adaptive to individual learning needs. First off, digital tools, like Frepy, bring the world into the classroom in vivid color and interactivity. Imagine young learners exploring the depths of the ocean or the expanse of space through an interactive app or a virtual reality headset.

This not only captures their imagination but also deepens their understanding and retention of complex concepts through experiential learning. Moreover, Frepy digital platforms can be incredibly adaptive, offering personalized learning paths that cater to the unique pace and style of each child. This is crucial at an early age, where the variance in developmental stages is pronounced. Digital tools can provide immediate feedback, not just to students but to teachers as well, enabling a more tailored educational experience that can identify and address gaps in understanding swiftly.

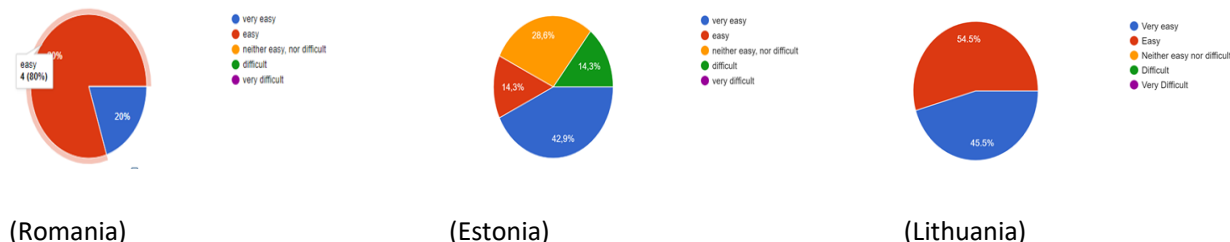
The first item aimed to highlight the use of the Frepy application in the full version or in the limited (free) version. It was found that 20% of Romanian respondents mentioned that they use the full version, and 80 % are using the limited version. For Estonia and Lithuania, all the teachers are using a full version (100%).



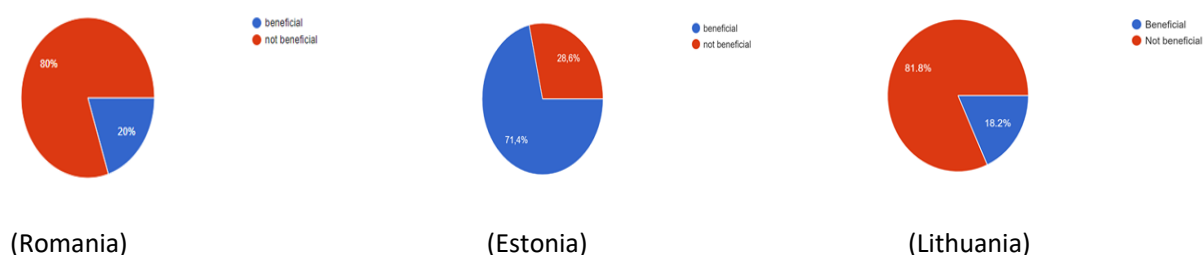
Another item looked at the degree of accessibility of the Frepy application among pre-school teachers. In Romania, an average of 40% find it very easy, and 60% find it easy to use. In Estonia 42.9% find it very easy to use the app, 42.9%, easy and 14.3% neither easy, nor difficult, while 45.5% of Lithuania's respondents believe that it has a very high level of accessibility, for 60% of respondents, for an easy level.



The navigability of Frepy application was considered by 20 % of the responding teachers in Romania, 42.9% rating of the responding teachers of Estonia and 45.5% of Lithuanian teachers as having an easy level. 80% of the respondents of Romania, 28.6% from Estonia, and 55.5 % of Lithuanian respondents believe that it is an easy level.



The item targeting **the cost benefit** ratio of Frepy application has highlighted the correlation between benefits and the use of the application for educational purposes. 20% of the respondents in Romania, 71.4% of the respondents of Estonia and 18.8 % of respondents in Lithuania declare it as beneficial to the instructional-educational activity.



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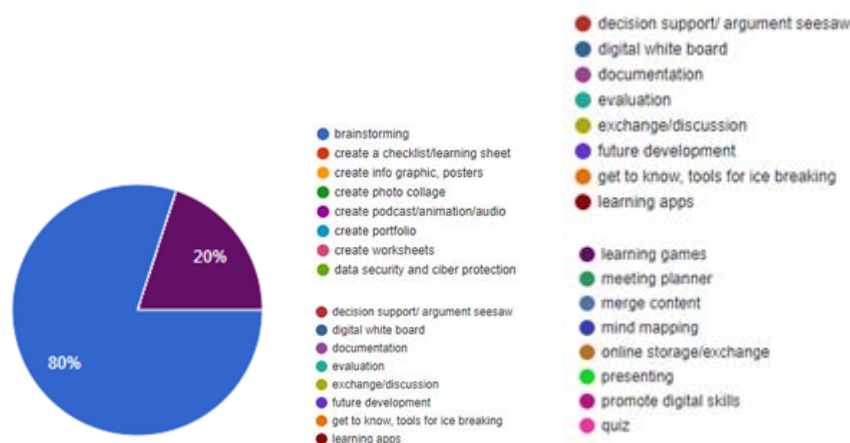
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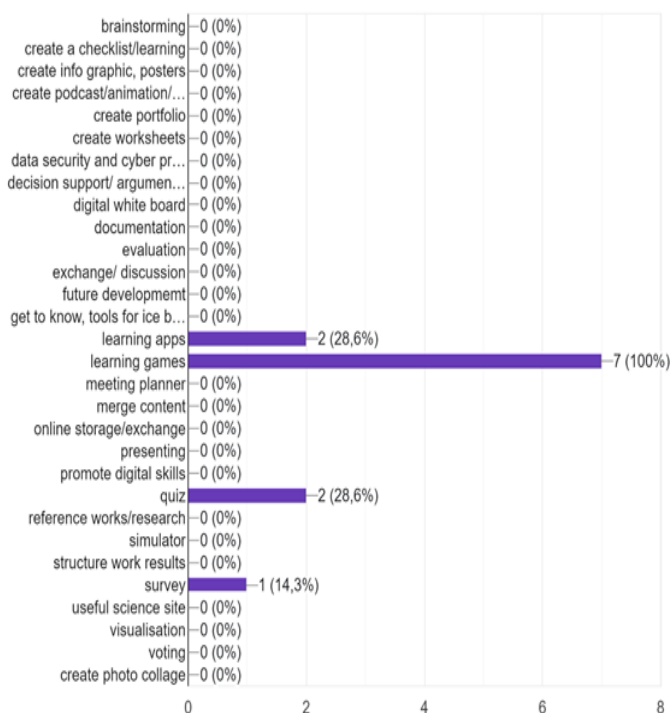
Area of applications What we can see is that this item is for several educational purposes, for instance: documentation, brainstorming, digital white board, quiz, learning app, evaluation, learning games.



(Romania)

Area of application

7 vastust



(Estonia)



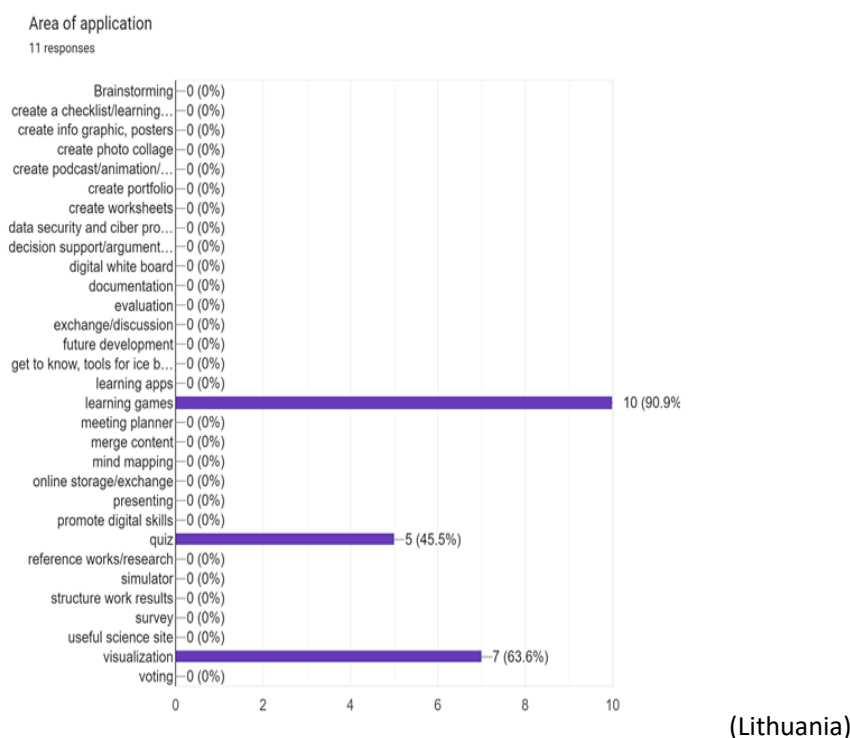
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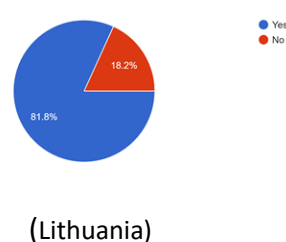
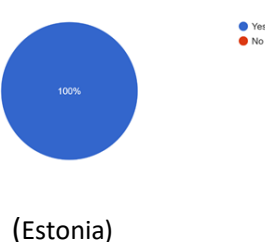
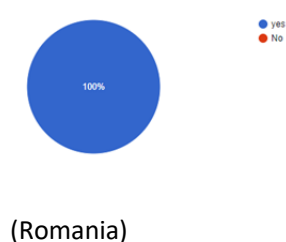
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The responding teaching staff from Romania, Estonia and Lithuania concluded after the evaluation that the Frepy application is one that can be recommended to another teacher or a student, or it could not be recommended to any teacher or a student. The teaching staff in Romania and Estonia concluded after the evaluation that the Frepy application is one that can be recommended to another teacher or a student in a ratio of 100%.



In conclusion, Frepy can be used for a variety of educational purposes in the classroom. For kindergartners, it is particularly useful for basic literacy and numeracy exercises, language learning, and introductory science concepts. It supports learning through repetition and reinforcement, which are key at this developmental stage. Digital tools, like Frepy, often incorporate game-like elements that can make learning more fun and less intimidating. This gamification of education can motivate young learners, encourage persistence, and foster a positive attitude towards learning.

Accessibility is another key advantage. Digital resources can be made available to children with diverse learning needs and abilities, ensuring that education is inclusive. Text can be enlarged, audiobooks can be listened to, and interactive activities can be adjusted to various skill levels, making learning accessible to all. We highly recommend Frepy as a useful app, for pre-school teachers, and for children.

The number of the teachers who tested and evaluated the app: **7 teachers-Tallina Lastead Mudila, 5 teachers – Kindergarten no.50, and 11 teachers - Saules Gojus**

2.5 Data Interpretation of Digital Tool Book Creator

Vendor Description. Book Creator is a digital tool that enables students to create and read multimodal digital books. It is a tool for enhancing student engagement through story creation and multimedia design. When creating their own books, students can either generate their own content (by typing, drawing, or uploading self-made videos, audio files, and images).

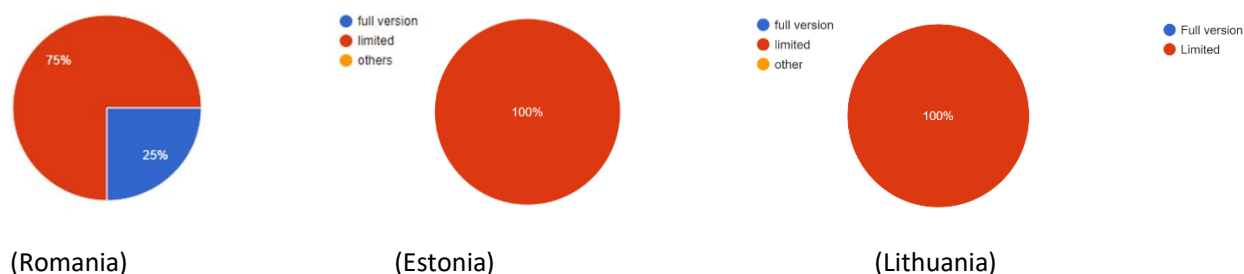
Book Creator is an easy-to-use tool for making multimedia digital books in any subject area from primary school upwards. When using in kindergarten, Book Creator is a tool for the teacher to use for work with children in any subject or project to show made artwork/ creations/ activities etc.

Book Creator was launched in 2011 in Bristol, UK. Originally available for iPads, the online version makes book creation possible with any device.

The pricing for the online version of Book Creator is completely different from the iPad app. Teachers can create a free account at app.bookcreator.com where they will get access to 1 library and 40 books. If teachers need more books or libraries, they can choose the paid version.

Questionnaire Survey. The primary objective of the survey was to assess the utilization of the digital tool Book Creator in educational activities among kindergarten teachers in three European countries – project partners from Estonia, Lithuania and Romania. Additionally, we aimed to gather feedback on teachers' opinions regarding various aspects of the tool, including its accessibility, navigability, quality of content, required user level, cost-benefit ratio, and overall usefulness. The respondents included kindergarten teachers from Tallinna Kindergarten Mudila (Estonia), Saulės Gojus Kindergarten and School (Lithuania) and Kindergarten no.50 (Romania).

Evaluated Version. The first point aimed to highlight the usage of Book Creator in either the full (paid) version or the limited (free) version. Results indicated that all Estonian and Lithuanian respondents and 75% of Romanian respondents are using the limited version, while 25% of Romanians are using the full (paid) version.



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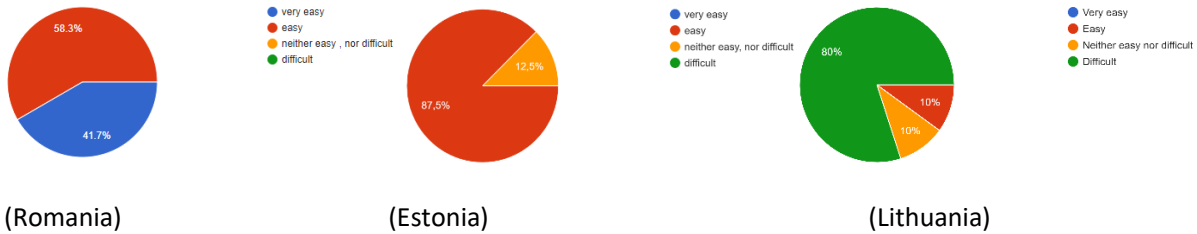
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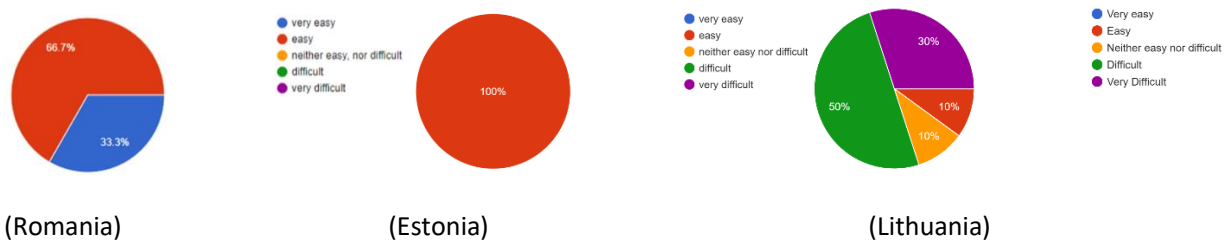
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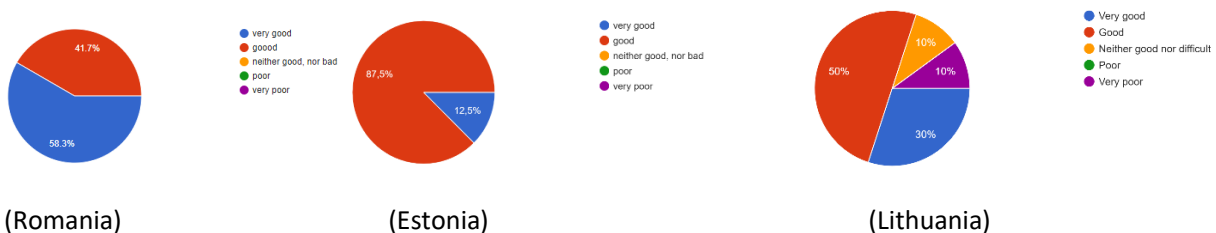
Accessibility. This criterion aimed to assess how respondents evaluate the accessibility of the tool. 41.7% of Romanian respondents indicated that the tool has a high level of accessibility, and they can access it very easily. 58.3% of Romanian, 87.5% of Estonian and 10% of Lithuanian respondents thought that it has a quite high level of accessibility and they can access it easily. 10% of Lithuanian and 12.5% of Estonian respondents claimed that it is neither easy nor difficult to access. At the same time, 80% of Lithuanian respondents indicated a high degree of difficulty in accessibility.



Navigability. The navigability of the digital tool Book Creator was indicated as very easy by 33.3% of Romanian respondents, also 66.7% of Romanian, 100% of Estonian and 10% of Lithuanian teachers found that the tool's navigability is easy. 10% of Lithuanian respondents found that the tool is neither easy nor difficult. At the same time, 50% of Lithuanian respondents thought that it is difficult and also 30% of Lithuanian respondents found it very difficult.



Quality of content. The quality of Book Creator is indicated as very good by 58.3% of Romanian, 12.5% of Estonian and 30% of Lithuanian respondents. 41.7% of Romanian, 87.5% of Estonian, and 50% of Lithuanian respondents found it good, while 10% of Lithuanians found it neither good nor difficult. 10% of Lithuanian respondents found that the quality of Book Creator is very poor.



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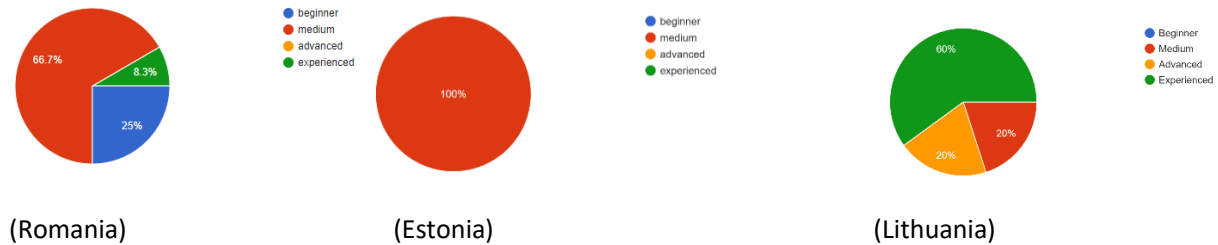
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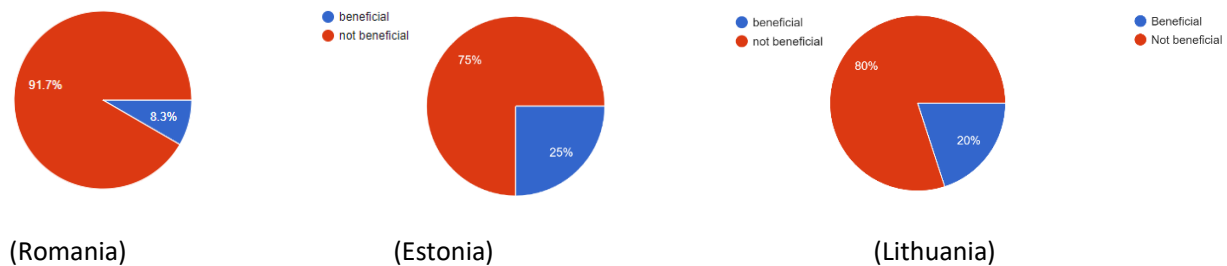
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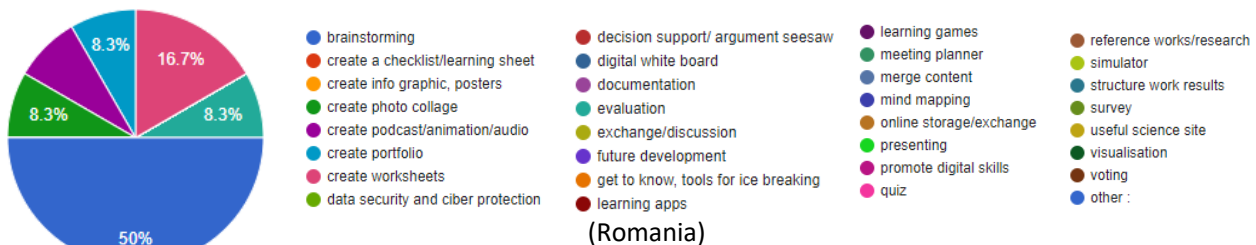
Recommended User Level. This evaluation criterion reveals the relationship between the user's digital skill level and the use of the tool. It was found that 25% of Romanian teaching staff believe it is sufficient if the user of the Book Creator has beginner level. At the same time, 66.7% of Romanian, 100% of Estonian and 20% of Lithuanian respondents believed that the user must have at least medium skills. At the same time, 20% of Lithuanian respondents thought that the user must have advanced skills and 60% of Lithuanian and 8.3% of Romanian respondents said that the users of Book Creator should have experienced digital skills level.



Cost Benefit. This evaluation criterion concerns the cost-benefit ratio of Book Creator, highlighting the correlation between the benefits and the use of the application for educational purposes. As kindergarten teachers, it was found that 8.3% of Romanians, 25% of Estonians and 20% of Lithuanians find the Book Creator to be a beneficial tool for instructional-educational activities. At the same time, 91.7% of Romanians, 75% of Estonians and 80% of Lithuanians do not find the application beneficial.



Area of Application. The ranking of the application fields of Book Creator highlighted the fact that 50% of Romanian and 37.5% of Estonian respondents used it for brainstorming. 16.7% of Romanian and 12.5% of Estonian respondents use Book creator for quizzes. The results also showed that 8.3% of Romanians and 75% of Estonians use it for creating a portfolio. 75% of Estonians and 20% of Lithuanians use it for presenting. 8.3% of Romanian, 75% of Estonian and 75% of Lithuanian respondents use Book Creator for creating photo collages. 37.5% of Estonians use it also for documentation, creating worksheets and as learning games. 30% of Lithuanians use it as a digital white board.



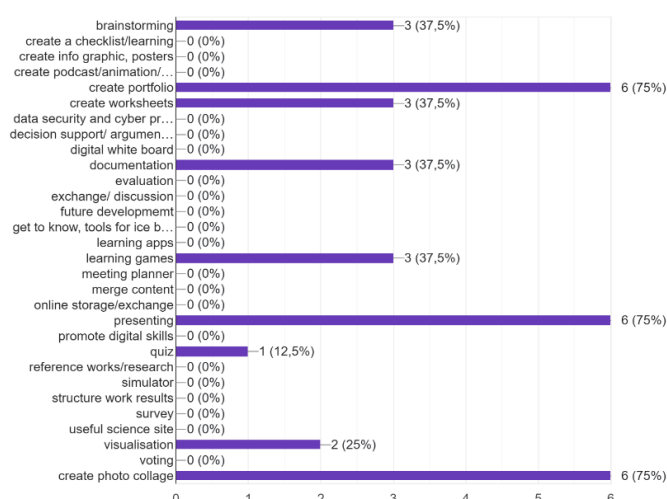
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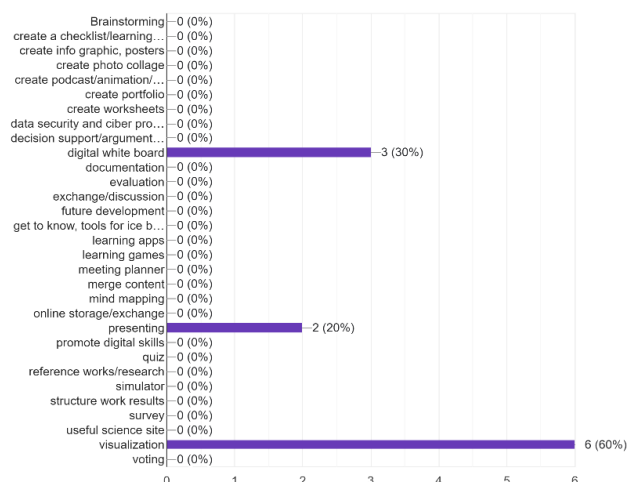
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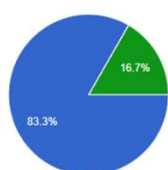


(Estonia)

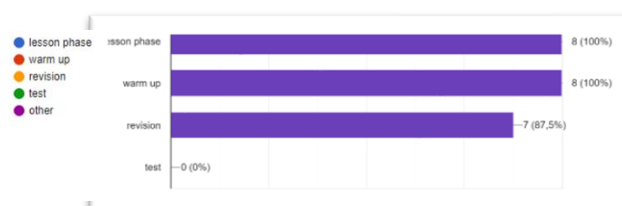


(Lithuania)

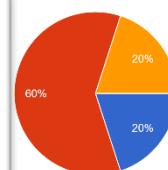
Educational Use. The evaluation showed that 83.3% of Romanian, 100% of Estonian and 20% of Lithuanian respondents use Book Creator during the lesson phase. 100% of Estonian and 60% of Lithuanian respondents use it for warm up. 67.5% of Estonians and 20% of Lithuanians use it for revision and 16.7% of Romanians use it for tests.



(Romania)

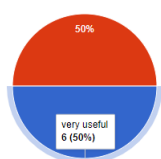


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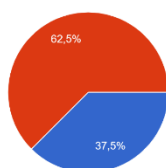
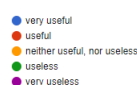


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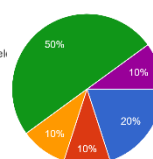
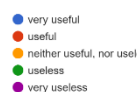
Usefulness. 50% of Romanian, 37.5% of Estonian and 20% of Lithuanian respondents find that the Book creator is very useful. 50% of Romanians, 62.5% of Estonians and 10% of Lithuanians think it is useful. 10% of Lithuanians think that Book Creator is neither useful nor useless. 50% of Lithuanians find it useless and 10% of Lithuanians think it is very useless.



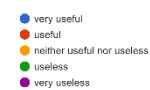
(Romania)



(Estonia)



(Lithuania)



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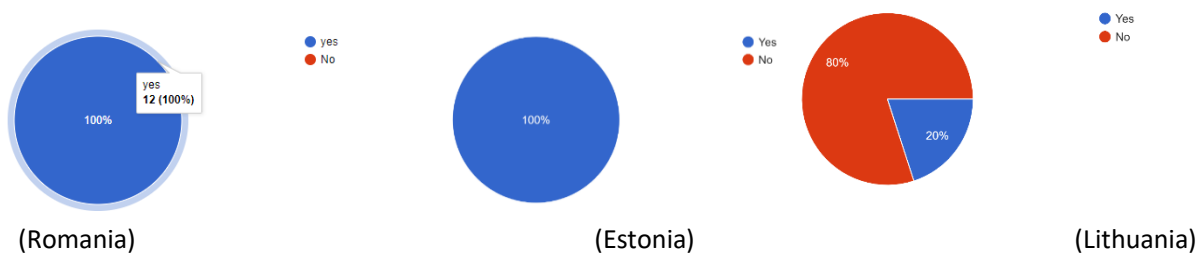
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Recommendation (To Teacher or Student). All of Romanian and Estonian and 20% of Lithuanian respondents think that Book Creator is one of the digital tools that can be recommended to another teacher or student. 80% of Lithuanian respondents do not recommend the digital tool to another teacher of student.



Conclusion. To sum up the responses, the experiences with accessibility, navigability and the thoughts about Book Creator vary from country to country. Nevertheless, teachers in Estonia and Romania find the digital tool to have very good or good quality. Some of the respondents find Book Creator to be useful and all Romanian and Estonian respondents would recommend it to another teacher or a student. The experiences and thoughts about Book Creator may be so different because kindergarten teachers mainly use digital tools with the children's mother tongue, so the content is easier for a child to understand.

3 Learning apps in primary schools

3.1 Data Interpretation of Digital Tool Book Creator

Vendor Description. Book Creator is a digital tool that enables students to create and read multimodal digital books. It is a tool for enhancing student engagement through story creation and multimedia design. When creating their own books, students can either generate their own content (by typing, drawing, or uploading self-made videos, audio files, and images) or they can curate online multimedia resources from the Internet.

Book Creator is an easy-to-use tool for making multimedia digital books in **any subject area from primary school upwards**. Book creation: combine text, audio, video, drawings, photos and other content. Reading: have your book read to you in **multiple languages**, with word highlighting and page turning features. Publishing: share your book online, download it as an ePub file, or print it as a PDF document.



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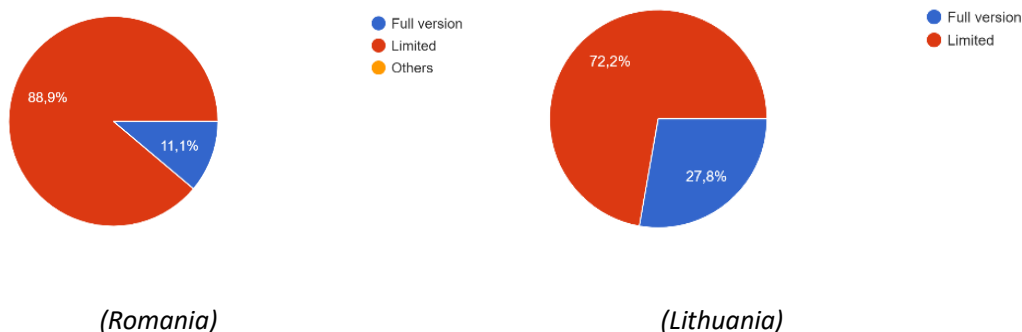
With over 2 million books made every month by teachers and students across the world, Book Creator can bring creativity to your classroom, help engage reluctant writers, and allow students to demonstrate their reading comprehension.

Book Creator was launched in 2011 in Bristol, UK. **Originally available for iPads, the online version makes book creation possible with any device.**

The pricing for the online version of Book Creator is completely different from the iPad app. Teachers can create a free account at ***app.bookcreator.com*** where they will get access to 1 library and 40 books. There is no cost per student, and there is no limit on the number of students that can join a teacher's library. If teachers need more books or libraries, they can choose the paid version. Special pricing is available for schools and districts. Users must pay for the Book Creator application for iPad.

Questionnaire Survey. The primary objective of the survey was to assess the utilization of the digital tool Book Creator in educational activities among primary school teachers in two European countries – project partners from Romania and Lithuania. Additionally, we aimed to gather feedback on teachers' opinions regarding various aspects of the tool, including its accessibility, navigability, quality of content, required user level, cost-benefit ratio, and overall usefulness. The respondents included primary school teachers from Elena Văcărescu Middle School (Romania), Saulės Gojus Kindergarten and School (Lithuania), and Varpelis Kindergarten and School (Lithuania).

Evaluated Version. The first point aimed to highlight the usage of Book Creator in either the full (paid) version or the limited (free) version. Results indicated that 88.9% of Romanian respondents and 72.2% of Lithuanian respondents are using the limited version, while 11.1% of Romanians and 27.8% of Lithuanians are using the full (paid) version.



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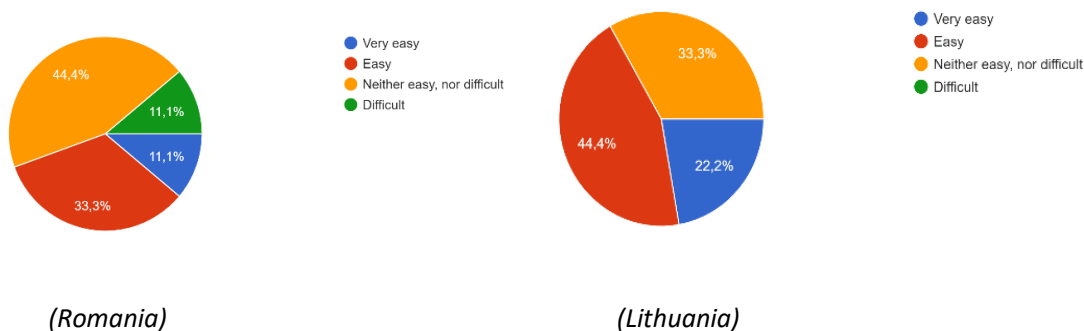
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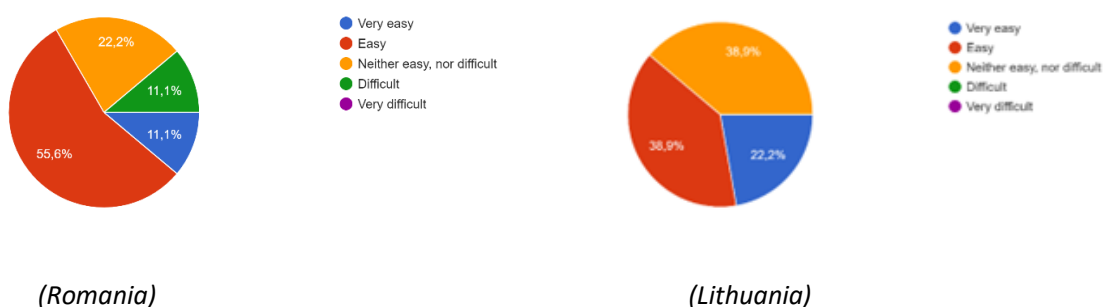
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Accessibility. This criterion aimed to assess how respondents evaluate the accessibility of the tool. 11.1% of Romanian respondents and 22.2% of Lithuanian respondents indicated that the tool has a high level of accessibility, and they can access it very easily. 44.4% of Romanian respondents and 33.3% of Lithuanian respondents claimed that it is neither easy nor difficult to access. 33.3% of Romanian respondents and 44.4% of Lithuanian respondents noted that they can access the tool easily. Finally, 11.1% of Romanian respondents stated that the level of accessibility is difficult.



Navigability. The navigability of the digital tool Book Creator was indicated as easy by 55.6% of the responding teaching staff from Romania and 38.9% from Lithuania. Additionally, 11.1% of the respondents from Romania and 22.2% from Lithuania noted that navigability is very easy. Meanwhile, 22.2% of Romanian respondents and 38.9% of Lithuanian respondents claimed that it is neither easy nor difficult. Finally, 11.1% of Romanian respondents indicated a high degree of difficulty in navigability.



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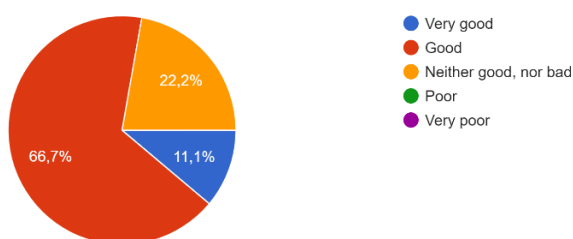
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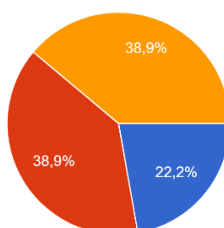
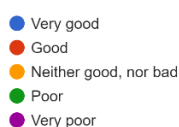
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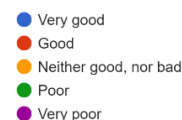
Quality of Content. The quality of Book Creator is indicated as very good by 11.1% of the respondents from Romania, good by 66.7%, and neither good nor bad by 2.22% of them. From Lithuania, 22.2% of respondents claimed that the quality of content of this tool is very good, 38.8% considered it good, and 38% indicated that it is neither good nor bad.



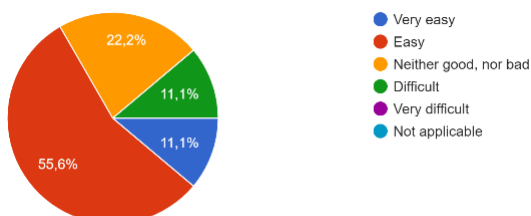
(Romania)



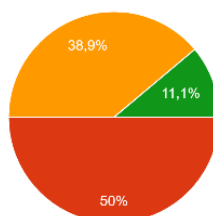
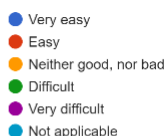
(Lithuania)



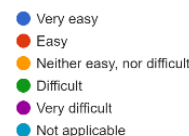
Content Creation. This criterion indicates the degree of difficulty in creating educational materials through Book Creator. Specifically, 11.1% of Romanian respondents claimed that it is very easy, while 50% of Lithuanian and 56.6% of Romanian respondents indicated that the tool offers an easy level of construction of materials. Moreover, 22.2% of Romanian and 38.9% of Lithuanian respondents said that it was neither easy nor difficult. Finally, 11.1% of respondents from both countries mentioned they found it difficult to create content with Book Creator.



(Romania)



(Lithuania)



Recommended User Level. This evaluation criterion reveals the relationship between the user's digital skill level and the use of the tool. It was found that 66.7% of the responding teaching staff from Romania who used the application and 50% of the responding teaching staff from Lithuania who met the same criteria recommended having an intermediate level of digital skills. Additionally, 22.2% of Romanian respondents and 38.9% of Lithuanian respondents considered it to be sufficient to have a beginner level. Finally, 11.1% of respondents from both Romania and Lithuania said that users of Book Creator need to have an advanced digital skills level.



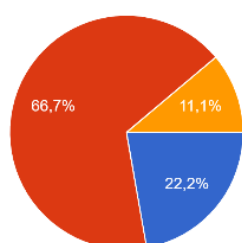
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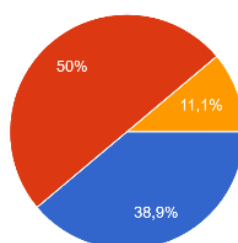
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(Romania)

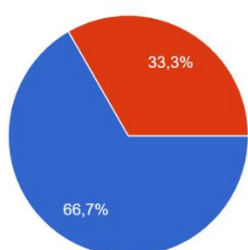
● Beginner
● Medium
● Advanced
● Experienced



(Lithuania)

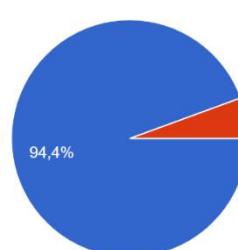
● Beginner
● Medium
● Advanced
● Experienced

Cost Benefit. This evaluation criterion concerns the cost-benefit ratio of Book Creator, highlighting the correlation between the benefits and the use of the application for educational purposes. Specifically, 66.7% of the respondents from Romania declared that this digital tool is beneficial for instructional-educational activities, while 33.3% considered it not beneficial. On the other hand, 96.4% of Lithuanian respondents declared that Book Creator is a beneficial tool for instructional-educational activities.



(Romania)

● Beneficial
● Not beneficial



(Lithuania)

● Beneficial
● Not beneficial

Area of Application. The ranking of the application fields of Book Creator highlighted the fact that 66.7% of Romanian respondents mostly used it for creating newspapers, stories, boards, and books; 55.6% used Book Creator for creating photo collages, portfolios, and presentations; and 44.4% used it for documentation and evaluation. The answers of Lithuanian respondents showed that all of them used Book Creator for creating newspapers, stories, boards, and books, 50% for visualization, and 44.4% for creating photo collages.



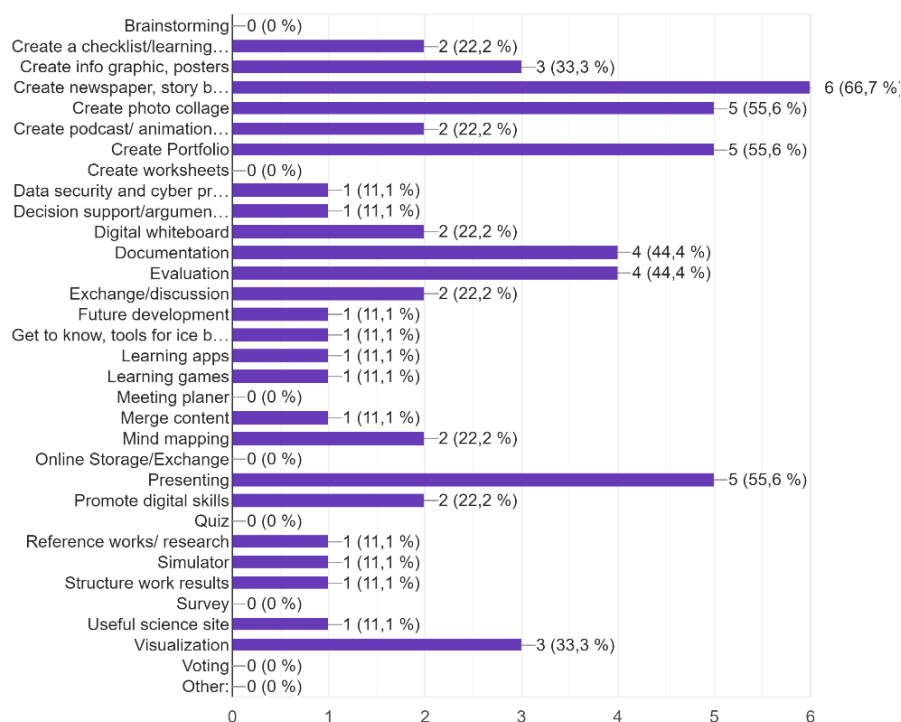
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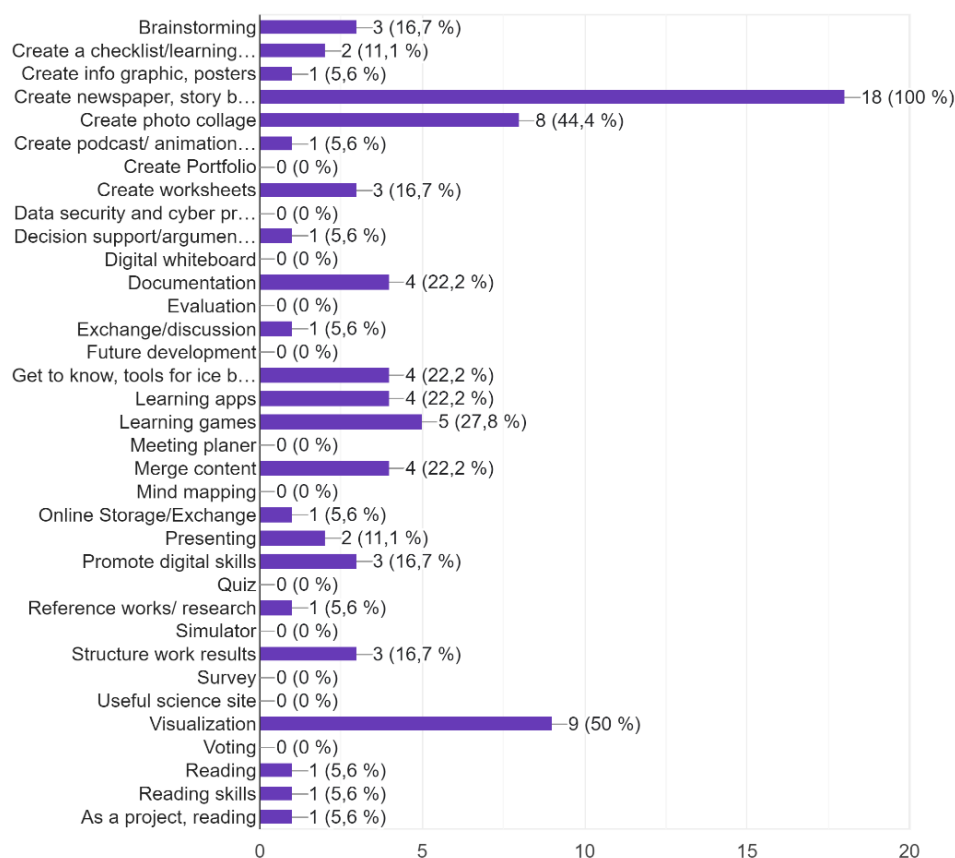
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(Romania)



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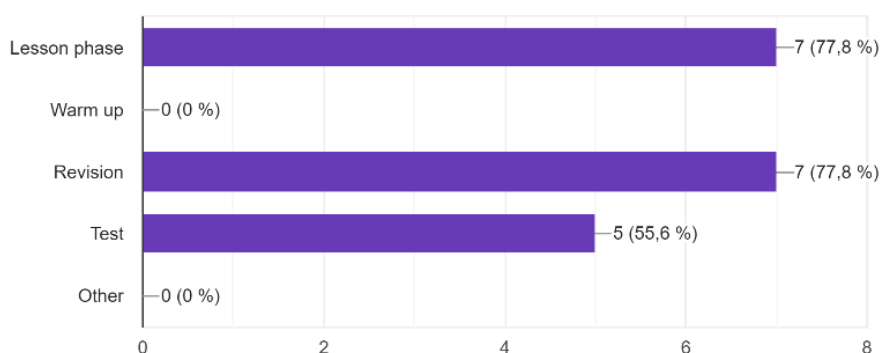
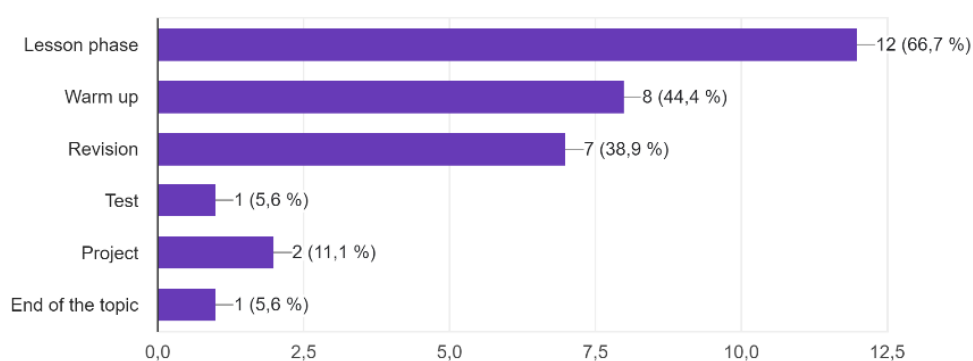
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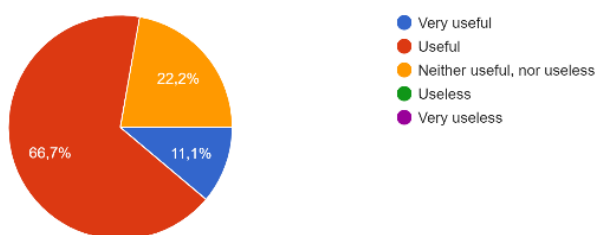


(Lithuania)

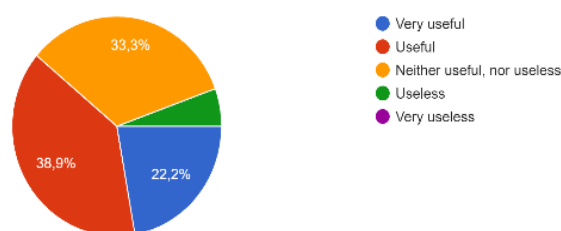
Educational Use. 77.8% of Romanian respondents and 66.7% of Lithuanian respondents claimed that they use this tool for lessons. Additionally, 77.8% of Romanians and 38.9% of Lithuanians use it for revision, while 55.6% of Romanians and 5.6% of Lithuanians use it for testing. Teachers from Lithuania also use Book Creator for project-based learning (11.1%), as a topic wrap-up tool (5.6%), and for warm-ups (44.4%).

*(Romania)**(Lithuania)*

Usefulness. 11,1% respondents from Romania and 22,2% respondents from Lithuania agreed that Book Creator is a very useful tool. 67,7% respondents from Romania and 38,9 % claimed that this tool is useful. Meanwhile, 22,2% from Romania and 33,3% from Lithuania stated that it is neither useful nor useless.

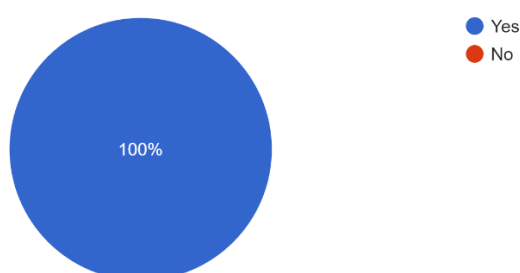


(Romania)

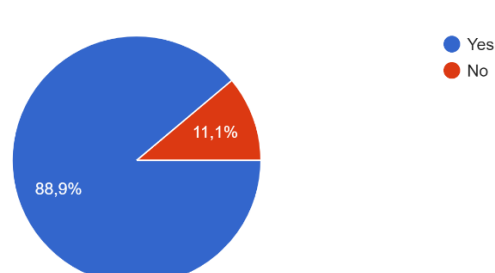


(Lithuania)

Recommendation (To Teacher or Student). The responding teaching staff from Romania concluded that Book Creator is one of the digital tools that can be recommended to another teacher or student with a 100% certainty. Additionally, 88.9% of teachers from Lithuania would recommend the tool to other teachers or students, while 11.1% stated that it cannot be recommended to any teacher or student.



(Romania)



(Lithuania)

Conclusion. Summing up the responses of teachers from both countries, the availability and navigability of the digital tool Book Creator are considered average regarding the needs of primary education. Nevertheless, the quality of the tool's content was well appreciated. The possibilities of creation of educational content provided by Book Creator received high marks; however, this tool requires users to have intermediate digital skills. According to the assessment of the respondents, Book Creator can be useful in creating stories, books, photo collages, and illustrations. It serves as a tool for documenting and evaluating, particularly as one of the final tasks of a topic or project. It also acts as a tool for developing creativity, enabling users to create stories and visualize them in an attractive way. Teachers can integrate Book Creator into their lessons as a part of the lesson, as well as use it for revision or for testing certain skills or knowledge. Most teachers agreed that this tool is useful and can be highly recommended to other teachers or students.



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3.2 Data Interpretation of Digital Tool Magic School

Vendor Description. Magic School AI is a revolutionary platform that strives to streamline the teaching profession by automating the time-consuming task of lesson planning. This potent tool is already making its mark in real classrooms, boasting robust grading capabilities and adaptive feedback mechanisms tailored to individual learning needs. Additionally, it provides educators with AI-powered features for proofreading and summarizing text, employing generative AI, similar to ChatGPT.

With Magic School teachers can: generate a worksheet based on any topic or text; create a multiple choice assessment based on any topic, standard(s), or criteria; have AI write a rubric for an assignment you are creating for your class in a table format; generate original informational texts for your class, customized to the topic of your choice; take any text and summarize it in whatever length you choose; generate a professional e-mail communication to families and translate into multiple languages; write a custom song about any topic to the tune of the song of your choice; generate a draft of a unit plan based on topic, standards and objectives, and length of unit; generate teacher jokes for your class to be the coolest teacher out there; generate a customized thank you note to show your appreciation; generate clear explanations of concepts that you're teaching in class to help student understanding; create a full project plan on the principles of Project Based Learning (PBL); generate a 5E model lesson plan for your science class.

Engage, Explore, Explain, Elaborate, Evaluate; generate original texts for your class that include a custom list of vocabulary to help practice words in context; create a team builder / Ice Breaker for virtual or in-person meetings; generate a text based analysis assignment that includes a writing prompt along with text dependent questions; generate a full assignment based on any topic, including a warmup, academic content, vocabulary, and questions; take any assignment and empower students by breaking it down into manageable steps, fostering stronger understanding and enabling greater independence; generate a list of accommodations for a student who needs support; generate an engaging science lab based on topics and standards of your choice; make your directions more concise and sequential so they're easier to understand for your students; create a student reflection assignment based on restorative practices for disciplinary incidents; take any text and rewrite it with custom criteria however you'd like; generate a professional e-mail communication to colleagues and other professionals; generate original academic content customized to the criteria of your choice; Take any text and have it proofread, correcting grammar, spelling, punctuation and adding clarity; generate a draft of an individualized education program (IEP) customized to a students' needs; take any text and translate it into any language instantly; get a summary of a YouTube video in whatever length you choose; generate a list of vocabulary words based on a subject, topic, or text that are important for students to learn; generate group work activity for students based on a a topic, standard, or objective; generate quote of the day suggestions based on any topic; create a custom chatbot to interact with based on any criteria that you choose; provide sentence starters for any topic, assignment, standard, or objective; generate a newsletter to send to families weekly; generate a Social Emotional Learning (SEL) lesson plan for students in any grade level; generate a table with data of your choice for your class with associated questions; generate ideas about how to help your students build conceptual understanding; generate a syllabus based on information provided about your class for the school year; take any text and scaffold it for readers who are behind grade level or need extra support; generate report card comments with a student's strengths and areas for growth; generate a lesson plan for a topic or objective



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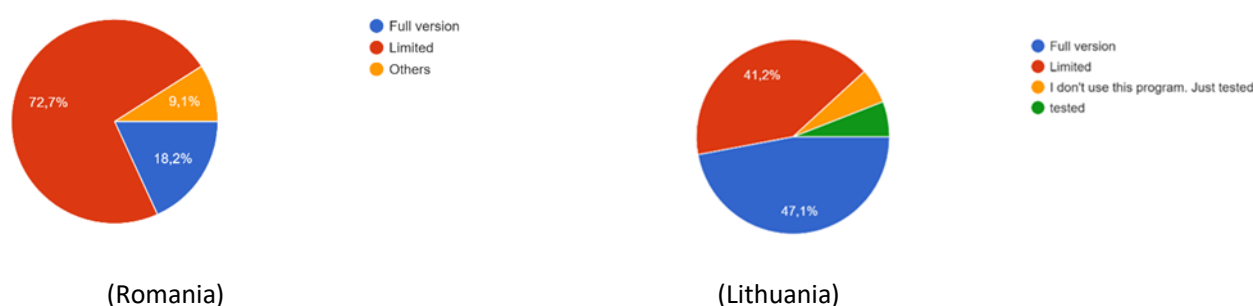
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you're teaching; generate guiding questions aligned to a YouTube video; generate text-dependent questions for students based on any text that you input; based on a custom criteria, have AI give areas of strength & areas for growth on student work; take any text and adapt it for any grade level to fit a student's reading level / skills; unpack any standard into component parts to understand what students need to learn; write a custom math word / story problem based on the concept you're teaching and a story topic; create a choice board for a student assignment based on the principles of UDL; create a jeopardy review game for a fun way to review content with students; generate a social story about a particular event to help a student understand what to expect in that situation; generate areas of strength and suggestions for next steps for a teacher based on a classroom observation; generate a spiral review problem set for any math standards or topics; generate real world examples to increase student investment; generate a decodable text based on the Science of Reading to support early literacy; generate a list of suggestions for behavior intervention based on the behaviors of a student that needs support; generate several ideas that make what you're teaching relevant to your class based on their interests and background; generate a plan for practice for any sport that you're coaching; generate suggestions for a Behavior Intervention Plan (BIP). Magic School is an easy-to-use tool available for **web- app and PC**. Language – **English**.

Questionnaire Survey. The primary objective of the survey was to assess the use of the digital tool Magic School in educational activities among primary school teachers in two European countries – project partners from Romania and Lithuania. Additionally, we aimed to gather feedback on teachers' opinions regarding various aspects of the tool, including its accessibility, navigability, quality of content, required user level, cost-benefit ratio, and overall usefulness. The respondents included primary school teachers from Elena Văcărescu Middle School (Romania), Saulės Gojus Kindergarten and School (Lithuania), and Varpelis Kindergarten and School (Lithuania).

Evaluated Version. The first point aimed to highlight the usage of Magic School in either the full (paid) version or the limited (free) version. Results indicated that 72.7% of Romanian respondents and 41.2% of Lithuanian respondents are using the limited version, while 18.2% of Romanians and 47.1% of Lithuanians are using the full version.



Accessibility. This criterion aimed to assess how respondents evaluate the accessibility of the tool. 9.1% of Romanian respondents and 17.6% of Lithuanian respondents indicated that the tool has a high level of accessibility, and they can access it very easily. 27.3% of Romanian respondents and 35.3% of Lithuanian respondents claimed that it is neither easy nor difficult to access. 36.4% of Romanian respondents and 47.1% of Lithuanian respondents noted that they can access the tool easily. Finally, 27.3% of Romanian respondents stated that the level of accessibility is difficult.



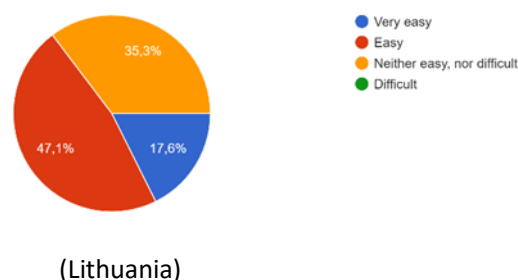
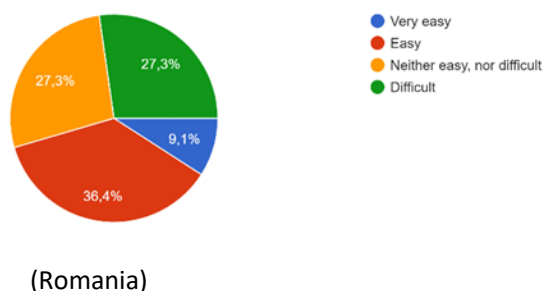
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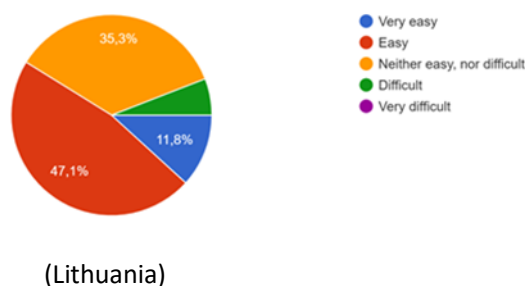
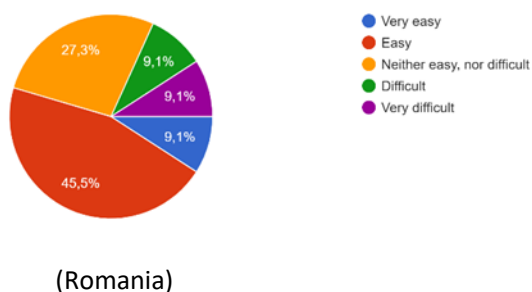
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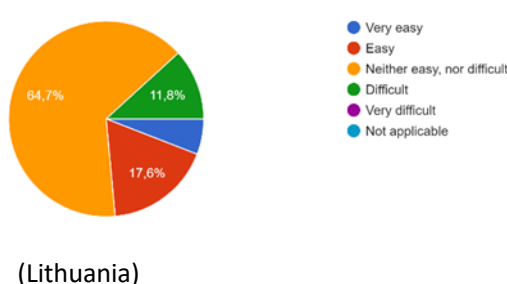
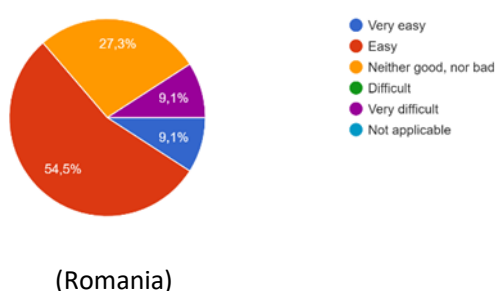




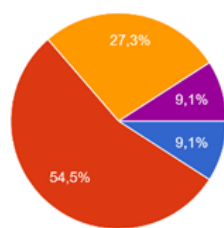
Navigability. The navigability of the digital tool Magic School was indicated as easy by 45.5% of the responding teaching staff from Romania and 47.1% from Lithuania. Additionally, 9.1% of the respondents from Romania and 11.8% from Lithuania noted that navigability is very easy. Meanwhile, 9.1% of Romanian respondents and 11.8% of Lithuanian respondents claimed that it is neither easy nor difficult. Finally, 9.1% of Romanian respondents indicated a high degree of difficulty in navigability.



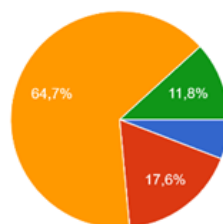
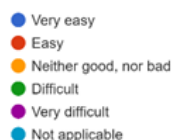
Quality of Content. The quality of Magic School is indicated as very good by 30.4% of the respondents from Romania, good by 45.5%, and neither good nor bad by 9.1%. From Lithuania, 0% of respondents claimed that the quality of content of this tool is very good, 52.9% considered it good, and 41.2% indicated that it is neither good nor bad.



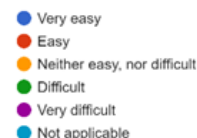
Content Creation. This criterion indicates the degree of difficulty in creating educational materials through Magic School. Specifically, 9.1% of Romanian respondents claimed that it is very easy, while 17.6% of Lithuanian and 54.5% of Romanian respondents indicated that the tool offers an easy level of generation of materials. Moreover, 27.3% of Romanian and 64.7% of Lithuanian respondents said that it was neither easy nor difficult. Finally, 11.8% of Lithuanian respondents found it difficult and 9.1% of Romanians very difficult to create content with Magic School.



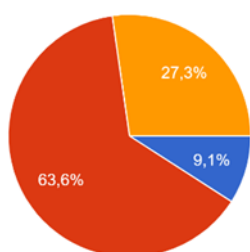
(Romania)



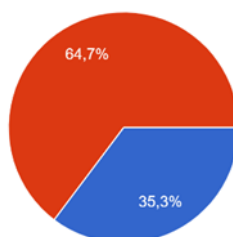
(Lithuania)



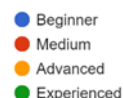
Recommended User Level. This evaluation criterion reveals the relationship between the user's digital skill level and the use of the tool. It was found that 63.6% of the responding teaching staff from Romania who used the application and 64.7% of the responding teaching staff from Lithuania who met the same criteria recommended having an intermediate level of digital skills. Additionally, 9.1% of Romanian respondents and 35.3% of Lithuanian respondents considered it to be sufficient to have a beginner level. Finally, 27.3% of respondents from Romania considered that users of Magic School must have an advanced digital skills level.



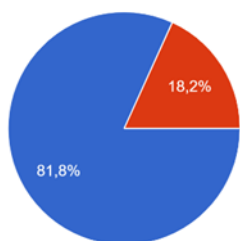
(Romania)



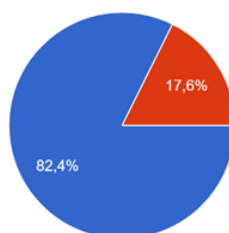
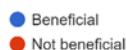
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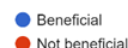
Cost Benefit. This evaluation criterion concerns the cost-benefit ratio of Magic School, highlighting the correlation between the benefits and the use of the application for educational purposes. Specifically, 81.8% of the respondents from Romania declared that this digital tool is beneficial for instructional-educational activities, while 18.2% considered it not beneficial. Similarly, 82.4% of Lithuanian respondents declared that Magic School is a beneficial tool for instructional-educational activities and 17.6% considered it not beneficial.



(Romania)



(Lithuania)



Area of Application. The ranking of the application fields of Magic School highlighted the fact that 63.3% of Romanian respondents mostly used it for evaluation; 54.5% used Magic School for creating a checklist/learning sheet, creating portfolio, documentation, exchange/discussion, reference works/ research; and 36.4% used it for



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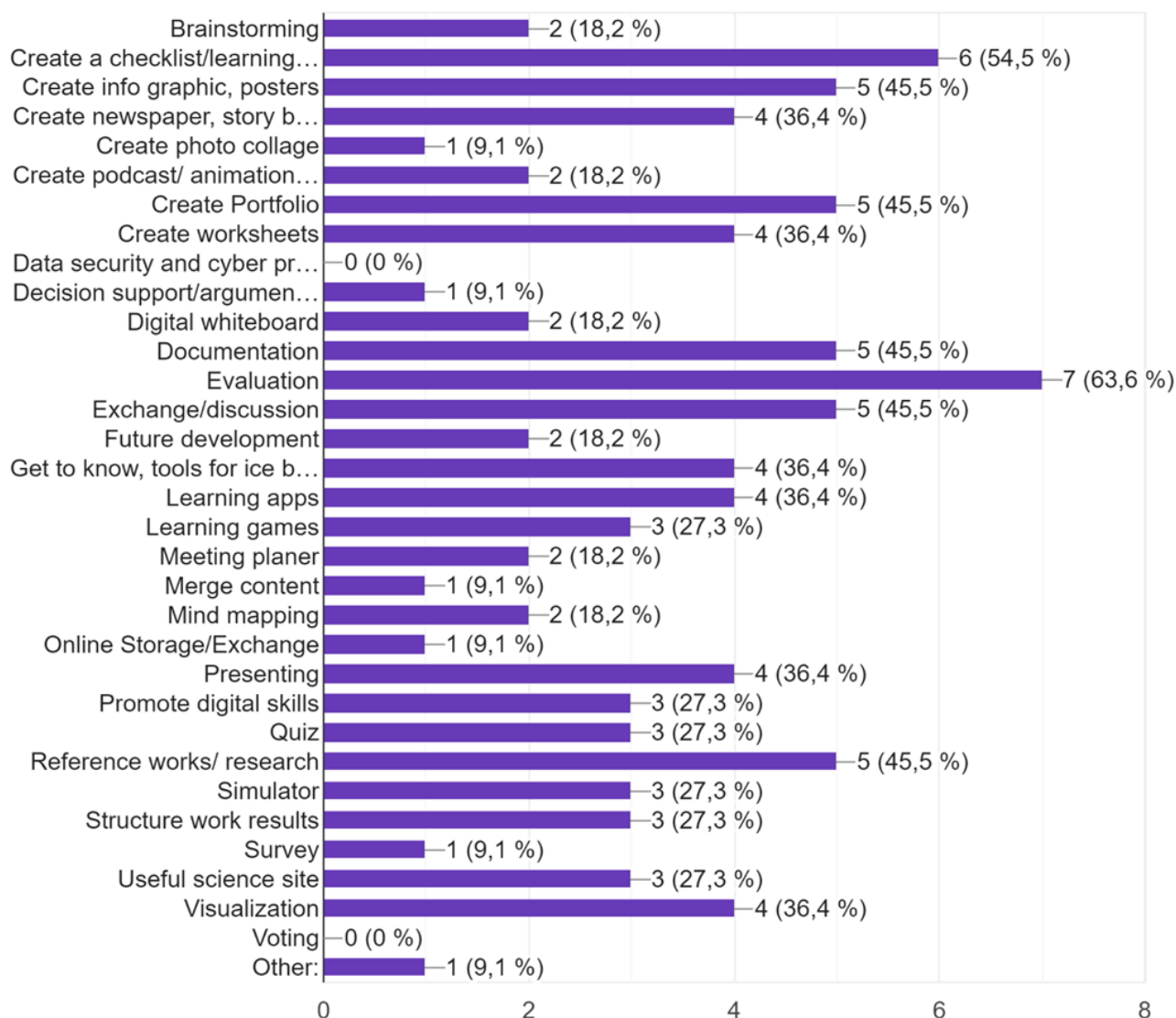
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creating worksheets, presenting, visualization. The answers of Lithuanian respondents showed that all used Magic School for searching ideas for lessons and creating lessons plans, 76.5% for creating checklist/learning sheet, 70.6% for creating quizzes, 52.9% for brainstorming, creating worksheets and 47.1% for evaluation.



(Romania)



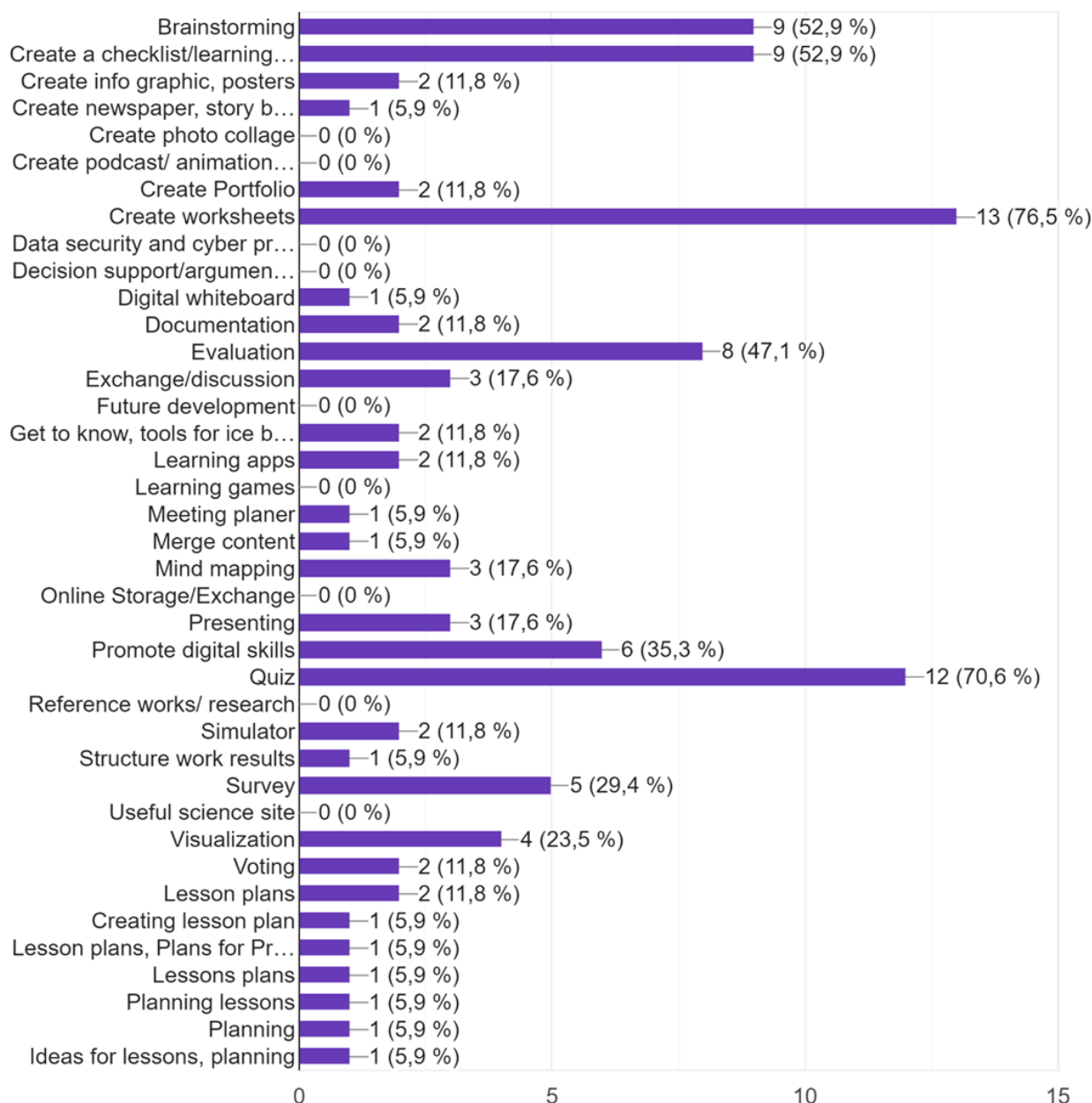
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(Lithuania)

Educational Use. 72.7% of Romanian respondents and 94.1% of Lithuanian respondents claimed that they use this tool for lessons. Additionally, 72.7% of Romanians and 52.9% of Lithuanians use it for revision, while 54.5% of Romanians and 4.1% of Lithuanians use it for testing. 18.2% of Romanians and 52.9% Lithuanians of use Magic School for warm up.



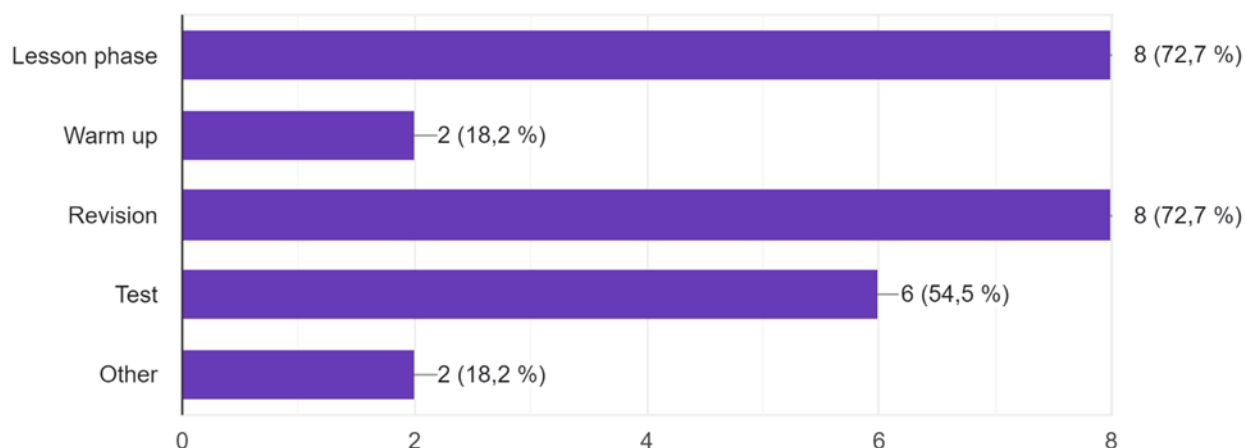
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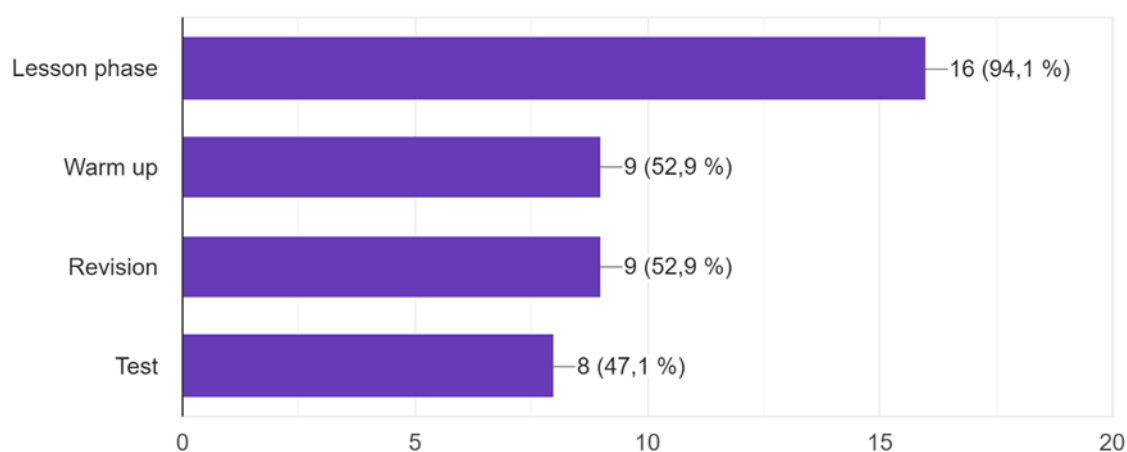
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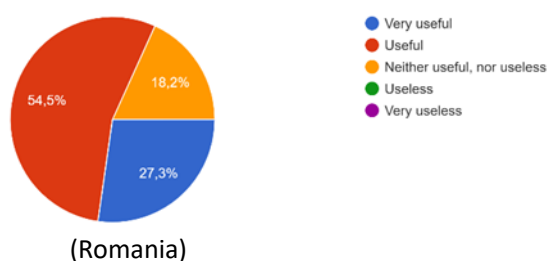


(Romania)

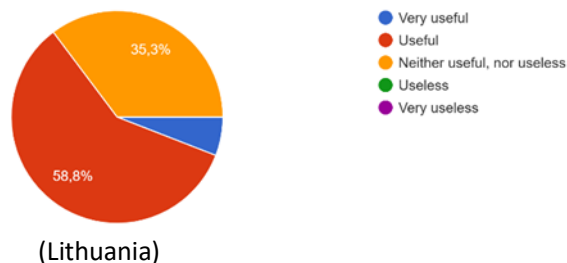


(Lithuania)

Usefulness. 27.3% respondents from Romania agreed that Magic School is a very useful tool. 54.5% respondents from Romania and 58.8 % claimed that this tool is useful. Meanwhile, 18.2% from Romania and 35.3% from Lithuania stated that it is neither useful nor useless.



(Romania)



(Lithuania)



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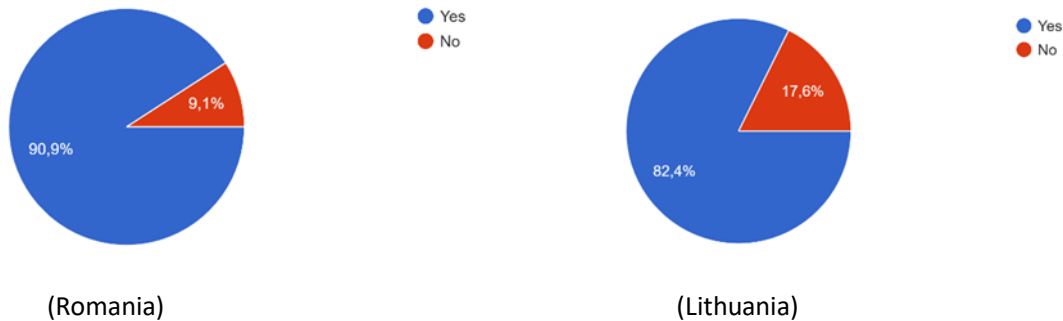
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Recommendation (To Teacher or Student). The responding teaching staff from Romania concluded that Magic School is one of the digital tools that can be recommended to another teacher or student with a 90.9% certainty. Additionally, 82.4% of teachers from Lithuania would recommend the tool to other teachers or students. 9.1% of Romanian and 17.6% Lithuanian users stated that it cannot be recommended to any teacher or student.



Conclusion. Summing up the responses of teachers from both countries, the availability and navigability of the digital tool Magic School are considered average compared to the needs of primary education. Nevertheless, the quality of the tool's content was well appreciated. The possibilities of creation of educational content provided by Magic School received high marks, however, this tool requires users to have intermediate digital skills. According to the assessment of the respondents, Magic School can be useful in planning and creating worksheets. It serves as a tool for documenting and evaluating, etc. Teachers can integrate Magic School into their lessons as a part of the lesson and use it for revision or for testing certain skills or knowledge. Most teachers agreed that this tool is useful and can be highly recommended to other teachers, because it acts as a tool that allows teachers to save time preparing for lessons.



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4 Learning apps in vocational school

4.1 Tested Digital Tools

Vocational schoolteachers have been testing different digital tools, comparing, and evaluating them. These teachers are working in vocational education, at the upper secondary school level and in adult education in Finland, German and Sweden. The comparison focuses on teachers' perceptions of the tools' functionality and usability.

During the comparison and evaluation, vocational schoolteachers noticed that there is a difference between the versions tested. Full version was tested only in Power Point, OneNote, and Forms. Organizations decide what digital tools they prefer, for example Microsoft tools, and these decisions guide the usage of the tools of teachers.

In the comparison and evaluation process, teachers were asked to evaluate cost benefits and data safety. Both matters are difficult to measure, and the evaluation was felt to be complicated. When asked about costs linked to the apps, respondents indicated that this is complicated. Our school systems are very different and our ability to decide on the range of apps is limited. Therefore, both the question of costs and of cost in relation to value for teaching becomes difficult to reflect on or draw conclusions from. In our online meetings we have discussed this.

The question of whether we consider the apps to be safe or not is also difficult. Here, there are shortcomings in our knowledge of data security. There are also big differences in what the schools allow or not. Some school units have major restrictions regarding which apps and which systems may be used and which are considered safe or not. In some schools, teachers have private computers in the classroom, which means that they can decide for themselves which apps they consider reliable. In some schools' private devices are not allowed.

The question concerning the version tested is also tricky. Here we have various opportunities to test the apps. It does not say whether we used private logins or whether we borrowed a login from a student or a friend. In everyday life at schools, this can differ significantly.

In the comparison and evaluation process, it was shown that most of the digital tools are usable with a large range of devices, operating systems, and languages, which made some questions of the evaluation survey unnecessary.

Content creation and quality of content were evaluated. Teachers evaluated that quality of content was good or very good in all digital tools. Content creation was evaluated to be easy and very easy in Mentimeter, Prezi and Kahoot!.



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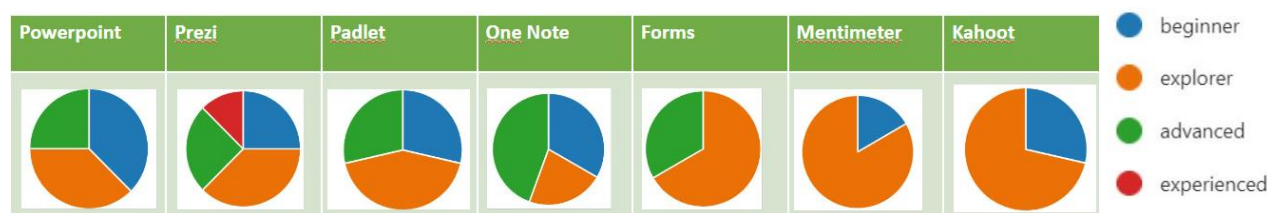
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The two apps that seem to require the most prior knowledge or digital skills are OneNote and Prezi. The app that appears simplest for beginners to use or to learn is Kahoot!. What complicates the answers here is that there can be a significant difference in the ability or difficulty of using the apps, depending on whether the user is creating content or simply consuming or taking what someone else has created.



The comparison shows that different digital tools have different strengths and usage scenarios in education. The choice of tools should be tailored to specific teaching situations and the needs of the target audience. With an increased understanding of the functionality and usage scenarios of the tools, teachers can make more informed decisions when selecting the digital tools for their teaching.

4.2 Areas of application

PowerPoint was mostly used for documentation, visualization, and presentation. Prezi was used for visualization and presentation mostly, and less for documentation. Padlet has also been used for visualization, documentation, and brainstorming. Padlet had the most dispersion when used, which shows that teachers had multiple ways of using Padlet. OneNote was almost only used for documentation. Forms was used for voting, quizzes and surveys. Mentimeter was used for voting, brainstorming, quizzes, and surveys. Kahoot! appeared to be used only for quizzes. This may be due to using the limited version of the app.

According to our survey, Padlet and OneNote were the most versatile apps used among teachers. Padlet was found to be excellent for collaborative group work and it allows students to create digital boards where they can share ideas and resources when collaborating. Padlet can be used as a digital mind map, where students can organize their thoughts, brainstorm, and visually connect concepts. During whole-class discussions, Padlet can serve as a virtual whiteboard, where students can contribute ideas, questions or reflections.

OneNote was seen as a versatile note-taking app. Teachers and students can organize their notes into notebooks, sections, and pages. It is great for keeping track of class materials, lecture notes and research. OneNote allows real-time collaboration, as students can work together on shared notebooks, making it ideal for group projects. In OneNote, students can create digital portfolios showcasing their work, reflections, and growth over time.

Kahoot! seems to have the fewest areas of use. On the other hand, Kahoot! is an app that excels in engaging quizzes and interactive learning. While it may have fewer use cases overall, it is perfect for creative tasks and playful learning experiences. Kahoot! can be used for formative assessments, review games or energizing classroom activities.



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5 Report: Evaluation of Digital Competence for Teachers with SELFIEforTEACHERS

5.1 SELFIEforTEACHERS in the project AIDO

SELFIEforTEACHERS is a free online self-reflection tool designed to assist primary and secondary school teachers in evaluating their digital competencies. By responding to reflective statements, teachers gain insight into how they incorporate digital technology in their teaching and support students' digital skills (European Commission n.d.).

The tool also provides personalized feedback to help teachers identify their strengths and areas for improvement. SELFIEforTEACHERS was developed by the European Commission and is based on the European framework for the digital competence of educators.

In the Erasmus+ project "AIDO", we decided to carry out the SELFIEforTEACHERS test twice, to see if we developed our digital skills under the course of the project. The majority of project participants completed the self-assessment twice, but one partner in the project replaced one participant's results with another's for the second evaluation. There are 17 teachers who completed SELFIEforTEACHERS in this project.

Here we have summarized the areas and questions evaluated in the form we all worked with. These areas can be said to constitute the digital competence a teacher is expected to possess and manage:

Professional Engagement

- Can the teacher use digital technology to improve communication with colleagues and/or students and/or parents?
- Can the teacher use digital technology to collaborate and interact with colleagues and/or other stakeholders in education?
- Does the teacher master digital technology (devices, platforms, and software) and infrastructure (Internet access, local area networks) available at the school to improve education?
- Does the teacher reflect on how she/he uses digital technology in their work and how it is used collectively?
- Does the teacher participate in continuing education to develop their digital competence?

Digital Resources

- Can the teacher use, search, and select criteria to identify digital resources intended for teaching and learning?
- Does the teacher create digital resources that support the teaching and learning objectives?
- Can the teacher modify existing digital resources so that they are consistent with and support teaching and learning objectives, also taking into account copyright rules and license conditions?
- Does the teacher organize digital content that students, parents, and teachers have easy and secure access to, while protecting sensitive information and personal data?



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Teaching and Learning

- Can the teacher design, develop, and implement learning using digital technology to improve the learning outcomes?
- Does the teacher use digital technology to facilitate feedback and reflections, with the aim of further developing teaching and learning for teachers and students?
- Does the teacher use digital technology to promote and improve collaboration between students, with a view to individual and collective learning?

Assessment

- Does the teacher ethically and consciously use new technology to explore new learning methods and materials?
- Can the teacher use digital technology to support formative and summative assessment?
- Can the teacher use digital technology to collect and analyze evidence of student learning processes and learning outcomes?
- Can the teacher use digital technology to provide feedback to students and facilitate the planning of future activities?

Empowering Learners and Strengthening Students

- Does the teacher create access to digital resources and learning activities for all students, with consideration of any contextual, physical, and cognitive barriers?
- Can the teacher use digital technology to manage different learning needs and abilities, by allowing students to work based on their level and at their own pace and follow individual strategies and learning objectives?
- Does the teacher use digital technology to promote active participation and creativity of the students in connection with learning?

Facilitating Learners' Digital Competence

- Can the teacher incorporate learning activities that require students to use digital technology for searching, evaluating, and managing information and data in digital environments?
- Does the teacher create learning activities that require students to express themselves through creating digital artifacts?
- Does the teacher use methods to help students use digital technology in a responsible and ethical way and manage their digital identity, their digital footprint and their digital reputation?



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5.2 Result Presentation

In the SELFIEforTEACHERS tool, users can estimate their ability by choosing the statements that best describe the perceived competence in the above-mentioned areas. After this self-evaluation has been completed, the results are presented to the teachers. These results include an average rating and a summary of the competency level.

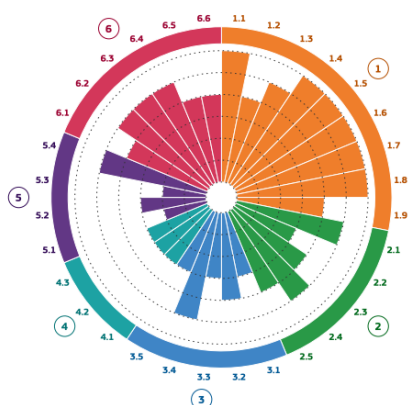


FIGURE 1: DEMONSTRATES AN EXAMPLE OF HOW THE RESULT CAN BE SHOWN TO THE TEACHER AFTER A COMPLETED SELF-ASSESSMENT

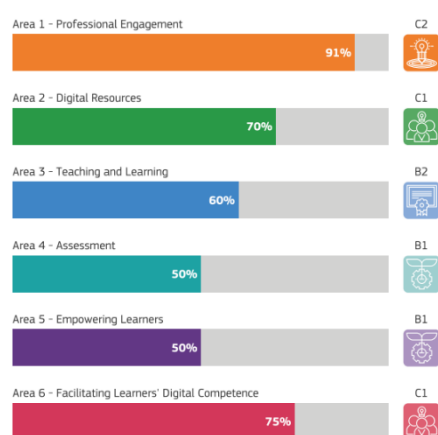


FIGURE 2: THE DIAGRAM DEMONSTRATES AN EXAMPLE OF HOW THE RESULT CAN BE SHOWN TO THE TEACHER AFTER A COMPLETED SELF-ASSESSMENT

SELFIEforTEACHERS also provides a personal competence profile. The tool categorizes your skill level. Each skill level is explained and, as a user, you get to know what characterizes digital competence at your level. You also receive a formative assessment, with the aim of stimulating continued development and learning.

Here follows an example of a description of competence given to a teacher who has reached a certain level. In this case, it is about level A2. Teachers who achieve this level are called "explorers". In the example below, we see that the existing competence is described, and there is also a formative purpose with the feedback.



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“Explorer A2

You have started exploring the potential of digital technologies and are interested in using them in order to enhance pedagogical and professional practice. You have tried using digital technologies in some areas and will benefit from more consistent use. You can increase your competence by using digital technologies in various contexts and for range of purposes integrating them into many of your practices. This will move you to the next step of digital competence the integrator level.”

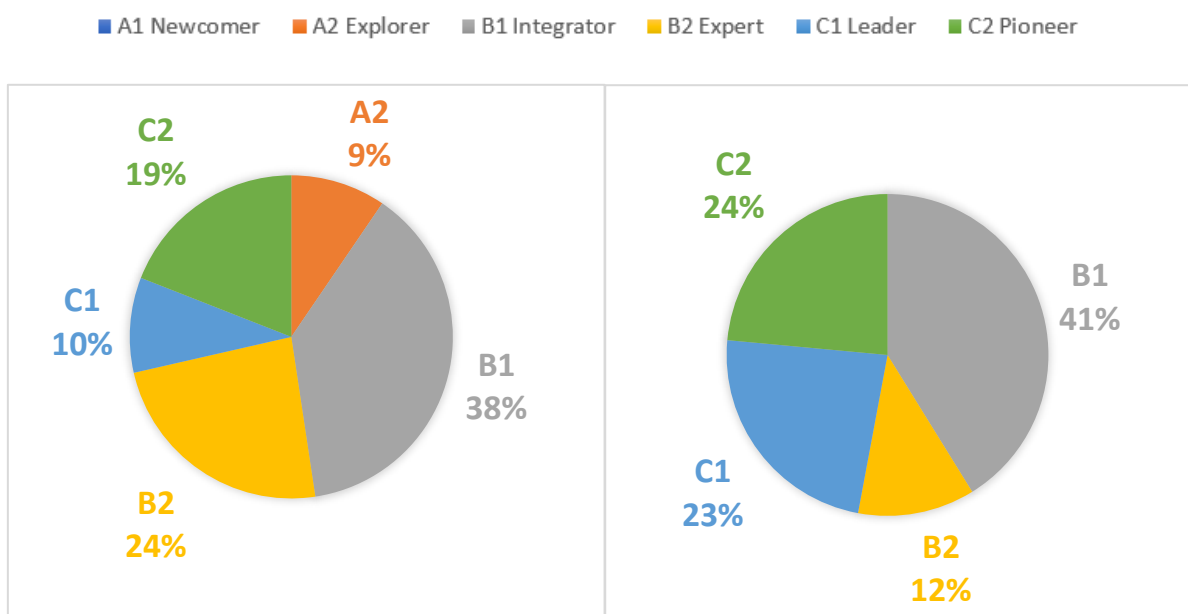


FIGURE 3: THE DIAGRAM ILLUSTRATES THE DIGITAL COMPETENCE LEVELS THAT THE PROJECT TEAM MEMBERS ENDED UP AT AFTER THE FIRST SELF-ASSESSMENT.

FIGURE 4: THE DIAGRAM ILLUSTRATES THE DIGITAL COMPETENCE LEVELS THAT THE PROJECT TEAM MEMBERS ENDED UP AT AFTER THE SECOND SELF-ASSESSMENT.

By the result of the second test, we can see that we, as a group, have developed our digital skills. We can also see that this time no one in the AIDO -group is a "new beginner" anymore and that there are more of us at the higher levels of digital competences called "leaders" and "pioneers".

Summary of the group's competency level after the first test occasion

As a group, we were at level **B1** in the first test, with 47.7 % as the overall result. According to the SELFIEforTEACHERS reports, we at this level experiment with digital technology in various contexts and we try to use it in our everyday work to creatively develop in our teaching role. We are open to new areas of use within digital technology in our work and we can continue this work to find out which solutions work best in different situations. The SELFIEforTEACHERS tool gives us tips on giving ourselves time for reflection and to collaborate collegially around this so that we can reach the next level, namely the expert level. The women in the project received an average score of 46.1 % in the first test. The men in the project received an average score of 51.6 % in the first test.



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5.3 Development of the group's competency level after the second test occasion

By the result of the second test, we can see that we as a group have increased our scores; in other words, we have achieved a higher level of digital competence.

In our first implementation, we ended up with 47.7 % and in the second implementation we ended up with **63.5%**. The analysis instrument also shows that we as a group this time rate ourselves at **B2** level according to the SELFIEforTEACHERS grade. As a group we are called “experts”.

The text below is an extract from the description that characterizes teachers at this second- test- level B2:

“Expert

(B2)

You use a range of digital technologies confidently, creatively and critically to enhance your professional activities. You purposefully select digital technologies for particular situations and try to understand the benefits and drawbacks of different digital strategies. You are curious and open to new ideas, knowing that there are many things you have not tried out yet. You use experimentation and reflection as a means of redesigning, expanding, structuring and consolidating your repertoire of strategies. Share your expertise with other teachers and continue critically developing your digital strategies to reach the Leader level.”

In the second test, the women in the project received an average score of 58.75%. In the second test the men in the project received an average score of 74%. In all areas, we have estimated the digital competence higher than **during** the first implementation. The area we perceive as having developed the most in is Assessment (area 4). Here, we as a group have developed from 43% to 66 %. We therefore feel that we have become better at using digital technology as support for summative and formative assessment and at using digital tools when we analyse our own teaching and give feedback to the students.

Competencies in comparison

All partner countries in the project have increased their competence. The Romanian team has developed the most, according to the SELFIEforTEACHERS result. Our partners in Estonia have received the highest scores in both test 1 and test 2.



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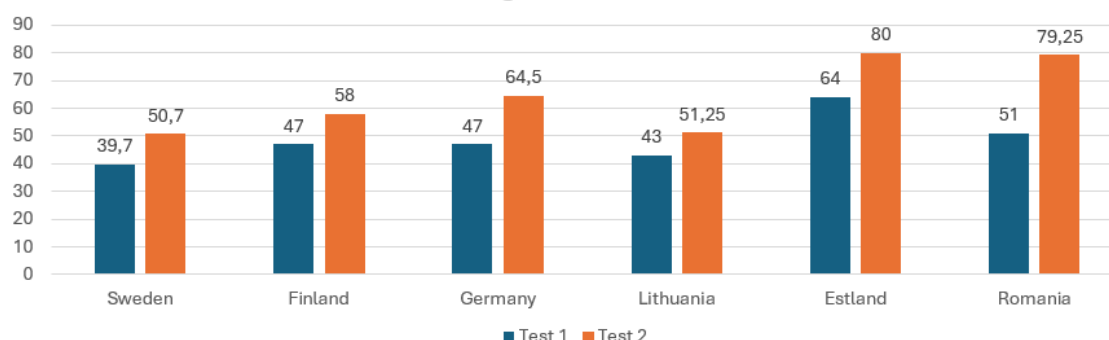
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The digital competence of the different partner countries according to test 1 and test 2



Are we aware of our digital competences?

In the project, we have discussed the difficulty of assessing one's digital competence. The design of the test includes the opportunity to assess your level of competence both at the beginning of the test and at the end. We have compared the results of this estimate with the results that the SELFIEforTEACHERS tool compiles, based on the statements chosen in the test.

The most interesting thing is to see how the participants rated their ability at the beginning of the test and then compare this with the final result. Do we have awareness of our competences or have we under- or overestimated our digital skills?

Discrepancy in the first test

41% had assessed themselves at the correct level.

23.5% of the group had underestimated themselves, the same number of men and women (two each).

(16.5% of all women in the group, 40% of all men in the group)

35.5% had overestimated their ability (three each)

(25% of all women in the group, 60% of all men in the group)

Discrepancy in the second test

58.8% had assessed themselves at the correct level.

35% of the group had underestimated themselves, two men and four women.

(33% of all women in the group. 40% of all men in the group.)

5.9% had overestimated their ability (one women in the group.)



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We can see that more participants have estimated themselves at a correct level according to SELFIEforTEACHERS standard this second time. We conclude therefore that there is an increased awareness of what is expected and what we manage.

One of the reasons why we became more aware and developed our skills is that we worked diligently to test and evaluate various digital tools for our students in our project. We have tried digital tools and evaluated them in forms.

We have continuously had conversations both at live meetings and at online meetings where we discussed the value of various digital tools and therefore broadened our competence and our ability to analyze both the needs and benefits of various digital resources in our work.

At the meeting in Romania, we discussed whether men have better self-confidence in these matters and therefore overestimate their competence to a greater degree. We also discussed whether there are cultural aspects regarding how one estimates one's ability. In the northern countries, we have something we call "Jantelagen" which here possibly functions as a social norm in an evaluation context. "You should not think you can do something better than anyone else." This is a plausible reason behind the low scores that Sweden, and in some extent Finland, have achieved in the test.

The reflection on whether there were gender differences in how we underestimate or overestimate our ability became uninteresting after the second test round.

Suggestions and Tips

The teachers also received suggestions for further development, along with feedback and tips related to each area addressed in the survey.

Example	of	feedback:
<i>"Being aware that students can use digital technologies to express themselves is the first step to start exploring learning activities with that purpose. This way you motivate your students for your subject, increase their active involvement in the learning process - and also foster their skills in creating digital content."</i>		

Here are some more examples of advice and tips received after scanning competencies. Since we as a group reached the B2 level "expert" we have selected advice given to a teacher at that level.



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This is a tip concerning the area “Teaching and learning”:

“Focus on enhancing your digital pedagogy. Select and employ digital technologies in your learning designs based on their affordances, so as to meet teaching and learning aims. Whatever the task at hand, encourage students to be more active in their learning - perhaps via inquiry-based learning, project-based learning, game-based learning, peer and self-assessment, e-portfolios, and using student coaches - and use technology to facilitate and support this. Consider the benefits for design, develop and implement learning with the use of digital technologies to enhance learning outcomes that can result from simulations, digital games, online interactive tools, collaborative environments

Best and worst result the first time:

+ Highest scores as a group were found in Digital Resources (53.6 %)

-Lowest scores as a group were found in Facilitating learning (41.8 %)

Best and worst result the second time:

+ Highest scores as a group were found in Professional engagement (68.3%)

-Lowest scores as a group were found in Empowering learners (56.8%)

Suggestions for activities to improve:

The area where we rated ourselves the lowest as a group in the second test and achieved the lowest score is “Empowering Learners and Strengthening Students”.

The questions concern students' access to digital resources and adaptations that are made, considering, among other things, physical and cognitive barriers.

The competences described are related to the ability to use digital technology to deal with different learning needs and, as a teacher, to encourage active participation in students. As a teacher with this competence, we use different tools and are in different online learning environments to stimulate the students' learning. This is where we as a group have our development area. The tips given to us are that we should, among other things, analyse and evaluate the technology that already exists and is in use by recording experiences and sharing these with colleagues.

We can also try different digital learning situations for students who need extra support. Together with the students, we can work with the tasks that the students did not pass. We should pay attention to digital strategies that promote inclusion.



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5.4 Final Reflection

In the results from test 1 of SELFIEforTEACHERS, we gained insights into our then-perceived digital competence, along with a range of concrete suggestions on how we can improve our group's digital competencies for the benefit of our teaching and the students' learning. The suggestions involved guiding students to compare sources to identify inaccuracies, missing information, or bias. We could also create opportunities for digital communication and collaboration, using tailored tools for various tasks. We should encourage the creation of digital content, such as conducting interviews, taking photos for studies, or designing digital artifacts.

The response from test 1 also emphasized the importance of responsible and ethical behavior online, including identifying and countering misinformation and respecting diversity and different opinions. We were advised that we could develop through discussions about digital behavior and how to respond to negative situations such as cyberbullying or racism. Additionally, we were reminded of the importance of integrating digital tools for problem-solving, such as using aids for brainstorming and visualization to analyze and address issues.

In test 2, it became clear that our perceived competence had changed. In the first assessment, we as a group felt strongest in area 2 (Digital Resources). After our continued work and the second SELFIEforTEACHERS assessment, we now feel most confident in area 1 (Professional Engagement).

Professional Engagement includes activities such as searching for and selecting digital resources for teaching and learning, creating digital resources that support our teaching and learning objectives, and modifying existing digital resources to align with these goals, considering copyright and licensing conditions. It also focuses on organizing digital content so that students, parents, and teachers have easy and secure access while protecting sensitive information and personal data, and sharing digital content with respect for intellectual property rights and copyright legislation.

One conclusion as to why we have developed the most in this area is that we have truly engaged in collegial exchanges and discussions throughout this project. We have actively shared our own strengths and identified areas for development, fostering an environment of mutual support and continuous improvement. Through regular and structured reflection on digital methods, we have collaborated closely with both colleagues involved in the project and those at our own schools, creating a rich dialogue that bridges different experiences and perspectives.

This process has not only inspired us by exposing us to innovative practices and fresh ideas but also facilitated meaningful learning opportunities where we could adapt and refine our approaches. Furthermore, the challenges presented during these exchanges have pushed us out of our comfort zones, encouraging critical thinking and problem-solving, which have been instrumental in advancing our professional growth and enhancing our digital competencies.



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Attachments

Protocols of National Strategies for Digitalization in Education

Estonia

<https://e-koolikott.ee/en>

Finland

Policies for the digitalisation of education and training until 2027:

<https://julkaisut.valtioneuvosto.fi/handle/10024/165248> (checked 28.5.2024)

Media Literacy in Finland: [Guidelines | Medialukutaito Suomessa](#) (checked 28.5.2024)

Key competences for lifelong learning in vocational education

[Key competences for lifelong learning in vocational education and training - eRequirements \(opintopolku.fi\)](#)
(checked 28.5.2024)

Germany

<https://digitales.hessen.de/digitalstrategie/handlungsfelder/digitale-bildung>

https://digitales.hessen.de/sites/digitales.hessen.de/files/2021-06/bildung_web.pdf

https://digitale-schule.hessen.de/sites/digitale-schule.hessen.de/files/2023-10/strategie_digitale_zukunft_2023_einzelseiteten.pdf

Lithuania

Guidelines for digital education“: [https://emokykla.lt/upload/media/public/Kita-aktuali-medziaga/Skaitmeninio%20C5%A1vietimo%20gair%C4%97s%20%20galutinis%20\(2\).pdf](https://emokykla.lt/upload/media/public/Kita-aktuali-medziaga/Skaitmeninio%20C5%A1vietimo%20gair%C4%97s%20%20galutinis%20(2).pdf)

„Digitization of educational content“ -

https://emokykla.lt/upload/EMOKYKLA/Nuotolinis/renginiu_medziaga/ivairus/Ugdymo%20turinio%20skaitmenizavimas.%20DNR%20I%C4%97%C5%A1%C5%B3%20panaudojimas%20mokyklose%202020%20metais.pdf

„How Lithuanian's Nacional Agency for Education is accelerating digital transformacion“

<https://www.taotesting.com/blog/how-lithuanias-national-agency-for-education-is-accelerating-digital-transformation/>

„Strategy for implementing information and communication technology in Lithuanian education“ –

https://www.lrs.lt/pls/inter/w5_show?p_r=855&p_d=7671

Romania

<https://www.edu.ro/smartedu-strategia-privind-digitalizarea-educa%C8%9Biei-din-rom%C3%A2nia-2021-2027>

Sweden

[https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/sweden-national-digitalisation-strategy-school-](https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/sweden-national-digitalisation-strategy-school-0#:~:text=The%20main%20objective%20of%20the%20Swedish%20strategy%20is,of%20knowledge%2C%20equal%20opportunities%20and%20access%20to%20technology)

[0#:~:text=The%20main%20objective%20of%20the%20Swedish%20strategy%20is,of%20knowledge%2C%20equal%20opportunities%20and%20access%20to%20technology](https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/sweden-national-digitalisation-strategy-school-0#:~:text=The%20main%20objective%20of%20the%20Swedish%20strategy%20is,of%20knowledge%2C%20equal%20opportunities%20and%20access%20to%20technology)

Selfie for teachers

European Commission. n.d. *SELFIEforTEACHERS* - *Discover your digital potential.*

[SELFIEforTEACHERS | Home \(europa.eu\)](#) (Downloaded 2024-06-10)



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