



# Digital Destiny

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## Digital Destiny 2.0

### IO1 – Gap Analysis

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March 2022

Final version



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## EXECUTIVE SUMMARY

The project “Digital Destiny” aims to enhance teachers’ digital teaching and educational design competences for Education for Sustainable Development (ESD). In a research-based and empirically tested process, the project partners aim to develop a theoretical framework, an online repository of supporting guidelines, tools and learning materials on ESD and an open online training course, that can be used to train primary school teachers, individually or in a supported course or training. The designed materials can also be utilized by parents who wish to support their children’s learning in collaboration with teachers or wish to realize such learning activities with their children directly.

The project starts with a literature examination and both qualitative and quantitative research to record the needs of the involved stakeholders (teachers, parents and pupils) and best practices. Teachers will be recruited and trained to involve them in the co-creation and pilot evaluation of the outputs of the project. This will allow for the final refinement of the outputs, leading to a collection of empirically tested and research-based, attractive and usable products/material.

The expected outputs of DDESTINY are 4 unique deliverables. This document is part of the first deliverable, namely IO1: A Research Report Bundle that includes:

- a theoretical framework for ESD teaching and learning, based on a literature review, focusing on lack of online/eLearning approaches in this context;
- a best practice review of educational design, didactics and digital tools based on ESD, storytelling and accessibility to learners using (a hybrid form of) eLearning;
- a gap analysis of teachers’ competences on the didactics of online learning online, ESD and digital literacy in the four participating countries; a gap analysis of parents’ and students
- needs regarding learning materials/exercises needed on ESD; and a gap analysis for the seamless participation of students in eLearning settings, especially during the pandemic, e.g. families with more than one child at school age often required to concurrently attend online teaching,
- an analysis of the extent at which parents are involved in their children’s learning when realized in online settings and also their expected or real role while facilitating this process, as well as the type of collaboration (if any) with the teacher.
- a proposal for an educational approach that addresses defined needs, including accessibility of learning for all students and includes alternative strategies to combine online presence with offline activities, with the support of their parents.:

This document corresponds to the gap analysis within IO1.

## ACKNOWLEDGMENTS

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### IO1 – Research Report

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## Gap Analysis

In order to ensure that the DDestiny educational approach and learning materials for ESD teaching and learning will be based on a solid foundation, an in-depth analysis of the context in which we are creating these materials (COVID-19 and urgent need for new educational and inclusive learning approaches, including digital learning), the needs of the target audiences (teachers, parents and students) for digital competences (using technology, designing eLearning materials, delivering eLearning courses), for competences to optimally shape the blending of online and offline didactics and personalized learning (blended learning), and for competences to teach and learning sustainable development using storytelling and approaches which focus on thinking competences' cultivation.

This document regards the Gap Analysis deriving from questionnaires which were distributed to teachers and parents from the partner countries, regarding the core components of the DDestiny approach.

## Methodology

Two questionnaires were designed for the needs of this survey, addressed to teachers and parents. They were translated into the partner languages (Romanian, Flemish, Icelandic and Greek) and then distributed to the stakeholders in online format (Google Forms). Data collection took place from 11<sup>th</sup> November until 10<sup>th</sup> December in the four partner countries. The responses were collected and analyzed mainly via descriptive statistics. In the next subsections the questionnaires are described. Then, the following sections describe and interpret the main outcomes of the two surveys.

### Teachers' questionnaire

The questionnaire comprised of 21 questions, 15 close-ended and 6 open-ended. The main focus of the questionnaires was on teaching practices for the age group that the project addresses and the training needs that appear to emerge out of these practices. Thus, typical demographic information such as age, marital status, etc. was considered irrelevant and not collected. The first question regarded the age of the corresponding student (5-10 years old). Then the questionnaire was divided into 3 main sections, one for each of the main areas which are connected to the DDestiny approach, namely Project based Learning, Digital Storytelling and Blended Learning. Mainly 5-point Likert scale questions were included in order to record information on the frequency that practices connected to the aforementioned areas are applied in their classes. Also, four questions (two open-ended and two close-ended) regarded the parents' involvement in educational activities. Furthermore, three questions concerned online teaching, based also on the experience gained during the pandemic period. Finally, the teachers' perceptions about the UN's Sustainable Development Goals and their position within educational contexts was examined.

### Parents' questionnaire

The questionnaire was divided into two sections. The first comprised of 13 questions, 12 close-ended and 1 open-ended. The main focus of the questionnaires was to understand parents involvement in their children's learning and the effort required by parents to support their children in their school obligations. Two questions concerned their experience from the pandemic period in order to capture their perspectives about blended learning in the following question. The following two questions examined parent interaction with the teachers and three more questions concerned their interaction with other parents regarding their children's learning. For the latter, a specific question was included in the questionnaire. Then, two more questions were connected to their perspectives about their involvement in their children's learning, initiated by the teacher. The final two questions examined their ICT readiness and their perceptions of the skills that should be developed by the school.

Section 2 of the questionnaire included questions regarding their demographic information and their ICT competences.

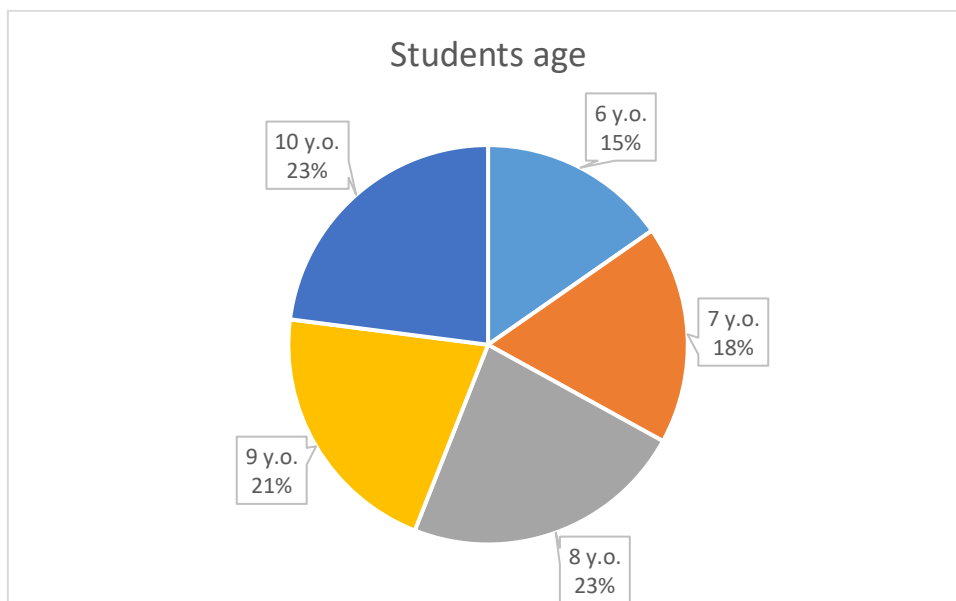
## Results

In this section the results from the questionnaires' analyses are presented. The first subsection concerns the questionnaire addressed to the teachers and the next concerns the questionnaire addressed to the parents.

### Teachers' questionnaire

Overall, 183 people responded to the questionnaires, 68 from Greece, 11 from Iceland, 69 from Romania and 35 from Belgium.

As the pupils' ages, across the countries, was more or less equally distributed we regard this as a representative sample population as is seen in figure 1. An interesting observation is that some of the Belgian teachers declared multiple age groups. This can be explained by the fact that also teachers from method schools, like Freinet, filled in the questionnaire. There, a teacher works with different years of age.



**Figure 1.** Students' age distribution

### Activities in the classroom

Initially, the frequency at which various teaching activities are applied in the classrooms was examined.



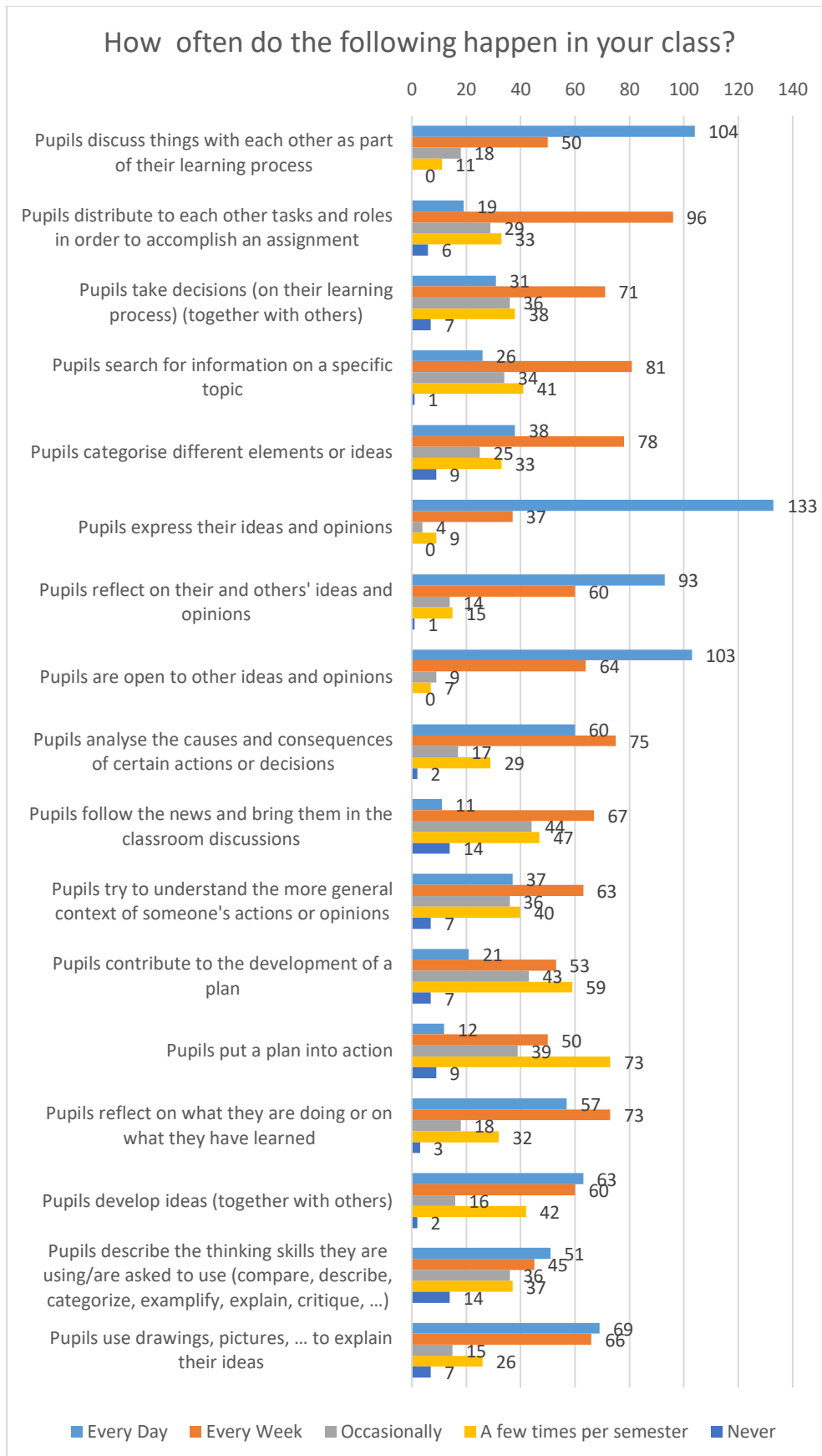
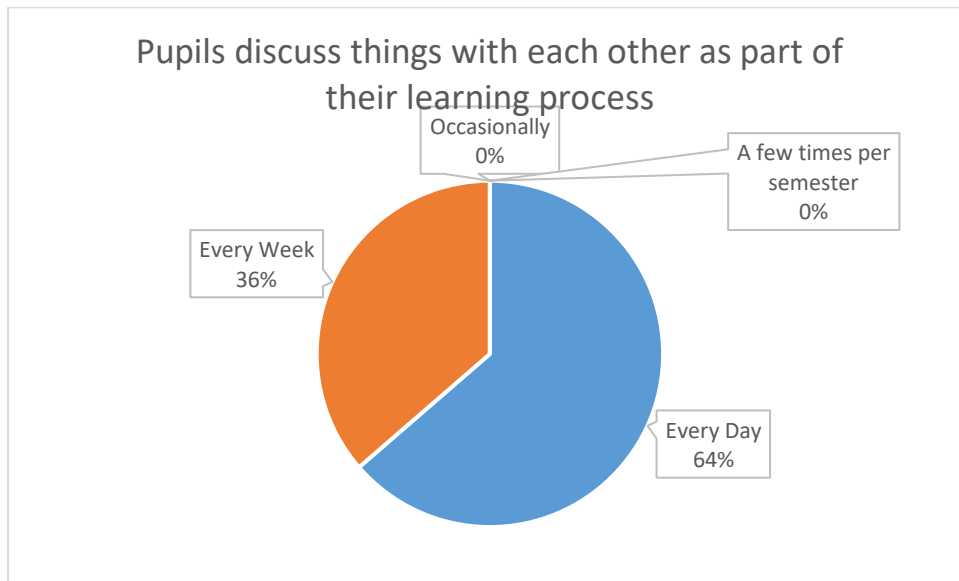


Figure 2. Frequency of learning activities' occurrence

In Figure 2, the answers to the question about the frequency at which certain learning activities take place in the classrooms are presented. The first interesting observation is that only 5/17 activities occur every day (the number of responses selecting the “every day” option was higher than other options and thus the corresponding bar in the chart is longer) for the majority of the cases. The first is using drawing and pictures in order to explain ideas. That is indeed very common, especially for ages under 7-8 years old, as children of these ages are not fully competent in writing and the constitute the 56% of the overall sample. Thus, the vast majority of the teachers use this approach on a weekly or daily basis (66/183 and 69/183 accordingly).



**Figure 3.** Frequency of learning activities’ occurrence

The most commonly used activity is that of pupils expressing their ideas (133/183 daily), followed by pupils engaging in discussions with peers (104/183) and being open to other ideas and opinions (103/183). Overall, these activities seem to concern the expression and exchange of opinions by the students, which is more than expected in a normal classroom. It is interesting to note that in the case of Iceland all the answers to the first statement (pupils’ discussions) reported daily or weekly use, indicating an enhanced pupil interactivity (Figure 3).

An examination of the other options in the sequence are presented in Figure 2. It seems that pupils are not given the opportunity to take initiative in decision making within the learning process. It was reported that students undertake or distribute roles for collaborative tasks and make decisions on their own mainly on a weekly basis. However, the frequency of the answers “a few times per semester”, “occasionally” and “never” are collectively significant. That is an indication that they are mainly (or even have to) following the teachers’ instructions and lead, and not being given the opportunity to actively participate in the decision making in their own learning. Most of the replies refer to weekly activities and thus it is unclear if those correspond to weekly projects or weekly but one-time occurrences in various disciplinary areas. Also, this might be a result of the lack of learning opportunities for decision making or it might be a result of that pupils are considered as ready to do so by the teacher. In any case, the fact is that it doesn’t happen frequently enough, indicating a need to train the teachers on the issue or design/ propose activities of this kind which are easy to integrate in the teaching practice.

Furthermore, the responses indicate that students analyze causes and consequences of certain actions or decisions regularly in all countries. One interpretation could be that this is connected with the pupils having the opportunity to express themselves and their opinions, and their involvement in discussion-based activities. Involvement in discussions requires argumentation (for opinion expression) which at extent requires actions such as cause and consequence analysis or decision making. Up to this point, the distribution is similar in all countries, with minor differences.

For the next set of responses, the status appears to be different. Although many teachers state that pupils follow the news and bring current events into the classroom discussions, only 11 mentioned that this occurs daily, whereas the majority (105/183) apply such activities occasionally, at best. Thus, it is not customary to connect learning with current societal and other trends, based on the news. Similarly, the answers to the question “pupils try to understand the more general context of someone’s actions or opinions” reflect that the occurrence of this is not as frequent as one might expect. Although 100/183 claim to apply this daily or weekly, the majority does so more rarely. Thus, the contextualization of learning which may support the generalization of acquired knowledge and, consequently, the achievement of deep learning, is not occurring as often as it probably should be. Only in the case of Iceland the percentage of “Every day” and “Every week” combined exceed 60%.

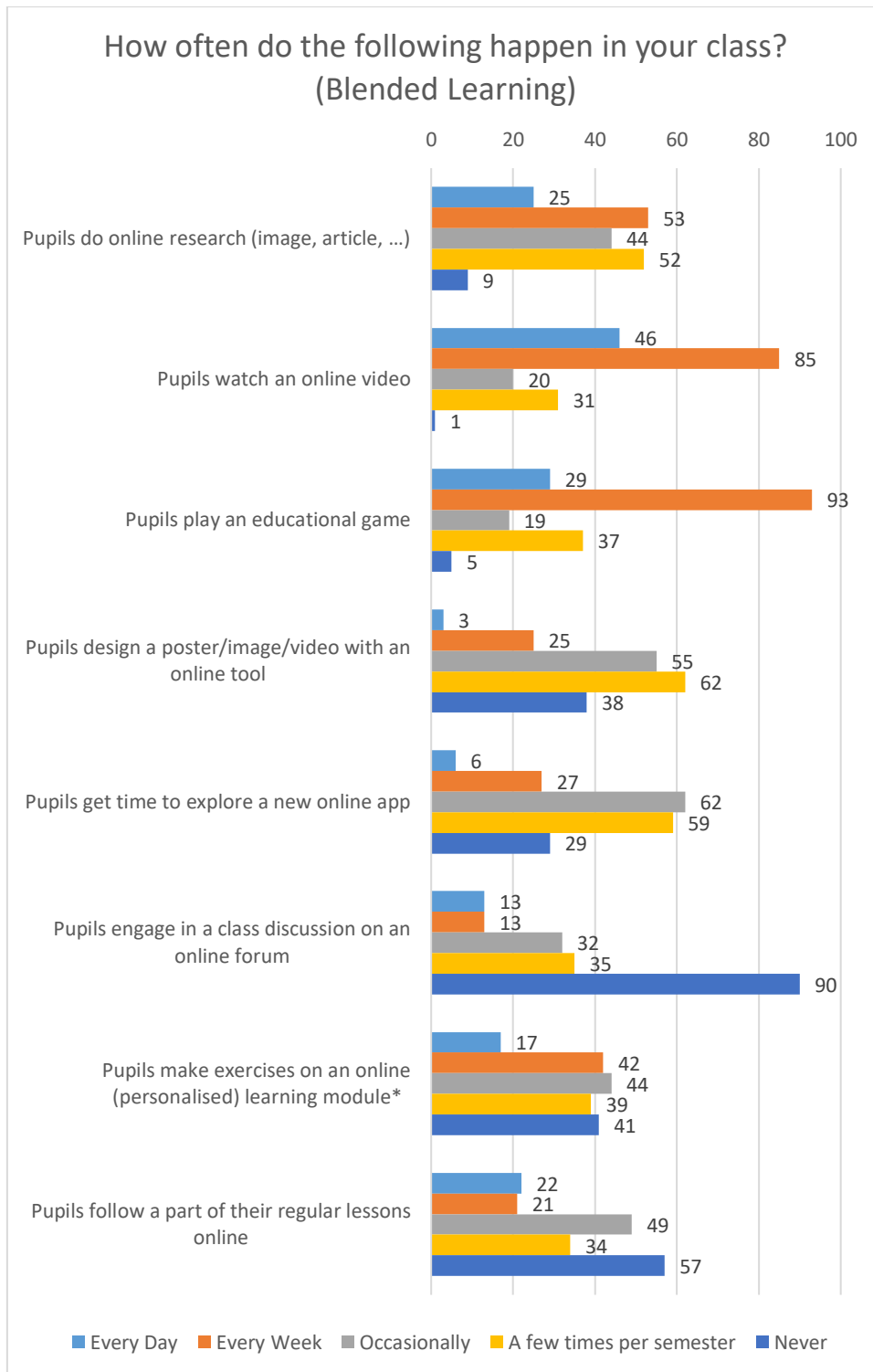
The next two elements (understanding the context of one’s actions and contributing to the development of a plan) are directly connected to contemporary teaching approaches, such as project-based learning. They concern pupils having the opportunity or ability to develop a plan and then put it into action. Both occur less often, with the latter being rarer than the former. Thus, it seems that although pupils are involved in discussions and are open to other ideas and opinions (as stated earlier), the application of that in generalizing or contextualizing acquired knowledge in order to grasp a wider understanding does not occur at an ideal level.

Lastly, pupils seem to be required to develop ideas individually or in group settings quite often (123/183 do so daily or weekly), but at a significant percentage they are not often required to describe their thinking skills. The distribution is rather balanced among the available options, with only 14/183 stating that they never apply such an approach. But overall, 87/183 do so rather sparingly, indicating that pupils are not as often involved in innovative learning activities which require them to explain their thinking. This reflection on thinking processes and/or strategies, according to the literature, facilitates the development of higher order thinking skills in the long term. Thus, it can be considered significant and the responses indicate that it is not occurring in the classrooms as often as it probably should.

Overall, there are no significant differences among the countries, except in only 1-2 activities which teachers in Iceland seem to apply more often. Also, it is evident that the next step in cultivating individualized learning, focusing on higher order thinking competences, which require planning and realization of plans has, not yet been made.

### Blended Learning

The next set of questions focused more on blended learning, and exploring activities that are directly related to this approach. Again, the frequency of occurrence was examined. Figure 4 presents the results.



**Figure 4.** Frequency of blended learning related activities' occurrence

Regarding research for resources, Figure 4 shows that less than half of the respondents (78/183) reported were weekly or more frequent occurrences. Thus, it is something not very commonly used in the classrooms. On the contrary, it is more common for the pupils to watch online videos or play educational games, which are resources available online (mainly) and ready to use “as is” in the classroom. That indicates that teachers prefer such digital materials, although that doesn't provide any information on how these are utilized. An interesting

differentiation among the countries is that in the case of Iceland the value “Every Day” received 0 responses for both types of materials. Also, the value “never” received 0 responses. Thus, in the case of Iceland such resources are utilized on a lower frequency, but they are definitely used. Also, the corresponding frequencies were slightly higher in the case of Romania, indicating that ready to use resources are utilized more than in other countries. Furthermore, in the case of online videos, only 1 teacher reported to never using them and in the case of educational games only 5 provided the same response.

When more active participation is required from the pupils, the situation is different. In the case of pupils being asked to design any digital resources (e.g. posters, images, videos) with online tools (also considering that such tools are usually easier to use) and also exploring new online apps, the highest response is “a few times per semester”. Thus, it is by no means common for pupils (and consequently teachers) to experiment often with new digital resources in an investigative and probably constructive manner (by being required to design and construct digital resources). Also, 29/183 teachers reported that they never apply such activities in their classrooms. Interestingly, only in Romania teachers reported applying such activities every day (3 and 6 accordingly) and none in the other countries. Also “every week” was not provided as a response in Iceland, which means that in this case experimentation with online tools and resources is more limited than in the other countries. Furthermore, the value “never” is slightly higher in Greece, as was the value “every day”. In the case of Greece, the extreme values were more selected than in the other countries, although the overall distribution was not very different. The differences observed among countries cannot be interpreted as connected to the extent of distance learning application in them. The reason is that having the pupils create digital resources is not an activity directly or mainly related to distance education. It is not uncommon to apply such activities during normal school context, if not more often (especially in younger ages, as activities of this kind are usually under the direct supervision of the teacher). For examples pupils can be asked to create a poster or a small video presentation with the help/support of the teacher anytime within their classes, even during normal schooling.

Almost half of the teachers (90/183) declared that they never use an online forum and 35/183 do so a few times only. It is evident that they are not familiar or keen on using online discussions at all. Asynchronous discussions are usually a key component of blended and distance learning approaches, and it is evident that there is a lack of their use. Interesting differentiations are evident among the countries. In the case of Iceland, all the teachers declared that they never use online forums. Of course, Iceland didn’t shift to distance education during the pandemic, but blended learning approaches can be used under other conditions as well. Discussion forums are more often used in the case of Romania, less in Greece and even less in Belgium. Overall, the teachers are not using online forums for class discussions frequently, in most cases not at all.

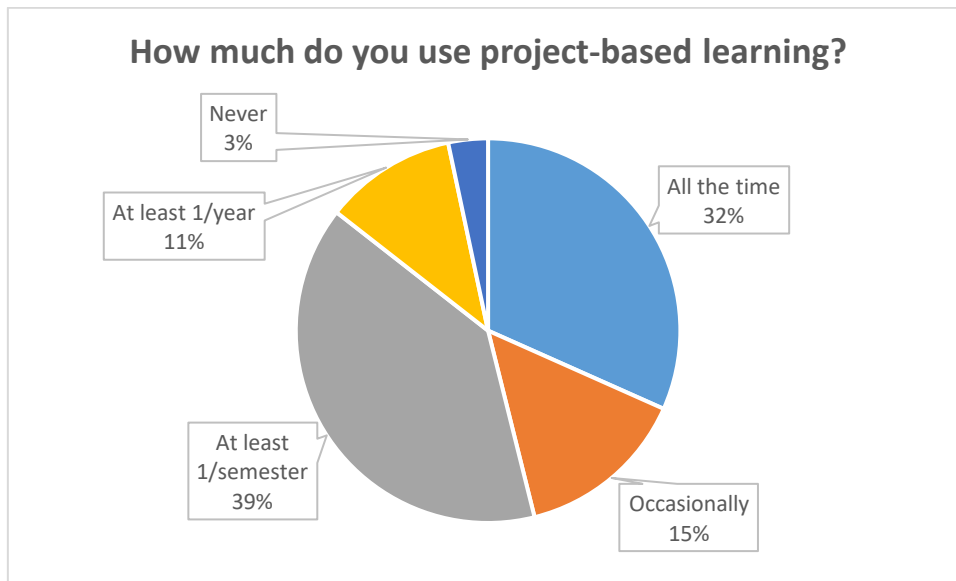
When asked if the pupils make exercises on online modules (personalized or not), the distribution of answers was more equal among the available choices. The reported frequencies were slightly higher in Iceland and Belgium. It is interesting that in the case of Iceland the frequency of such activities is slightly higher, whereas other online activities are not used at all, as aforementioned.

Regarding the last question, regarding pupils following part of their regular lessons online, the vast majority never or rarely do. This never happens on a higher rate in Iceland and on a very lower rate in Romania.

Overall, it is evident that teachers in Iceland engage students in online activities less, whereas teachers in Romania do so more. This can at least partly be explained by the different contexts in which teachers in these countries worked during Covid-19 as there were no full school closures in Iceland.

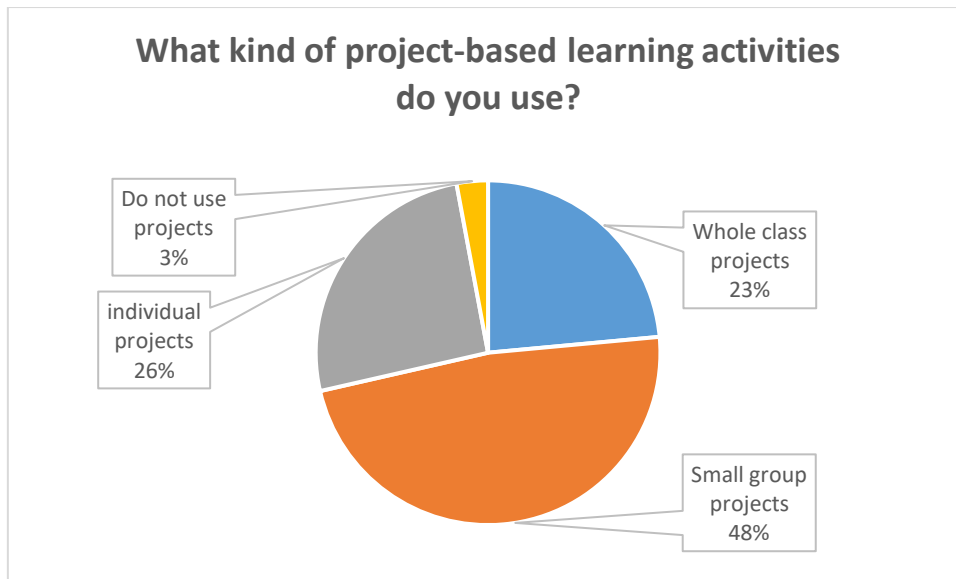
### Project-based Learning

Regarding project-based learning, about half of the respondents stated that they use it often as an approach (Figure 5), whereas only 3% never do. The distribution is about the same in all countries.



**Figure 5.** Frequency of project-based learning approach

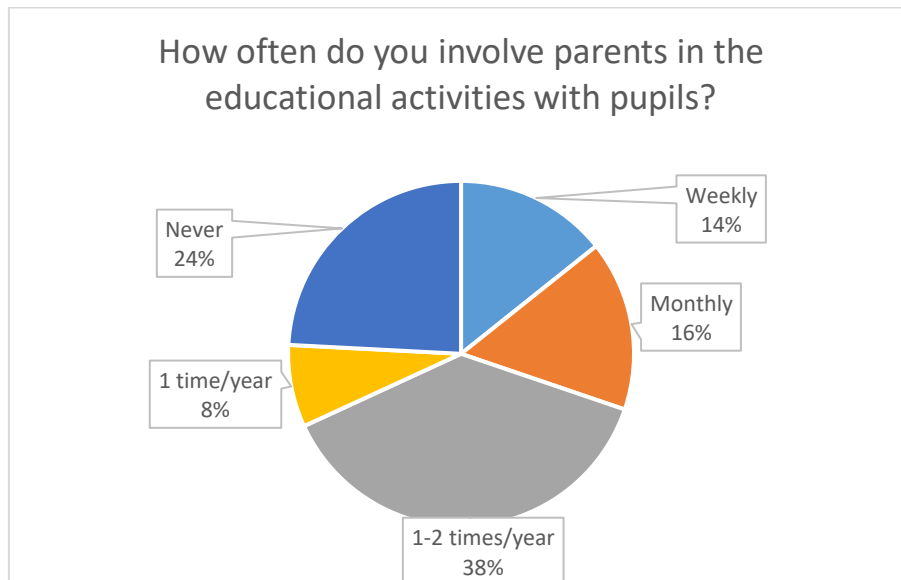
Regarding the corresponding activities (Figure 6), about half of the teachers use small group projects, almost equal percentages use individual projects or whole class projects and only 3% don't use the approach at all. Differences between the countries can be observed in this case. In Iceland, mainly (91%) small-group projects are utilized and partially individual projects (9%). Interestingly, whole class projects are not used. In the case of Romania, the percentage that uses individual projects is slightly higher and about half of the teachers use small group projects. Overall, the use of small-group projects is the most common approach in all countries, with Greece and Belgium utilizing whole classroom projects slightly more than the other countries.



**Figure 6.** Types of project-based learning activities used

### Parents' involvement in pupils' learning

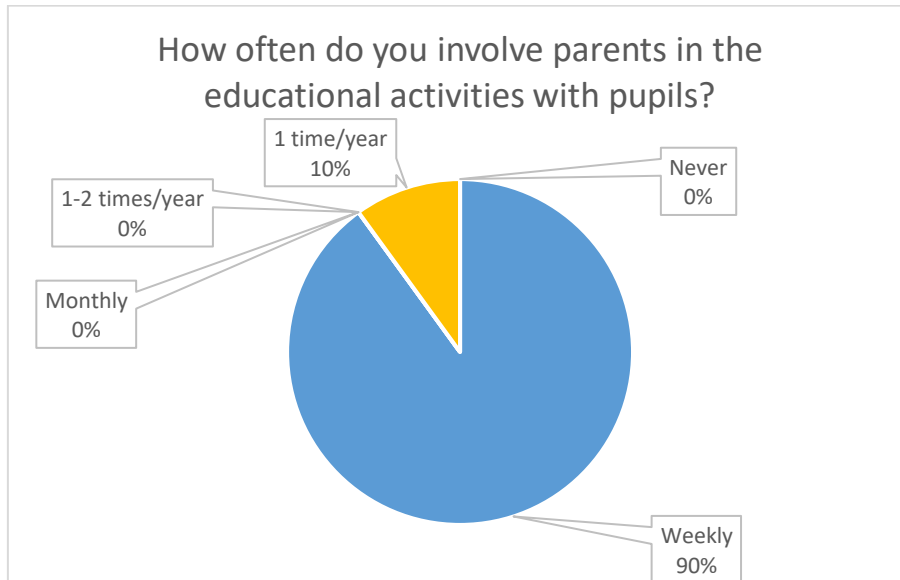
The next set of questions regarded the parents' involvement in their children's learning and educational activities, but also the way that teachers attempt to facilitate that. Figure 7 shows that parental involvement is something that is not a mainstreamed practice in educational contexts. Only 14% state that they try to involve parents on a weekly basis and 16% on a monthly basis. Thus, it seems that parents are not very involved in their children's learning process by the teachers who also do not pursue to increase the corresponding percentages by explicitly involving them.



**Figure 7.** Frequency of parents' involvement

Regarding the country specific measurements, Romania follows the same distribution. In Greece parents are involved at an even lower frequency (51% declared never and 25% 1 or up to 2 times per year). With minor variations, the situation is similar in Belgium. In the case of

Iceland though, the distribution is totally different. As shown in Figure 8, 90% of the teachers declare that they involve the parents on a weekly basis. Interestingly enough, the remaining 10% does so only once a year. Of course, the sample population is small in absolute numbers (and not as a percentage of representation) in this case, but still the observation is interesting both for the difference among the answers and the values.



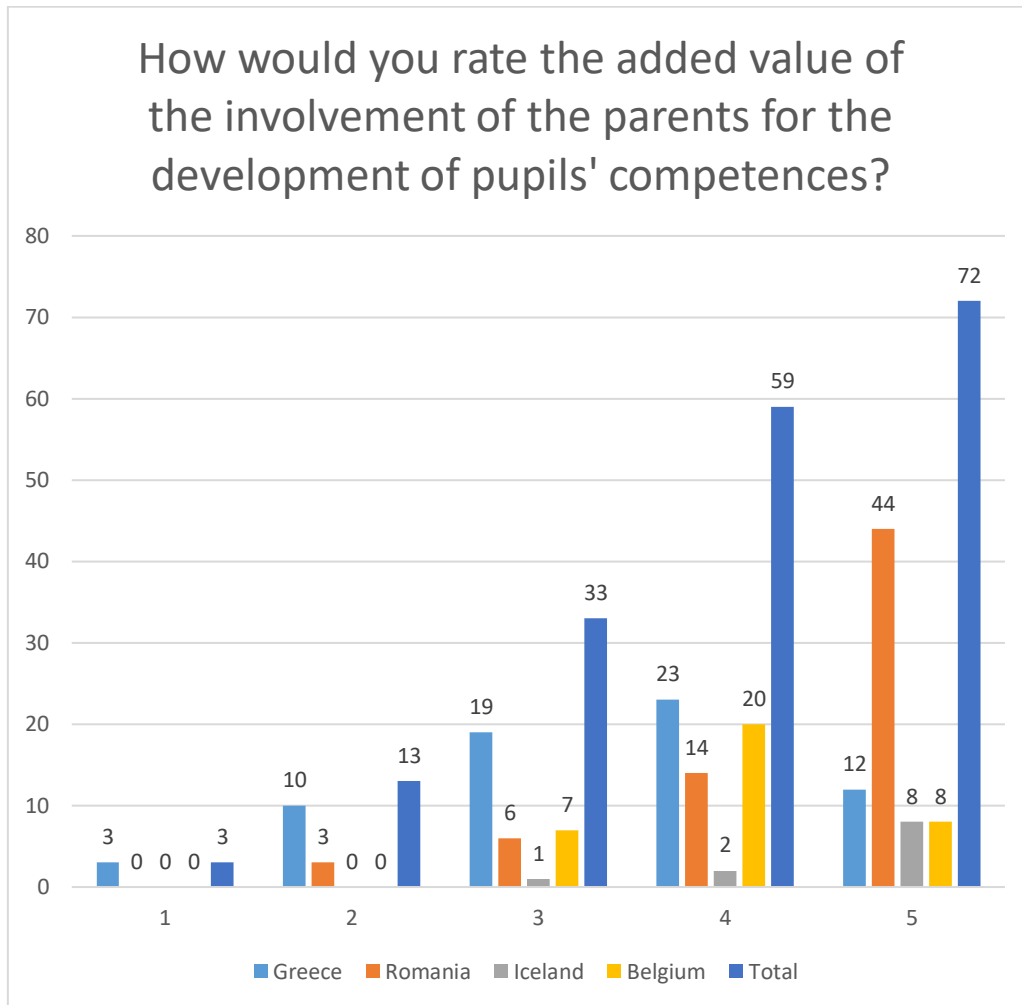
**Figure 8.** Frequency of parents' involvement - Iceland

Proceeding, Figure 9 shows that overall, the teachers highly value the involvement of parents in the development of pupils' competences, as 131/183 declared that they agree or totally agree. This is contradictory to the previous statement regarding the frequency at which they try to involve parents in educational activities. Attempting to interpret this contradiction, one could assume that they don't know how to achieve this or possibly they feel some kind of pressure by the curriculum and the official guidelines, leaving small margin for parents' involvement. Of course, another explanation could be that they are not willing to directly involve parents for various reasons. In any case, it is interesting that they value the parents' involvement, but they do not pursue it. More information would be necessary to elaborate on the issue. More information would be necessary to elaborate on the issue.

In Greece there were just a few answers provided when asked to provide examples of how they involve parents in their children's education. Other than asking children to carry out home assignments with their parents and asking the parent to be involved in extracurricular activities (e.g. a school festival or bazaar), some answers were: "asking parents to provide personal information as interviews", "asking the parents to conduct experiments with their children at home" and "constructing something for a project". Only one teacher mentioned participation in theatrical performances. In the case of Iceland, all the answers were related to homework and assignments. Similarly in Belgium the responses mention homework and various extracurricular events. One differentiated activity mentioned in Belgium by 17 teachers was having parents reading texts in class. These activities concern helping small groups of students learn how to read. Also in Romania, the main involvement of parents was related to school festivities and events, external events (e.g. accompanying children in educational visits) and extracurricular activities. It is important to notice that some teachers reported the involvement of parents in pupils' individual projects. Thus, in Romania the



teacher-initiated parental involvement regarding learning activities (in this case individual projects) is more frequent than in other countries.



**Figure 9.** Teachers' rating of parents' involvement in pupils' development

Then, the issue of parents' involvement in their children's learning and the added value that this could bring was examined. As per country, in Iceland and Belgium all the teachers rated with 3 or higher this statement (Figure 9). In the first case 8/11 teachers selected 5 (totally agree) and in the second 20/35 selected 4 (agree). The distribution in Romania follows the total distribution, shown in figure 8. In the case of Greece, only 12/67 selected 5 (totally agree) and 13/67 selected 1 (totally disagree) or 1 (disagree). The highest selected value was 4 (agree – 23/67). Thus, it seems that the appreciation of parents' involvement seems to be slightly lower in Greece. Based on the experience of UOWM as a department which trains future teachers and interacts with many parents as well, the main reason for that is that the teachers feel somehow trapped by the need to cover the curriculum material, having minimal margin to proceed with more open activities within their teaching. But in any case, the involvement of parents is considered as important in all countries, although not achieved as much.

When asked to freely elaborate on what is needed for the parents to support their children in developing competences, the answers were a bit vague. In Greece most of the answers provided referred to close communication with the teacher, the will to spend time with their children and compliance with the teacher's educational plan. Only one teacher was more

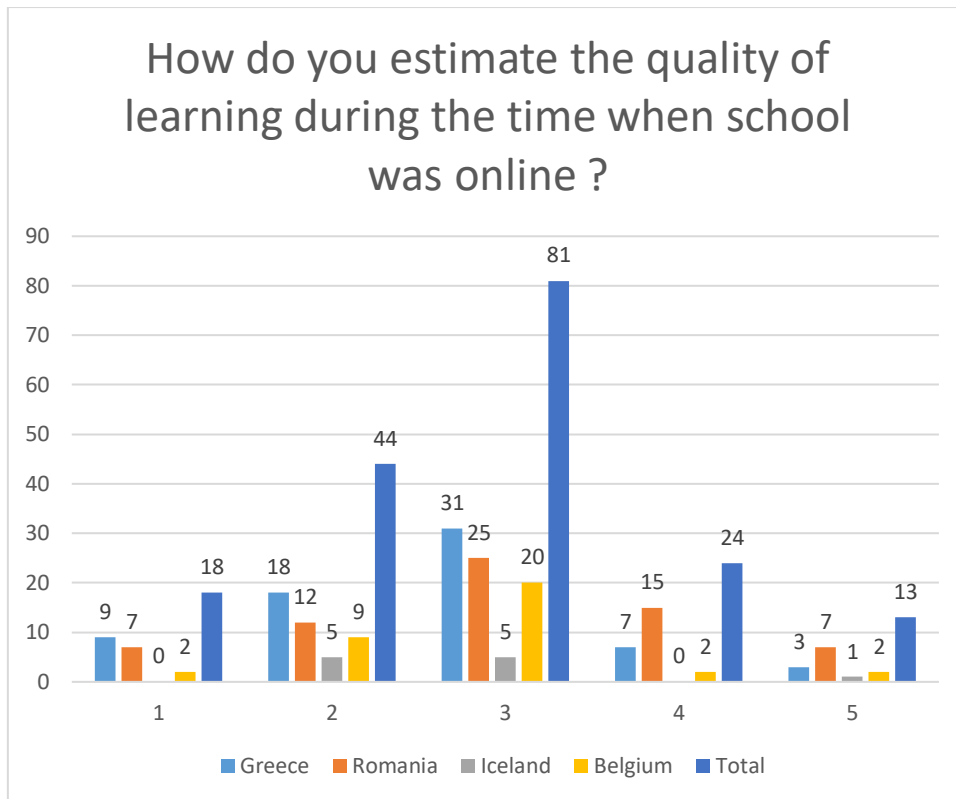
precise, referring to communication issues among parents and pupils, the significance of a secure and relaxed environment for the pupils, the understanding of weaknesses and strengths of the pupils, and also the need to receive proper training in order to support the pupils.

In the case of Iceland, most of the answers referred to the parents monitoring the performance of the pupils via portfolios, supervision of assignments and actions that are related to having an overall overview in an informative manner only. Similarly in Belgium the responses mention homework and understanding the teacher's plan or communicating with the teacher. One teacher provided a more insightful response, by referring to the need of having the parents understanding the usefulness of certain methods for their children's learning and the significance of the role they can play in the matter. Furthermore, he highlighted the effect of less parental involvement in the pupils' efficacy and confidence. Thus, he provided an interesting insight, that of enhancing the teacher-parent communication in order to reassure that the parents fully understand the learning goals that the teacher set, and the methods utilized for meeting these goals. Then they would be able to better support their children's learning, in collaboration with the teacher.

Similarly in Romania, most of the provided answers regarded counseling of the parents by the teachers and better communication with them. Counseling is connected to the statement that emerged in Iceland, regarding the parents' fully understanding the learning goals that are set and the ways that they can better support their children. Towards this direction, some Romanian teachers mentioned "the importance of extracurricular activities".

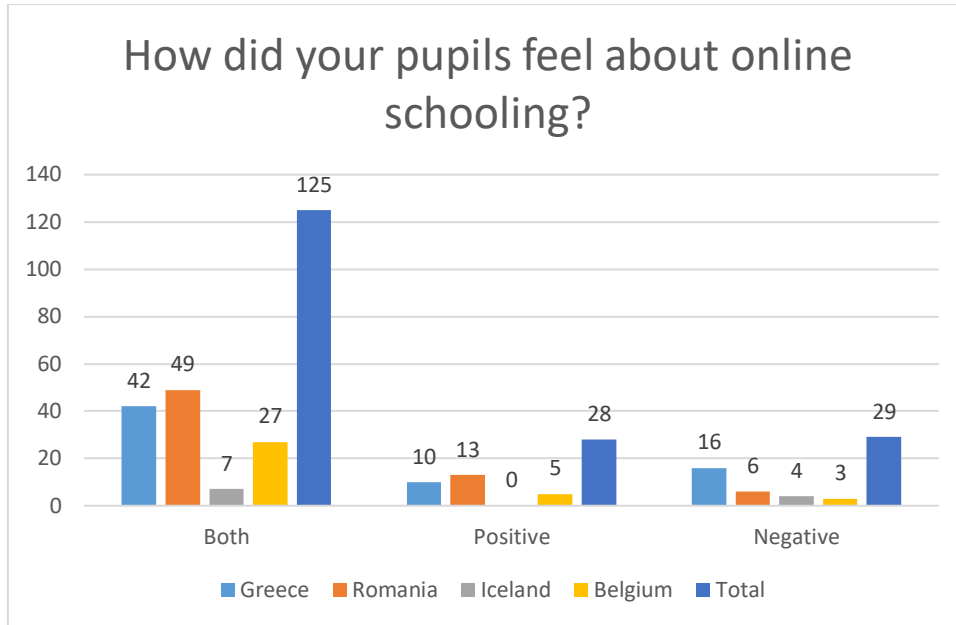
#### During the pandemic [Distance learning](#)

Shifting to the period of distance education, mainly during the pandemic period, figure 11 shows that the teachers' estimation of the quality of learning follows a normal distribution around the middle value, with a slight shift to the left. That means that they do not estimate the quality of learning under those circumstances as high, something that can be indicative of their overall perception about online teaching activities. The reasons for that could be numerous, including the complexity of such activities, the increased preparation that is often needed, the lack of knowledge on tools and methods to evaluate acquired knowledge in online settings, etc. The distribution is quite similar in all the countries, and it raises some questions as there were organized training activities for the matter (e.g. in Greece a nation-wide program was implemented, addressed to all the teachers of all levels). Also, it is important to mention that in Iceland there was no mandatory distance learning during the pandemic and most of the teachers who responded to the questionnaire clearly stated that they didn't participate in distance education. Consequently, the answers they provided can be considered as those reporting their personal perception and attitude towards distance education as a school practice.



**Figure 11.** Teachers' evaluation/perception of the quality of online learning

Regarding the pupils' perception, figure 12 shows that the teachers are rather undecided on how they value online schooling. Most of them chose "both" and almost the same number of responses concerned the "positive" or "negative" value. The distribution is more or less similar in all countries, except Iceland. In this case, no teacher selected the "positive" value, 4/11 the "negative" value and 7/11 "both". This can be interpreted by the fact that Iceland didn't apply distance education during the pandemic and thus their perception could be hypothetical as they might not have any experience on the issue. In Belgium "positive" was selected at a higher rate than "negative", whereas in Greece the results were opposite. In the case of Romania, the results were similar to the total results. Overall, it seems that teachers are rather undecided with a slight tendency towards the negative value. That could be connected with them not being fully aware of the advantages of online teaching approaches or neglecting to comply with that for a number of reasons (e.g. lack of digital competences or corresponding knowledge, lack of motive, etc.). Moreover, it is not certain that they ever received corresponding training (during their undergraduate studies or as professional development training) so as to fully understand what distance education is and how it could facilitate their teaching practices. Finally, their perception of online teaching practices mainly derives from their experience during the pandemic which is characterized by the underlying emergency conditions and thus it cannot be considered as the ideal condition for them to fully understand aspects of online teaching.



**Figure 12.** Teachers’ evaluation/perception of the pupils’ feelings towards online learning

When asked about which elements of distance learning they would keep after schooling returns to normal, in the case of Greece not many answers were provided. A few teachers mentioned “videos” and “multimedia material”. Fewer mentioned the use of Learning Management Systems (LMSs) to share material and the rest of the answers were very generic and vague (e.g. the elements that the teacher decides). It is important to mention that the Ministry of Education in Greece provides official platforms of this kind (e.g. a customized version of eClass) for over 10 years to the teachers of all levels.

In Iceland, only 1 teacher mentioned interactive learning tools generally. The rest stated that they didn’t have distance learning during the lockdown period, and they had no opinions to express.

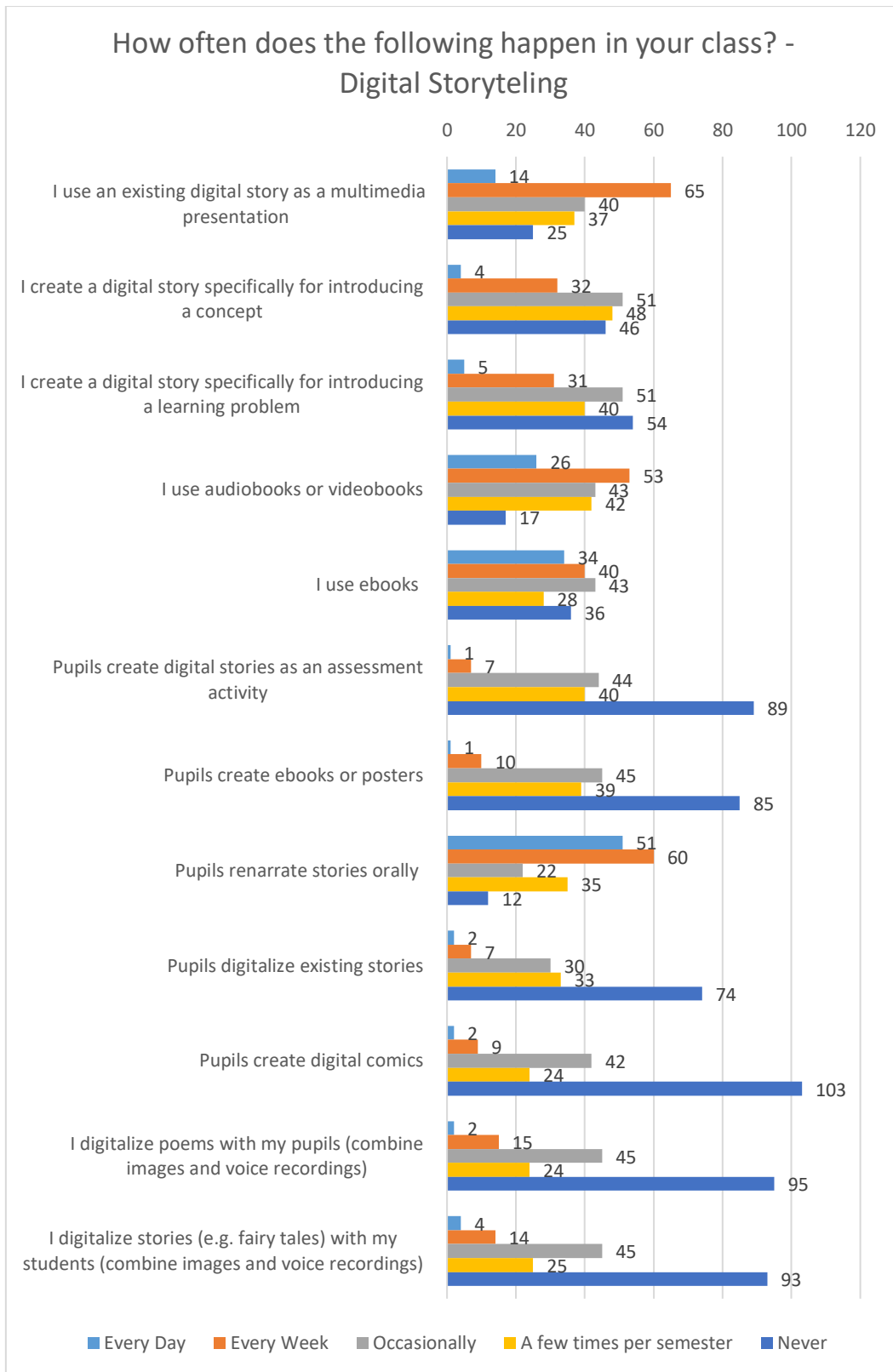
In the case of Belgium, videos were also mentioned. Additionally, 2 teachers mentioned videos in a flipped classroom approach. Interestingly, 11 teachers mentioned personalized learning paths and exercises, along with other intriguing terms, such as contextual learning and immersion exercises through interactive spoken language platforms.

In the case of Romania, the teachers mainly mentioned platforms, digital resources, collaborative tools and the use of technology in general as being very much appreciated. Many answers were provided, naming types of resources, such as digital educational games, videos, other multimedia material and collaboration/learning platforms.

## Digital Storytelling

The next pillar of the survey is that of digital storytelling. A set of questions examined the frequency in which teachers apply corresponding activities in their classrooms, so as to investigate the background on which digital storytelling can be practically applied. Figure 13 shows the results. To begin with, 55% of the teachers do not often use existing digital stories as a multimedia presentation or teaching material. Only 14/183 teachers declared that they do so on a daily basis and 65/183 (35%) on a weekly basis. Thus, it is an approach that is used, but possible not as much as one could imagine, taking into consideration the multimodality of modern society and the way that pupils today are confronted with information in their everyday activities. Research on multimodality shows that pupils are exposed to diverse types of information queues and express themselves in similar ways. Thus, making meaning out of such queues has changed over the years, mainly due to the emergence of technology (with internet being the main technology of reference). EU projects, such as StoryLogicNet (Erasmus+ KA201, Proj. No 2018-1-PT01-KA201-047325) studied the interrelation of Digital Storytelling and Multimodality, creating an insightful theoretical framework on the subject which reaches a similar conclusion.

The distribution is similar in all countries, with Romanian teachers appearing to use digital stories slightly more often (on a weekly basis) and Iceland being the only country in which no teacher selected the “Every day” option.



**Figure 13.** Frequency of applying digital storytelling related activities in the classrooms

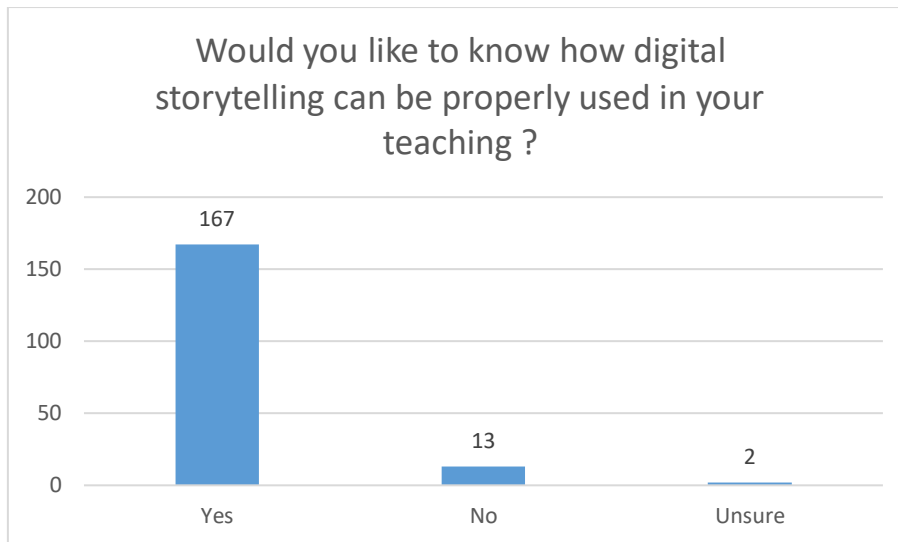
Concerning the creation of digital stories, even fewer teachers do so for introducing a concept or a learning problem. It is important to note that this is one of the ways that digital storytelling is utilized in educational contexts. Thus, the number of teachers who never

(46/183 and 54/183) or rarely (48/183 and 40/183 declared “a few times per semester” whereas 51/183 and 51/183 declared “Occasionally”) try to create their own material of this kind is quite high; combined, about 51.5% of the teachers never or rarely design their own digital stories for teaching or introducing concepts. This could be related to the effort that is required to initially create multimedia material or the lack of necessary digital (and storytelling) competences. Also, it could be a result of insufficient training on the topic, for them to understand the strength of digital storytelling as a teaching approach or the ways that it can be applied in the classroom. It should be noted that teachers from Iceland are applying such activities less than in the other countries.

Furthermore, a similar distribution is observed when teachers are asked if they use other types of multimedia material, such as videobooks/audiobooks and ebooks, with the former appearing to be used less. That could be related with the fact that ebooks are a direct metaphor of normal books in an online format and they see no value in using an ebook (which would also require some kind of electronic device for access) or they might not know how to acquire such books. Thus, it can be considered as expected for the teachers to prefer normal books if they are available. The similarity of the distribution also refers to the case of Iceland, where teachers state that they use such resources less than their colleagues in the other countries.

The results indicate that activities such as pupils creating their own multimedia material, such as digital stories, ebooks, posters and comics or asking them to digitalize existing works with the teacher (poems and stories), are rare. The dominant answer in all cases is “never”. This may be related to the necessary time, the way that such activities can be adopted in their teaching practices or the required digital competences and necessary infrastructure for creating digital material. This is more evident for the teachers in Belgium and even more in Iceland, where “never” was selected from 64% to 91% accordingly. The distribution of answers is similar in Greece and Romania, with Greek teachers appearing more active in this manner. Overall, it seems that there are more similarities between Greece and Romania in the integration of activities which involve the creation or utilization of digital material, whereas in Iceland and Belgium the teachers integrate such activities with less frequency.

Regarding stories, the teachers were also asked to state the frequency at which they integrate them in their teaching practice by asking the students to orally re-narrate stories they work with. In this case, Figure 13 reveals that the teachers apply such activities more regularly. In fact, 51/183 do so on a daily basis. Working with stories is common in younger ages (especially early childhood and early primary education, as the literature indicates). Interestingly, only in the case of Iceland “every day” was not provided as an answer by any of the teachers, indicating a difference overall in the type of stories’ integration in the teaching practice, when compared with the other countries. In fact, 73% stated that they apply this type of activity a few times per semester. Thus, although they seem to work with stories, they don’t utilize the practice of re-narration that often.



**Figure 14.** Teachers' evaluation/perception of online learning

When asked if they would like to know how digital storytelling can be properly used in the teaching practice, almost all the teachers replied affirmatively. Considering that the previous set of questions is directly or indirectly related with the digital storytelling approach and the responses indicated that they are not practicing similar approaches that often, one conclusion can be that they are not familiar with digital storytelling and its application in education and are willing to learn or be trained. This could explain the recorded frequencies.

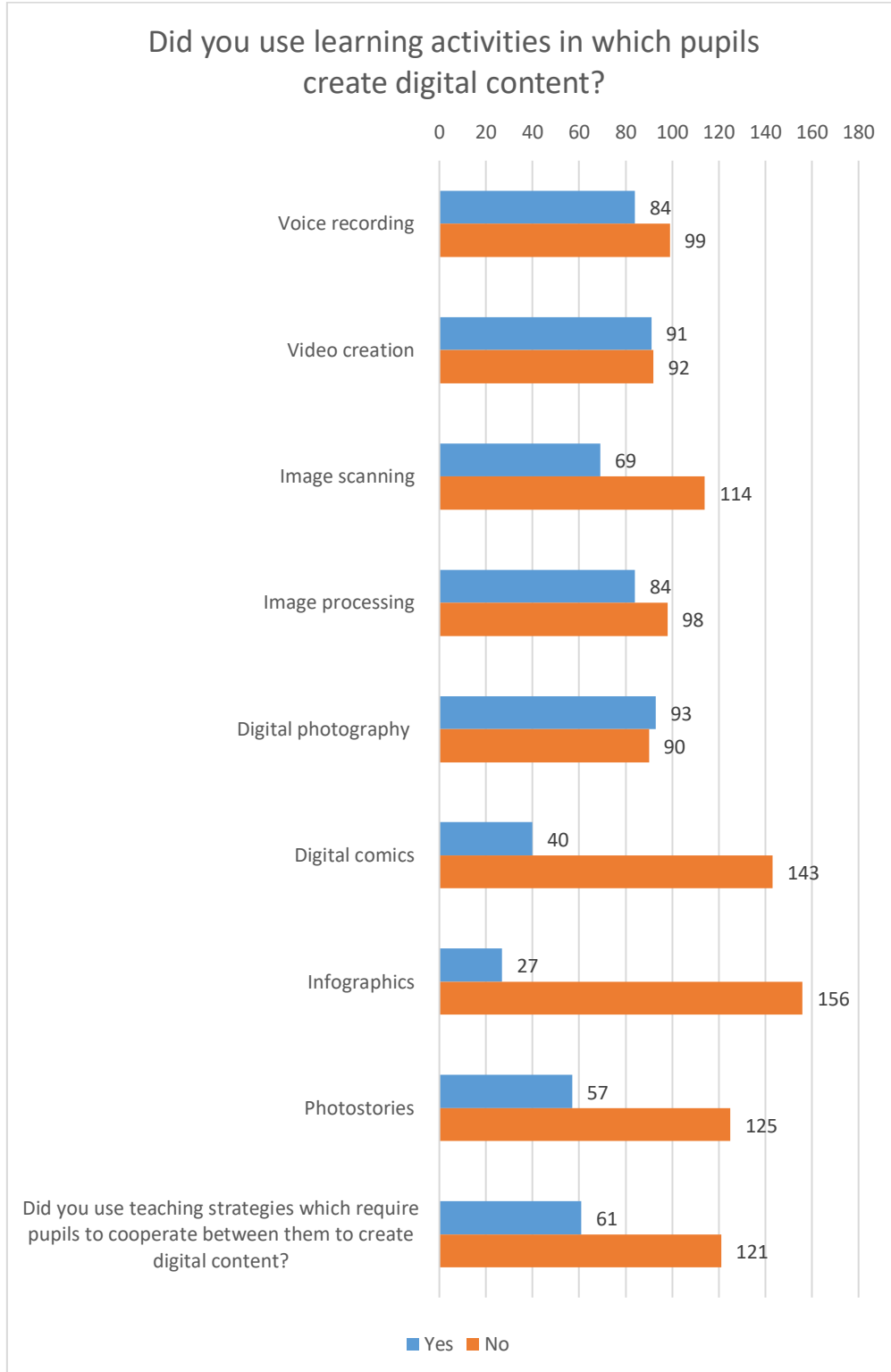
The next set of questions aimed at recording the activities in which teachers involve pupils and require them to create digital content of any kind. These are directly connected with the integration of digital storytelling, especially the case in which the pupils are required to implement their own digital stories. Figure 15 shows the total answers, whereas figures 16 and 17 show the answers "YES" and "NO" per country and in total in order to provide a better insight of the results.

About half of the respondents utilized activities in which voice was digitally recorded and video was created. Interestingly, video creation and voice recording were more used by teachers in Belgium (27/35 and 19/35 respectively). Also, teachers in Iceland used such activities, even if in the previous set of question they seem to apply digital and digitalized activities in lower frequencies that in the other countries.

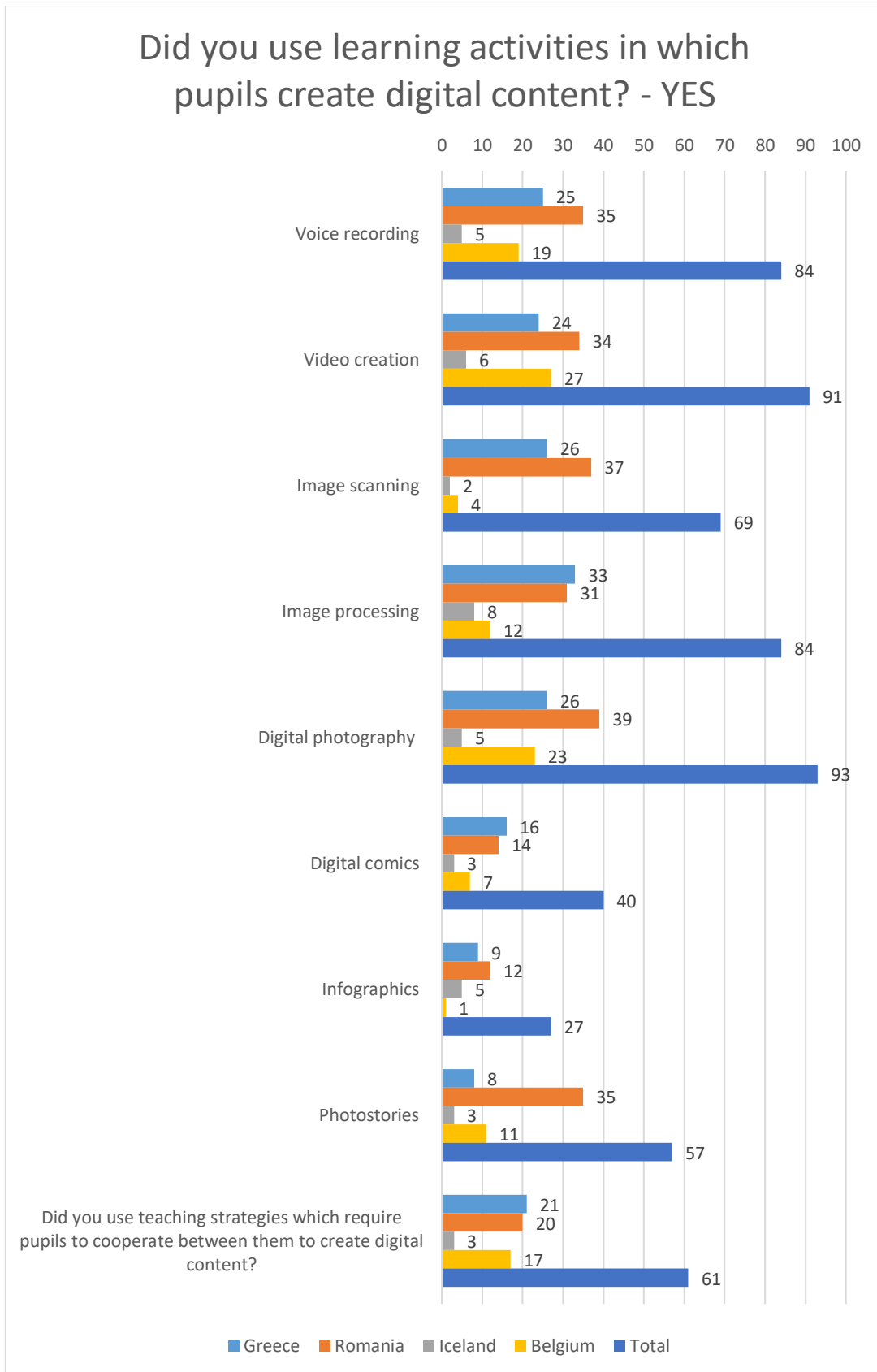
Moreover, the teachers reported processing existing images more than scanning images, indicating that they prefer to find digital images (e.g. online) and work with those instead of creating material themselves with a scanner. On the other hand, about half of the respondents worked with digital photography, thus, creating digital content with easier methods (e.g. taking a photo instead of scanning a drawing). In the case of Greece and Romania, in all three option "no" was selected more than "yes", even if that was marginal (in image processing). In the case of Belgium 2/3 of the teachers reported having used digital photography, whereas the numbers are completely inversed for image processing and almost all of the teachers (31/35) replied "no" to using image scanning. A similar distribution was observed in Iceland. These numbers can be interpreted in multiple ways. For example, it is not as common for schools to have scanners, although nowadays smartphones are used instead by many people. Also scanning requires an image to be physically created beforehand, either through drawing



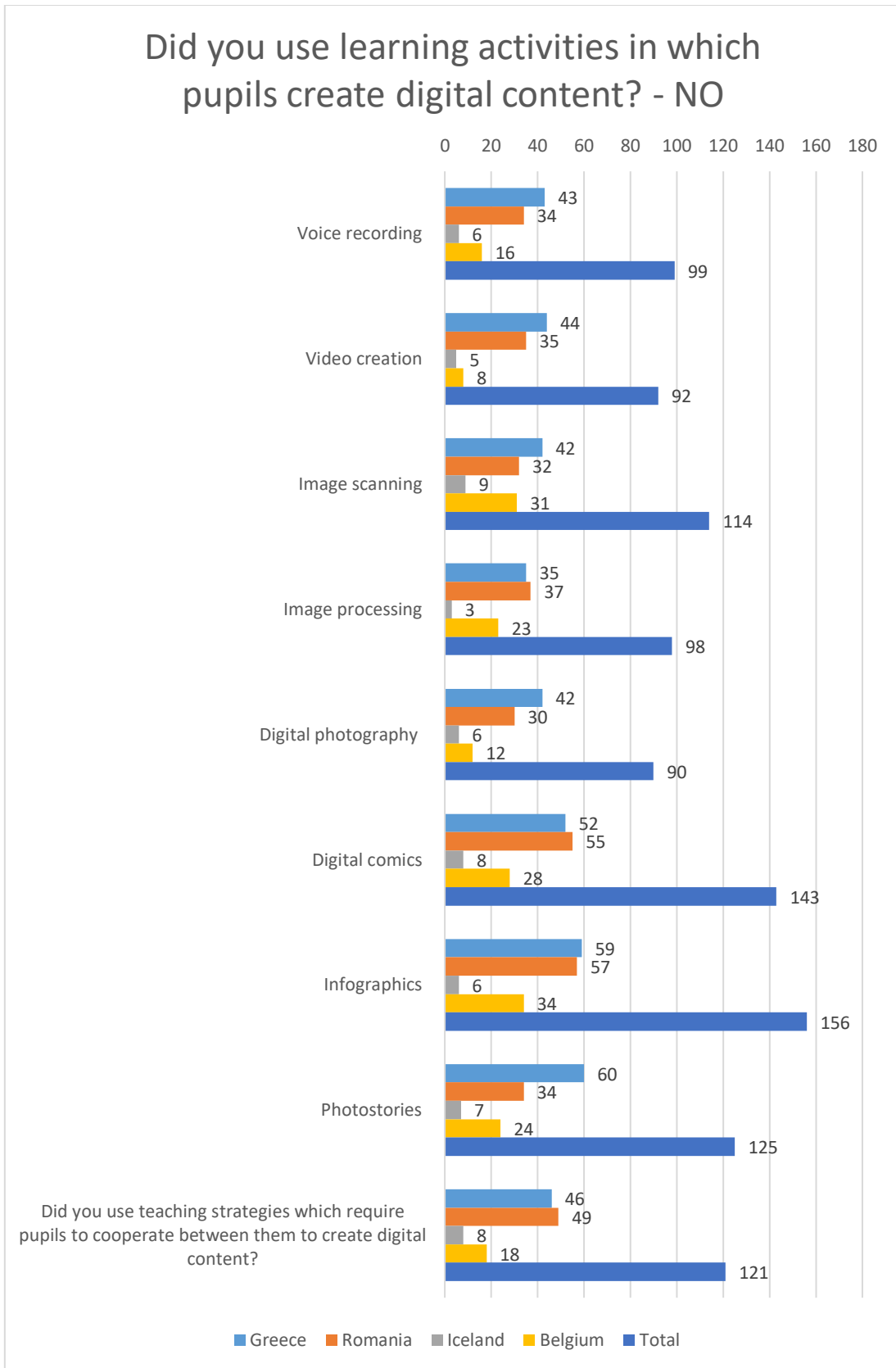
or the creation of a collage, cutting out of printed material (e.g. a magazine), etc. Thus, it is more time consuming, as opposed to finding images online. Additionally, there are many images available in online repositories nowadays. Consequently, the fact that image scanning is not used that much but image processing is, indicates that teachers prefer working with existing digital images.



**Figure 15.** Utilization of digital content creation activities by teachers (totals)



**Figure 16.** Utilization of digital content creation activities by teachers (per country – YES answers)



**Figure 17.** Utilization of digital content creation activities by teachers (per country – NO answers)

Regarding the creation of digital products which may convey messages through a narrative approach, such as digital comics, infographics and photo-stories, the majority responded that they have not used such activities. Despite the fact that the majority answered “no”, it is interesting to examine each country separately. In Greece, digital comics received more affirmative answers, in Romania and Belgium it was photo-stories and in Iceland it was infographics. Although it is not certain that these observations can be generalized, the use of a different type of digital material in each country is interesting. It could be based on the familiarity of teachers with the material and the corresponding tools, deriving from trainings, etc. In any case “no” was the dominant answer.

Although teachers reported involving students in group projects and activities in previous questions, the majority (121/183) reported not applying strategies which require the pupils to collaboratively create digital content. Considering that the literature proposes many creative approaches of this type through which the application of acquired knowledge is involved (e.g. digital storytelling where students create digital stories is one) this is an indication that teachers do need training on the subject.

Finally, when asked what they thought is needed to create a classroom environment where critical thinking and open expression about social and sustainability issues can and should be done, most of the teachers in Greece who answered referred to the need of the curriculum to “leave space” for appropriate activities. A few teachers mentioned that they need to be trained on how to do it. Two teachers referred to the need to work with projects that require information inquiry.

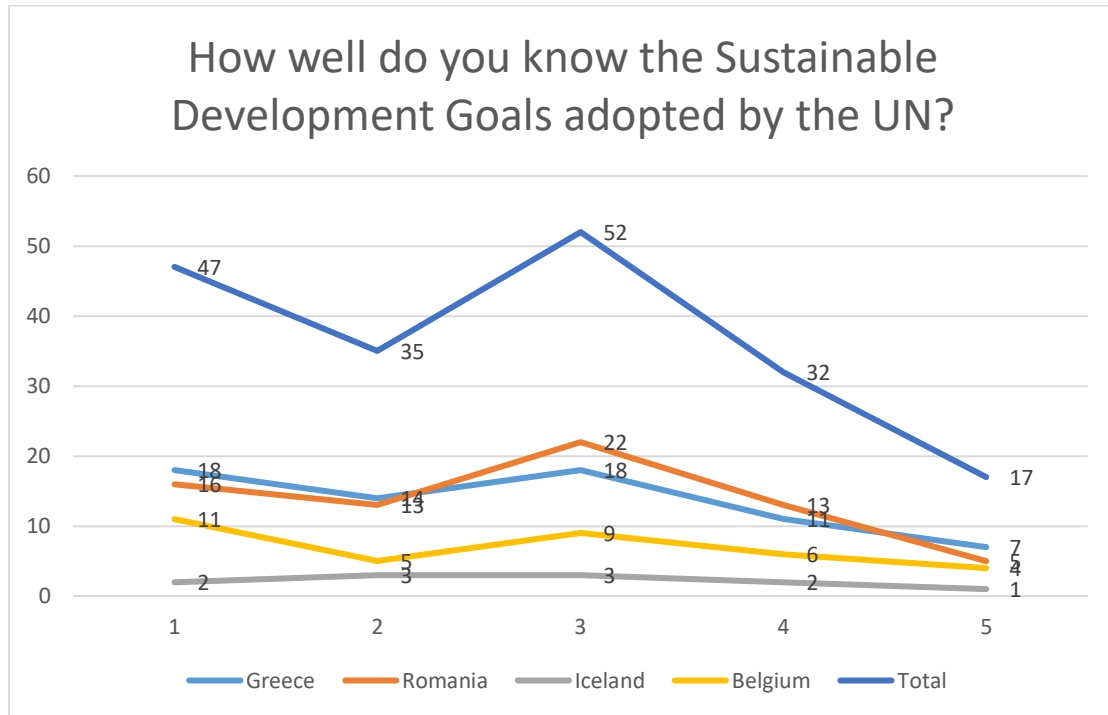
Similarly, in Belgium the answers referred to the need for time and space. Also, 8 teachers mentioned free expression of pupils’ ideas, independent learning and coaching approaches. They also referred to the utilization of various stimuli in order to initiate discussion and teaching activities.

In Iceland, the issue of better in-classroom communication was mentioned, focusing on discussions and expression of opinions. One teacher specifically mentioned “Have discussions and listen to students”. Also, the need for further training on how to involve societal issues in the classroom was highlighted. In fact, one teacher mentioned the “Green Steps study” as interesting reading material for teachers to access and integrate in their practice.

In Romania, the answers referred to the need for proper attitude cultivation by the teacher. The issue of good communication among the involved parties (teachers, pupils and parents) was also mentioned, as was the need to integrate carefully selected extracurricular activities. Furthermore, issues related to classroom climate and motivation were mentioned, such as “emotional development”, “motivation provision”, “freedom of expression” and “freedom of decision”.

### Sustainable Development Education

The last part of the questionnaire was related to Sustainable Development. Figure 18 shows how well they reported they knew the United Nations' Sustainable Development Goals (SDGs). The conclusion is that they are not that familiar with the SDGs, as only 49/183 replied with 4 or 5 on the Likert scale. The distribution is quite similar in all countries (with a minor difference in Iceland which cannot be considered as important for the overall distribution, as seen in figure 18). Thus, teachers require training on the subject.

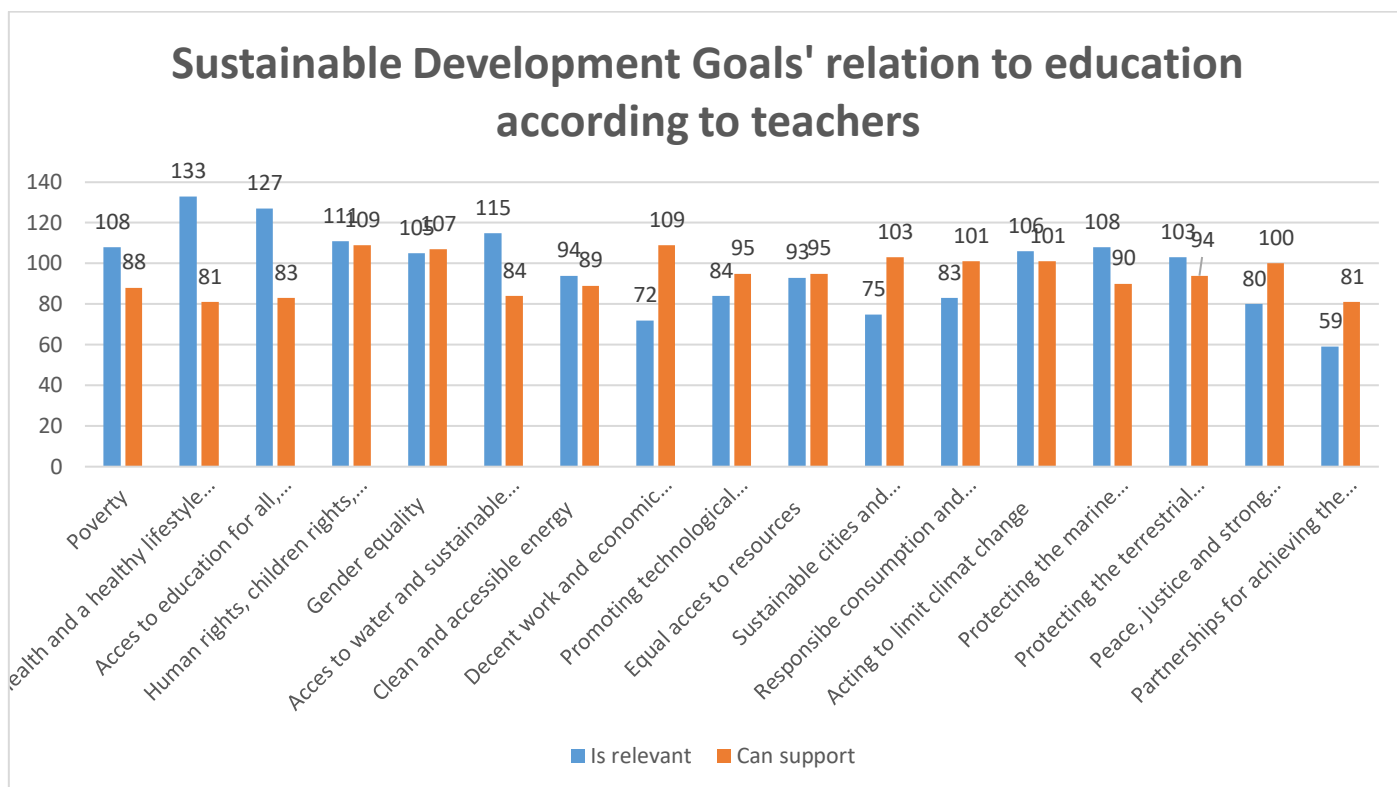


**Figure 18.** Teachers' level of familiarity with UN's SDGs

A series of statements was provided to the teachers in order for them to report whether they perceive the SDGs as relevant with preschool and primary education level and if they can be utilized to support the development of democratic competences in the same levels. Only a few of the answers were provided by a lower percentage than 50%, although close to it (the lower is 39%, "Decent work and economic growth").

The top rated as most relevant to these education levels are "Health and a healthy lifestyle promoting wellbeing", "Access to education for all, starting from kindergarten", "Human rights, children rights, global citizenship and appreciation of cultural diversity and the contribution of culture to sustainable development", "Access to water and sustainable water management", "Poverty", "Protecting the terrestrial environment" and "Protecting the maritime environment". They are all related to fundamental human rights and environmental issues. This could be interpreted as expected by the fact that these are issues for which many schools have conducted activities over the past few years. Issues connected to societal and economic issues, such as "Decent work and economic growth", "Sustainable cities and communities", "Responsible consumption and production", "Promoting technological innovation" and "Clean and accessible energy" are reported as less relevant at this educational level, probably due to the complexity of the issues.

On the other hand, some SDGs are considered appropriate for supporting the development of competences, but not appropriate for these levels. The most indicative example is “Decent work and economic growth”, which is not an easy and simple topic for young children. Other such examples are “Peace, justice and strong institutions” and “Partnerships for achieving the SDGs”. Overall, there seems to be a rather confusing perception of the appropriateness of SDGs to support educational activities and this reveals the need to train teachers so as to facilitate the clarification of the SDGs meaning, significance and connection to the curricula and the competences that pupils may cultivate when working on them.



**Figure 19.** Teachers’ level of familiarity with UN’s SDGs

There are several noticeable differences among the countries in both perception categories. For example, in Greece the SDGs appearing in the middle of the chart in Figure 19 and are not considered very relevant for the educational levels under considerations. In Romania the differences among relevance and supportive nature of the SDGs are more equalized. In Iceland, most of the SDGs appearing on the left side of Figure 19 and are considered appropriate but not ones that can support the corresponding educational levels. In Belgium, for all the topics the “is relevant” perspective is selected more than the “can support” one. Additionally, the last one (Partnerships for achieving SDGs) was not selected by any teacher for both perspectives.

Figures 20 and 21 present the answers per country for each of the available options in order to better examine the different insights among the countries.

## Sustainable Development Goals' relation to education according to teachers

(is relevant for pre-school and primary school level )

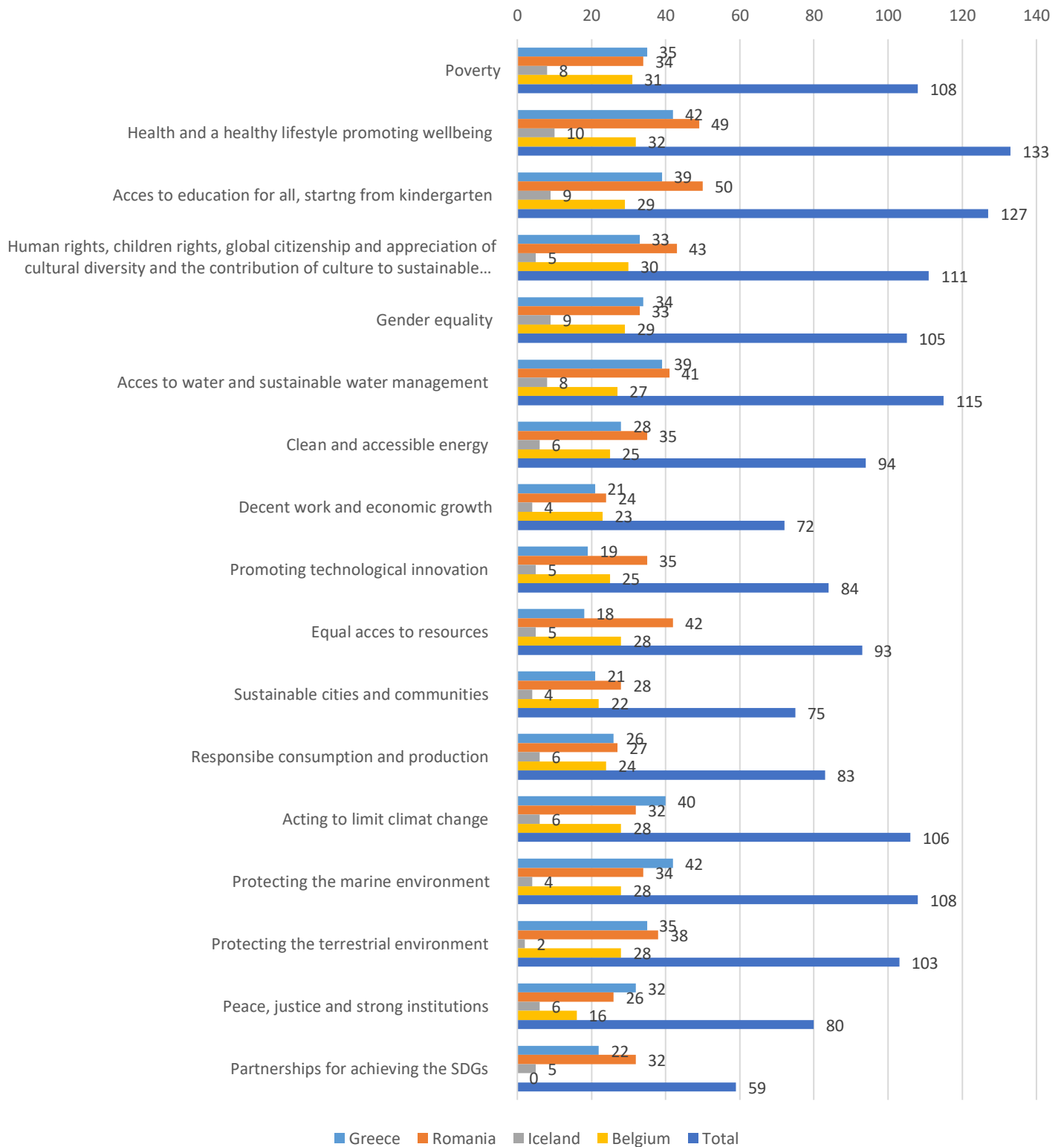


Figure 20. Teachers' level of familiarity with UN's SDGs

## Sustainable Development Goals' relation to education according to teachers

(can support the development of democratic competences at pre-school and primary school level )

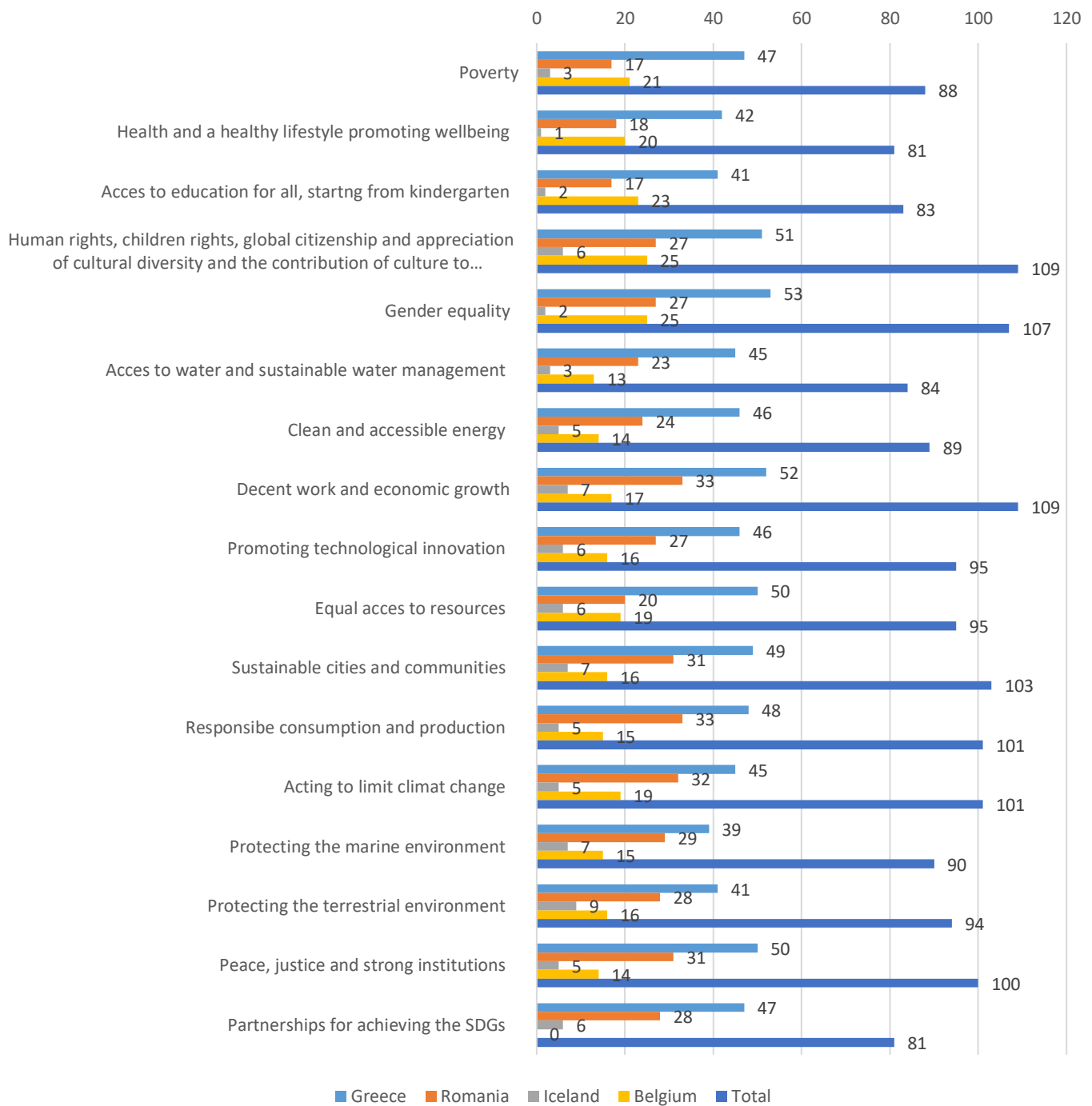


Figure 21. Teachers' level of familiarity with UN's SDGs



Overall, there is much diversity of perspectives among the countries. Although that could be connected to the priorities that their official national curricula impose or the priorities promoted by their governments, it is obvious that teachers seem to need training in order to fully understand what the SDGs are, what they represent and how they are connected to the curricula.

In order to gain some insight on the issue, the teachers were asked to describe indicative activities related to the SDGs. In the case of Greece, some of the teachers answered, providing examples mainly related to the environment and referred to material which is officially promoted by the Ministry of Education and the Institute of Educational Policy. Only one teacher provided more concrete ideas about studying the SDGs in a more holistic approach.

In the case of Iceland, issues regarding the environment and health were mentioned, although in a very vague manner.

In the case of Belgium, 16 teachers mentioned the establishment of basic themes that guide the activities of a day/week/month or even a school year. About 40% provided some generic ideas, such as discourse activities, creating posters, playing games, visiting organizations, using videos and having workshops.

In the case of Romania, the main focus was on ecological and environmental activities. Also, activities related to health education and non-violent education (obviously falling under the access to education for all guideline) were mentioned. Regarding human rights, food education was mentioned, although less frequently as well as charity and financial education were mentioned.

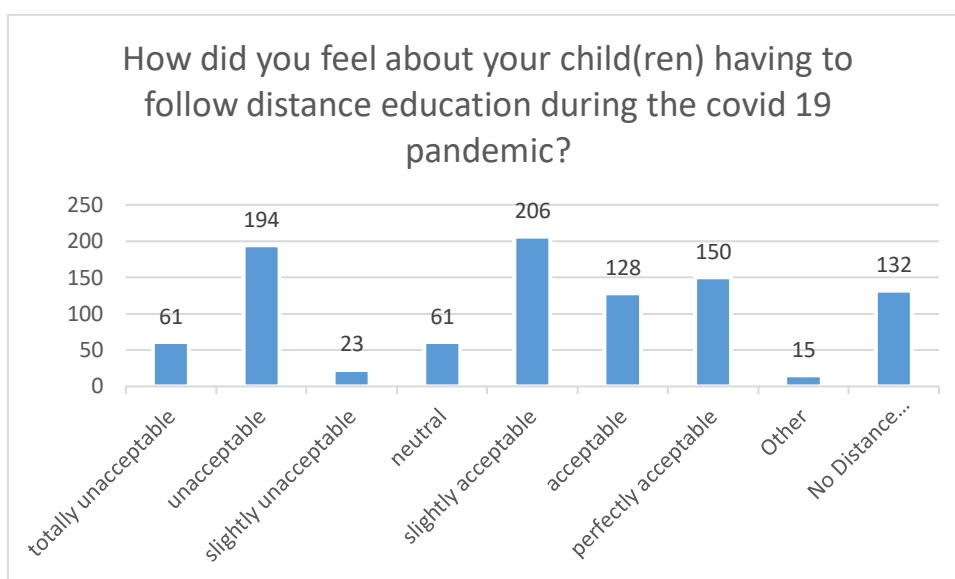
Overall, it seems that the teachers in all countries have a rather incomplete understanding and/or knowledge of the UN's SDGs and their connection to curriculum areas for pre-school and primary school level. Their focus is mainly on environmental issues and societal issues related to human rights. Thus, further training seems needed for the teachers on the matter.

## Parents' questionnaire

Overall, 972 people responded to the questionnaire, 75 from Greece, 376 from Iceland, 441 from Romania and 80 from Belgium.

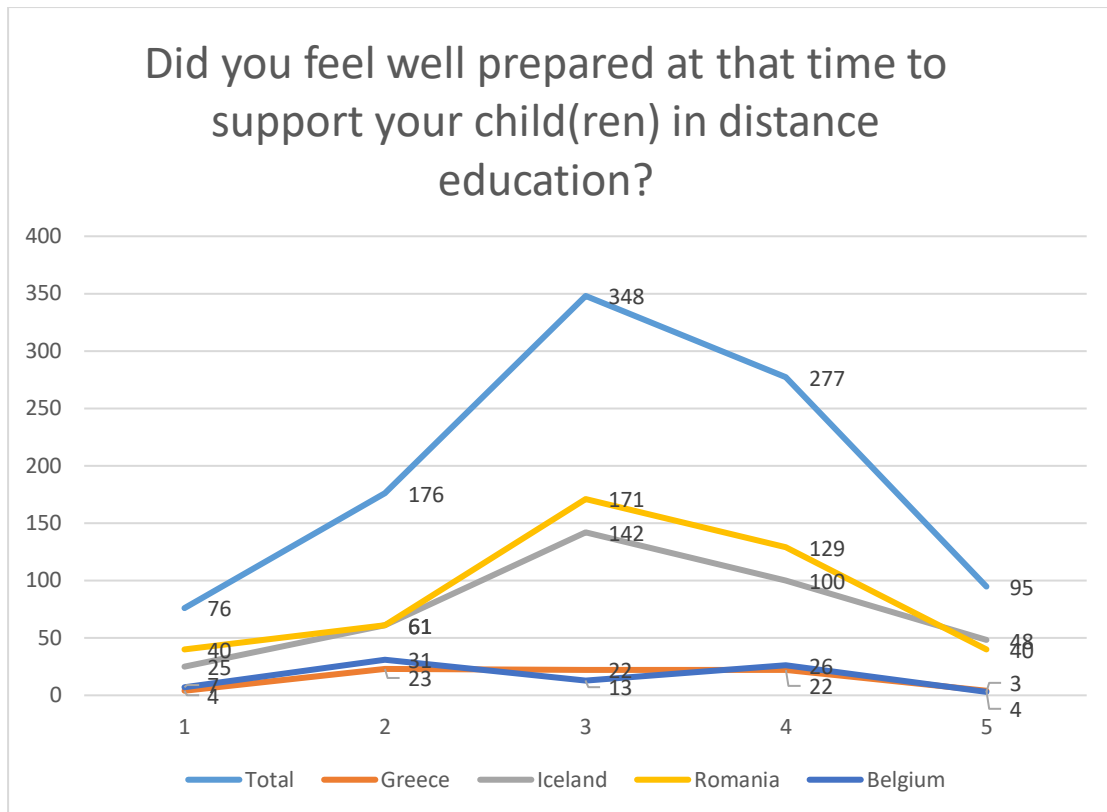
### During the pandemic – Distance Education

The first question regarded the experience with distance education during the pandemic. Figure 22 shows that about half of the parents (49.79%) provided the “acceptable” answers from the available choices. On the other hand, 28.6% provided the “unacceptable” answers and 132 parents stated that their children did not participate in distance education during that period. The latter are all parents from Iceland, as the country didn't implement distance education in the same manner and at the same extent as the other countries as there were generally no full school closures. Interestingly, most of the answers on the “unacceptable” group came from Romanian parents, whereas in the rest of the countries the overall perception was rather positive.



**Figure 22.** Parents' feelings towards distance education during the pandemic

When asked how prepared they felt to support their children in distance education during that period, figure 23 shows a rather normal distribution of answers around the middle value. This indicates that overall they didn't feel very prepared for such an occasion. The distribution in Greece was normal but with no middle peak (meaning that the middle value was selected almost as much as the ones on its left and right side). In the case of Iceland the distribution is perfectly normal, but with a higher peak. In Romania there is a slight shift of the distribution to the right (more parents selected “agree”). Lastly, in Belgium the distribution was in an M format, forming 2 peaks in the “disagree” and “agree” values (figure 23).

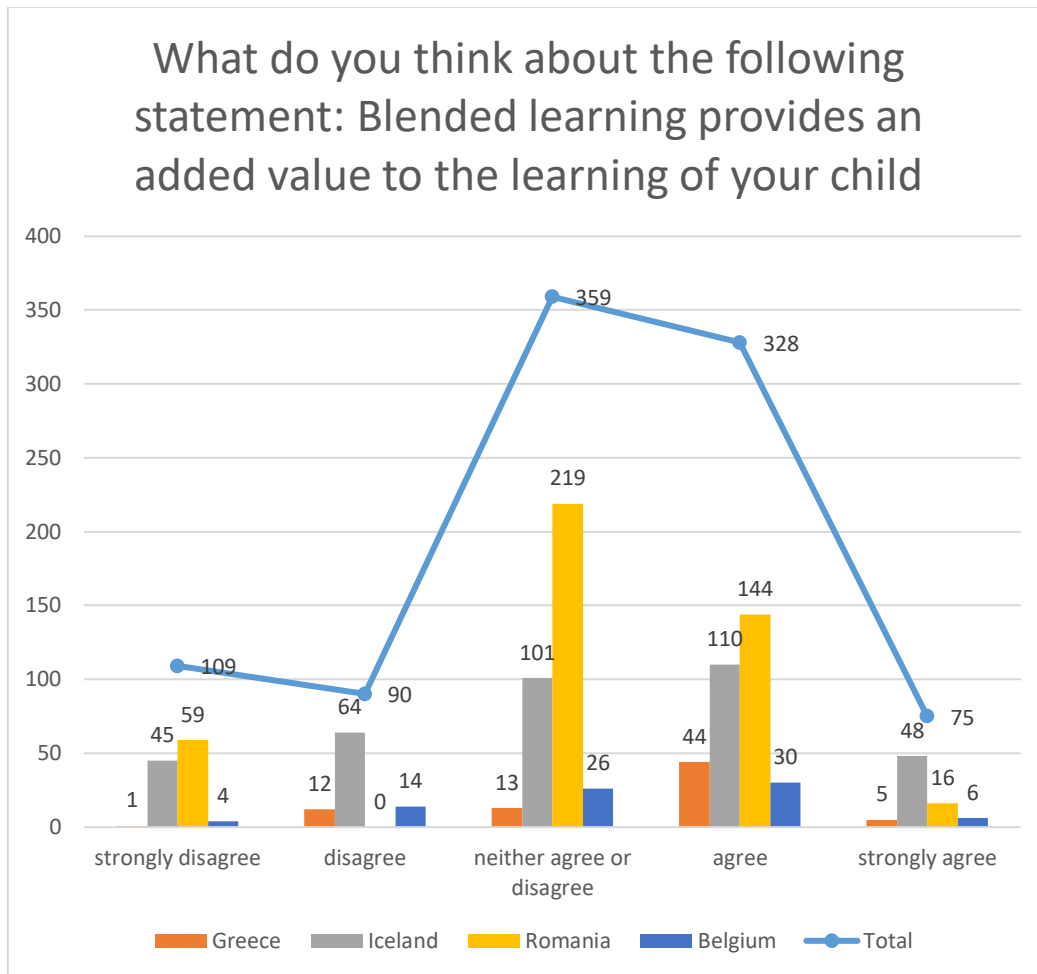


**Figure 23.** Parents’ preparedness for supporting their children during the pandemic

Thus overall, the perceptions of the parents regarding distance learning and their ability to support their children were rather split.

### Blended Learning

After providing parents with a brief definition of what blended learning is they were asked if they thought that it provides added value to the learning of their child. Figure 24 shows a distribution which is shifted slightly towards more positive attitudes in relation with the one depicted in figure 23. Thus, it seems that parents are not convinced of the value that blended learning may have for their children. This shift was more evident in the Greek parents as 44/75 selected “agree”. But overall it seems that parents, like the teachers, probably need to be persuaded by means of training or other informative actions of the value that blended learning holds for their children’s learning.



**Figure 24.** Parents’ preparedness for supporting their children during the pandemic

### Parent – School/teacher communication

The next two questions regarded the parents’ communication with the school and/or the teacher of their children. Regarding the ways, the parents were allowed to choose more than one possible answer and thus 1483 items were selected by 972 respondents. Figure 25 indicates that they mainly rely on the teacher’s/school’s initiative for, waiting for them to initiate contact via email or instant messaging application communication (338 and 414 responses). The third option is for the parents to contact the teacher directly via phone (209 responses), followed by the teacher/school using the phone (129 responses) or the parents making contact via email (156 responses).

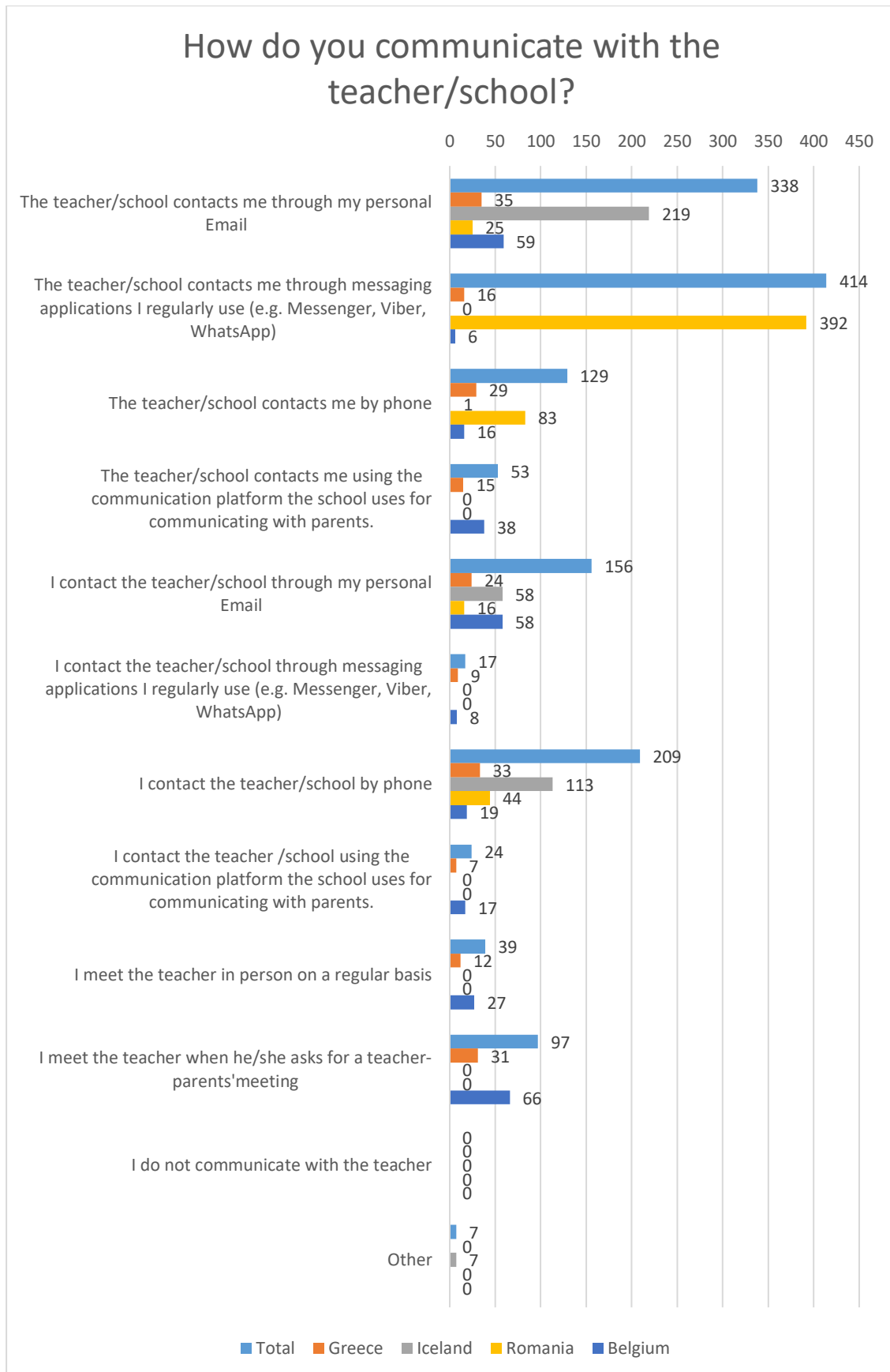
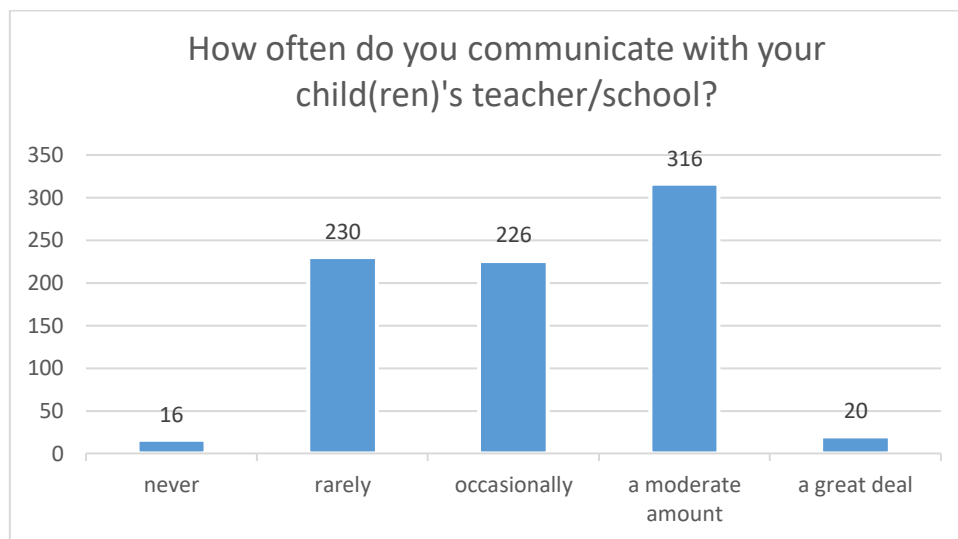


Figure 25. Means of communication between parents and teachers/schools

In Greece the parents meet the teachers more consistently when the latter ask them to do so. The parents in Iceland selected only 3 choices, with the teacher/school contacting them via email being the most selected (219 responses), followed by the parents initiating contact via email (133 responses) or phone (38 responses). In this case, the instant messaging applications were not selected at all. The first choice in Romania was that of the teacher/school using an official platform for communication, followed by phone contact in the same direction. In this case, also just a few options were selected, and instant messaging applications was not selected. In Belgium many options were chosen, as in Greece. Also similarly, the parents meet more consistently with the teachers when asked to or use their email for communication with the teacher/school in both directions. In this case, almost all options were selected. Overall, the means of communication between parents and teacher/school seem to differ among the countries and possibly reflect people’s habits and the popularity of various communication means within each country.

Regarding the frequency of communication, Figure 26 shows that it is almost normally distributed, although “a moderate amount” was the most selected option. The frequency of communication is much higher in Romania, higher in Greece and much less in Iceland. In Belgium it follows a normal distribution. In this case, it seems that the frequency of communication reflects the mentality of each country, presenting noticeable differences, although in Iceland there was no distance education during the pandemic and this may have influenced the parents’ answers to this question (considering that they assumed the question was related to distance education settings). Nevertheless, the differences are noticeable.



**Figure 26.** Frequency of communication between parents and teachers/schools

When reporting on the reason for communicating with other parents, the vast majority of answers provided in Greece and Iceland referred to homework verification, coordination and assignments supervision. The answers were similar in Belgium, where 5 parents mentioned the exchange of opinions about how the teachers handle things in class. Also in Romania, the main topic of discussion was home assignments and homework verification. A few parents in Romania mentioned contacting other parents so that classmates could socialize outside the classroom and fewer commented upon the stressful nature of the education system and discussion they have with other parents on how to address this issue overall. One interesting answer (provided by 2 parents) was to compare pupils’ grades.

Parents' involvement in pupils' learning

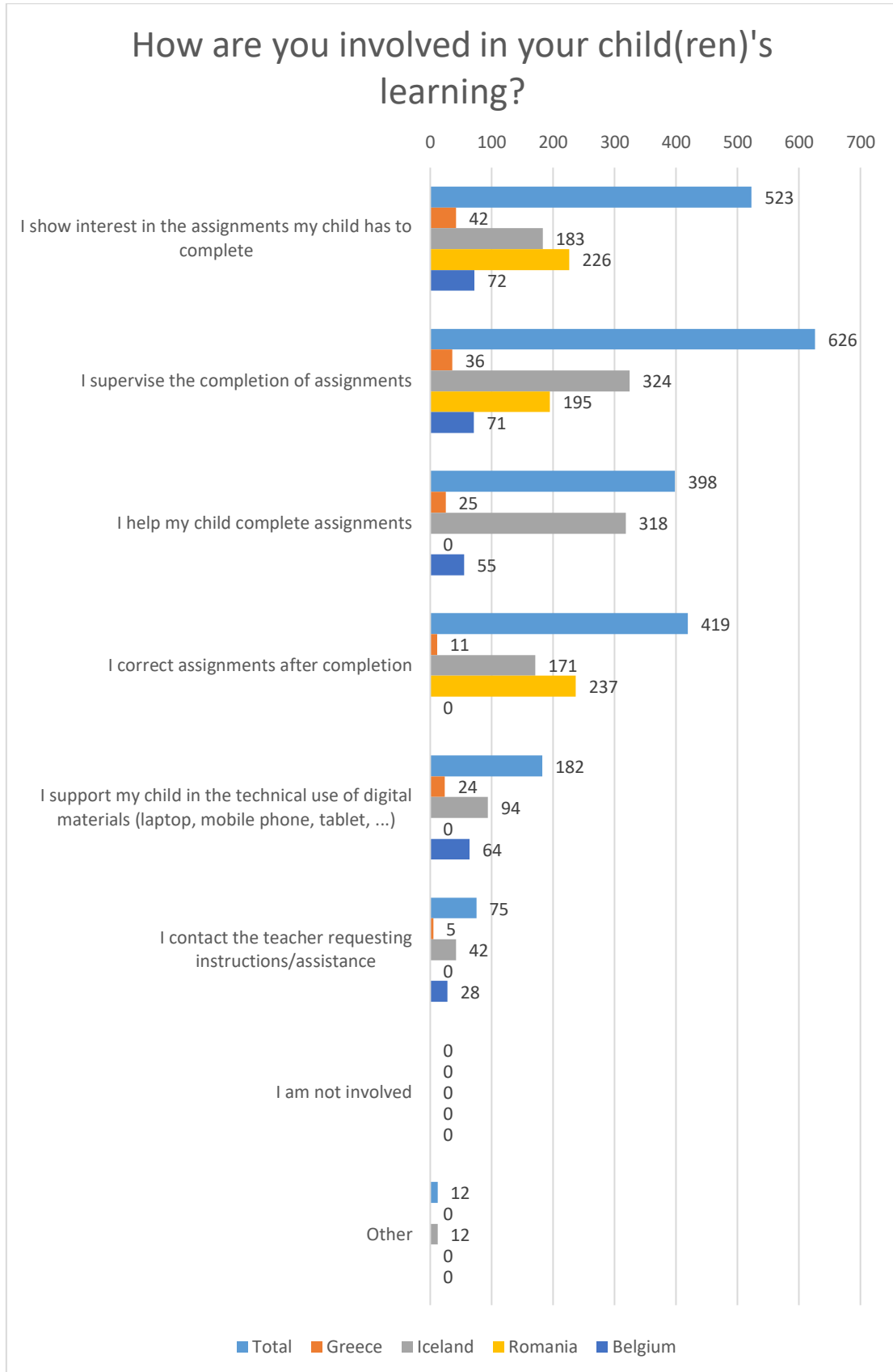


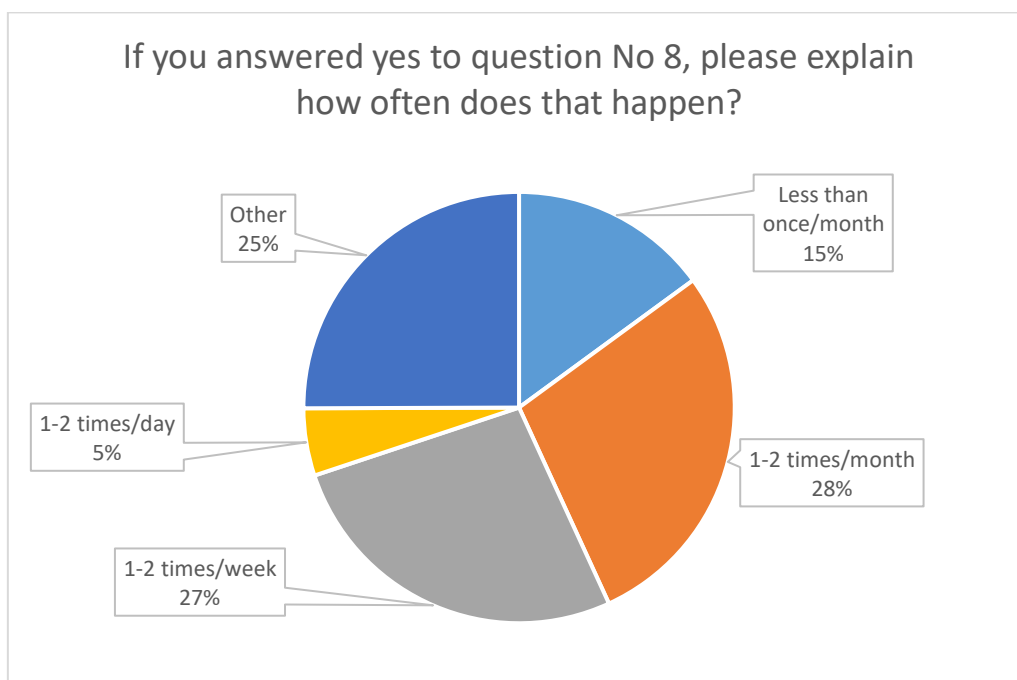
Figure 27. Parents' involvement in children's learning.

Then parent involvement in their children’s learning was examined. More than one options could be selected, resulting in 2235 choices by 972 respondents (figure 27). The most selected option was the supervision of the children’s assignments (626 selections), followed by showing interest in that process (523 selections) and corrective interventions for the assignments (419 selections). Fewer parents reported assisting their children in completing their assignments (398 selections) or supporting them in using technology for their needs (182 selections). A few parents stated that they contact the teacher in order to ask for instructions or assistance (75 selections). Thus, mainly the parents hold a monitoring and supervision role regarding their children’s learning.

In Greece the distribution of choices is more or less similar to the overall one. In Iceland, parents seem to be more assistive (supervision -324- and helping in completion -318-) towards their children than showing interest in what the assignments are (183). In Romania, the most selected option was that of correcting the assignments (237). Only 2 more options were selected, that of showing interest (226) and supervising assignments (195). In Belgium the distribution was similar to Greece, but in this case no parent selected the “I correct assignments after completion” option.

Overall, the parents mainly oversee their children’s assignment as a way of supporting them and making sure that they are able to fulfill school related obligations. In some cases they correct assignments, but overall the parents’ concern is that their children fulfill their school related obligations successfully.

When asked if they communicate with other parents about their children’s learning, the answers were split (56% No, 44% Yes). In Romania and Belgium the answers were similar (slightly more Yes than No). Interestingly, 73% in Greece answered Yes and 78% in Iceland answered No. It is noteworthy and could be connected to the national approach in each case. Possibly it may reflect on the trust the parents show in their children and the school system overall, but no concrete conclusions can be drawn.

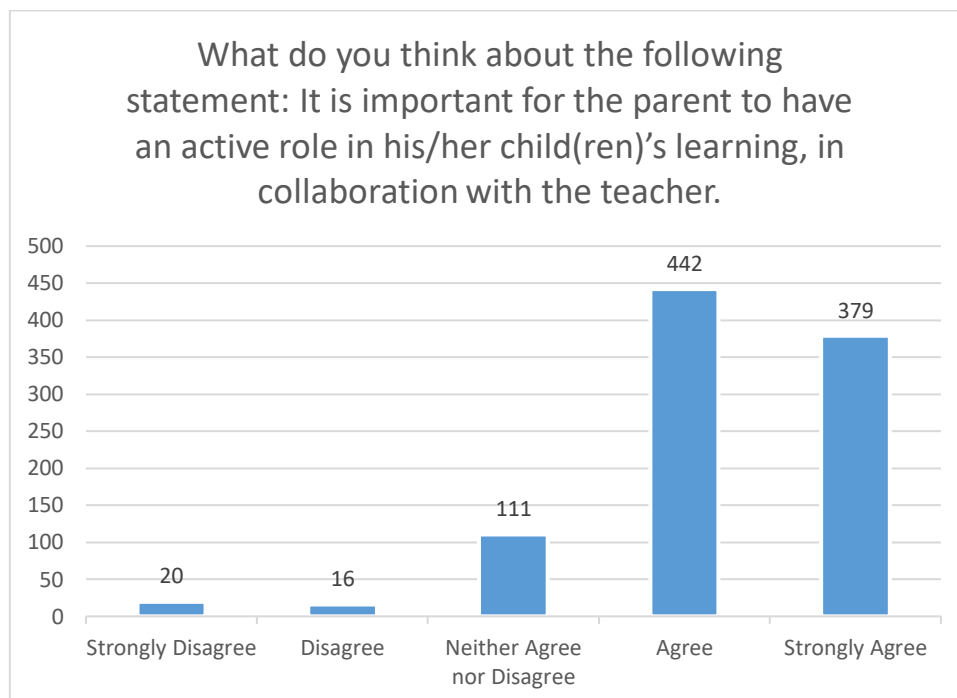


**Figure 28.** Parents’ frequency of communication.

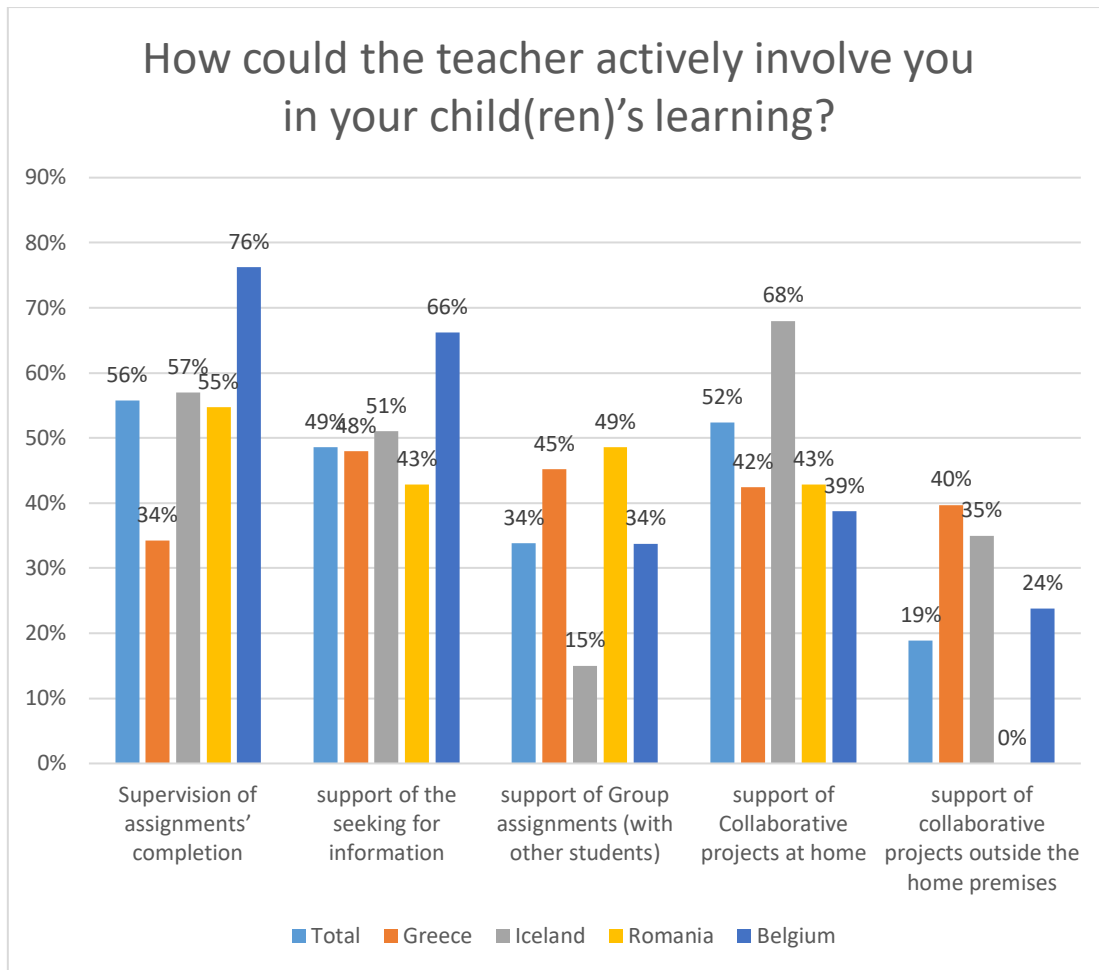


Those who answered Yes were asked to elaborate by stating the frequency of such communication. Figure 28 shows that 1/3 communicates regularly with other parents (at least 1-2 times per week). Examining the distribution of answers in each country, it seems that the more affirmative answers were provided in the previous question, the more frequent the communication is. This may also indicate a higher level of concern and possible insecurity by the parents, considering that the assignments and their correct completion are their main concern. They contact other parents more frequently in order to verify assignments, exchange ideas and experiences; overall they try to reassure that assignments are completed properly. Also, it could reveal that the parents do not always trust their children of being sure what assignments they have or being able to complete their assignments correctly. They clearly state that they verify what the assignments are, despite of what their children report to them. Although it is an assumption, one could think that mainly this is a result of increased concern for their children’s progress and not a matter of trust.

When asked to consider if they should have a more active role in their children’s learning, in collaboration with the teacher, they agreed strongly (Figure 29). The distribution of answers was similar in all countries. This indicates that parents want to be more actively involved but they possibly don’t know how and thus they need more information or training and more stable communication with the teacher for that matter. Combined with the answers to the previous question (figure 28), it could be assumed that the parents show high interest in their children’s learning, they regularly try to supervise and verify which are the school-related obligations of their children and they consider their role as very important for their children’s learning. But since they focus mainly on assignments, more training and stable (in matters of frequency and content) communication with the teacher could facilitate their understanding of their role as supporters of their children’s learning.



**Figure 29.** Parents’ perception of their role in children’s learning.



**Figure 30.** Parents' ideas on how teachers can actively involve them in children's learning.

When asked to think of ways that the teacher can actively involve them (figure 30), they referred to projects, collaborative or individual, in which they would take a facilitator's role for their children (e.g. assisting them in seeking information). The option about projects outside their home was selected by 19% and 56% selected assignments' supervision.

There are noticeable differences among countries (figure 30). In Greece the supervision of assignments completion is the least selected option (34%), significantly lower than the overall average value. On the contrary 40% of the respondents selected the option about projects implemented outside, about double than the overall average value.

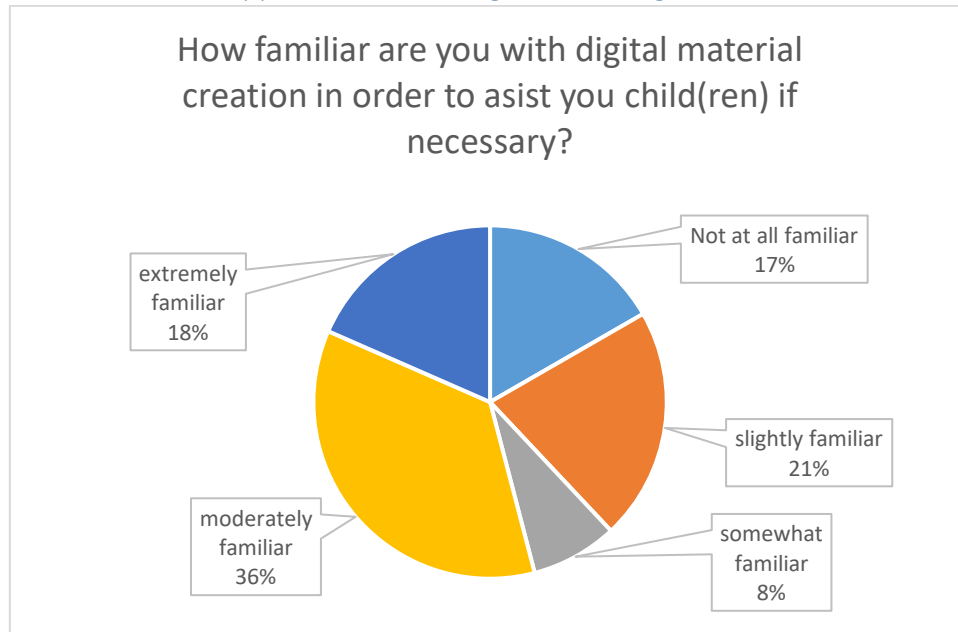
Regarding Iceland, only 15% selected the option of supporting group assignments, but 68% selected the option of supporting the pupils with collaborative projects at home. The other options were close to the overall average values. This difference may mean that they perceive their support towards their children as a collaborative process and that they are not referring to projects in collaboration with other pupils, as the corresponding numbers are significantly different. Also, in Iceland a significant percentage of the parents support their children for projects that take place outside their house.

In the case of Romania, the differences from the overall average values regard two main options. The first is the support of group assignments, for which the value is much higher (49% vs 34%). The second is the support for outside projects which was not selected at all. It seems

that pupils in Romania are more involved in group assignments, but not in ones carried outside in which they need support from their parents.

In the case of Belgium, the options of supervising assignments and seeking information were highly selected (76% and 66% accordingly). The other options appeared to have no significant differences from the overall average means. Thus, the parents in Belgium seem to support their children mainly for their home assignments which often require information seeking.

### Parents' readiness to support children in digital tool usage



**Figure 31.** Parents' familiarity with digital tools

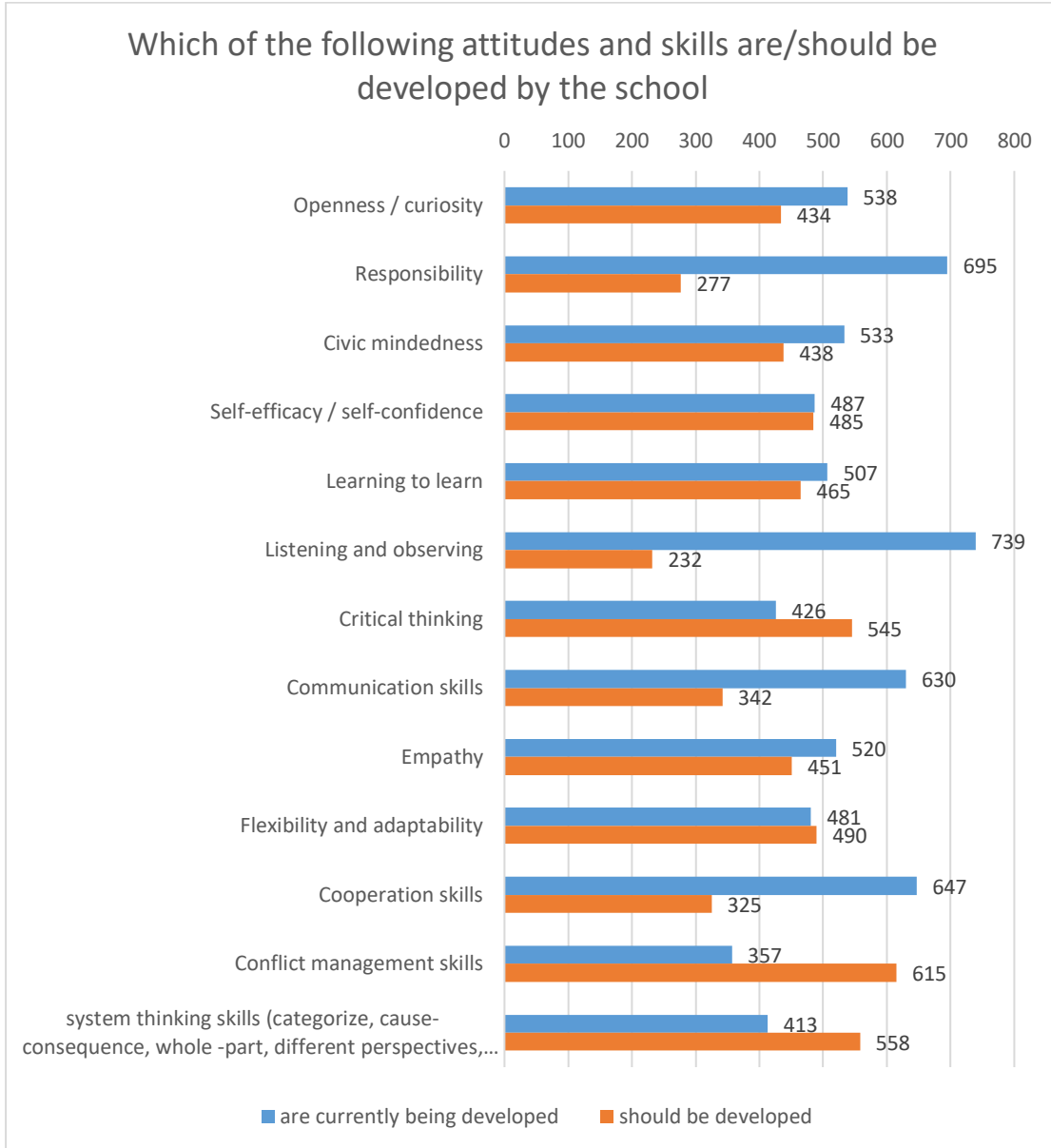
Regarding their familiarity with digital material creation, Figure 31 shows that 54% of the parents are rather familiar with it, whereas 38% are not very familiar or not at all with the corresponding tools and processes. Thus, it seems difficult for parents at this state to support their children in such tasks, at home. The level of familiarity is much higher in Greece (79%), Belgium (72%) and Romania (68%), but not in Iceland (39%).

### Parents' perception of attitudes and skills development in school

The next question required the parents to reflect upon the skills and attitudes that their children should develop through school or whether they are currently being developed at schools. Figure 32 shows the overall results and Figures 33 and 34 the distribution per country as percentages of the total answers provided in each country (and in total).

Elements which parents mainly consider as being developed in schools are connected with fundamental aspects of learning and personal development. For those attitudes or skills, the parents selected option "are being developed" more than the option "should be developed". They were required to select one of the two options for each attitude or skill. Those are: "Listening and observing", "Responsibility", "Cooperation skills", "Communication skills", "Openness and Curiosity", "Empathy" and "Learning to learn". The rest of the attitudes or

skills were considered as not being currently developed in schools as much as they should, with “Conflict management skills” and “systems thinking” being the least treated elements in school. For the elements “self-efficacy/ self-confidence” and “Flexibility/ adaptability” the two available options were selected almost equally, indicating that the parents were not sure if they are being treated in school or not (thus selecting that they should be treated).



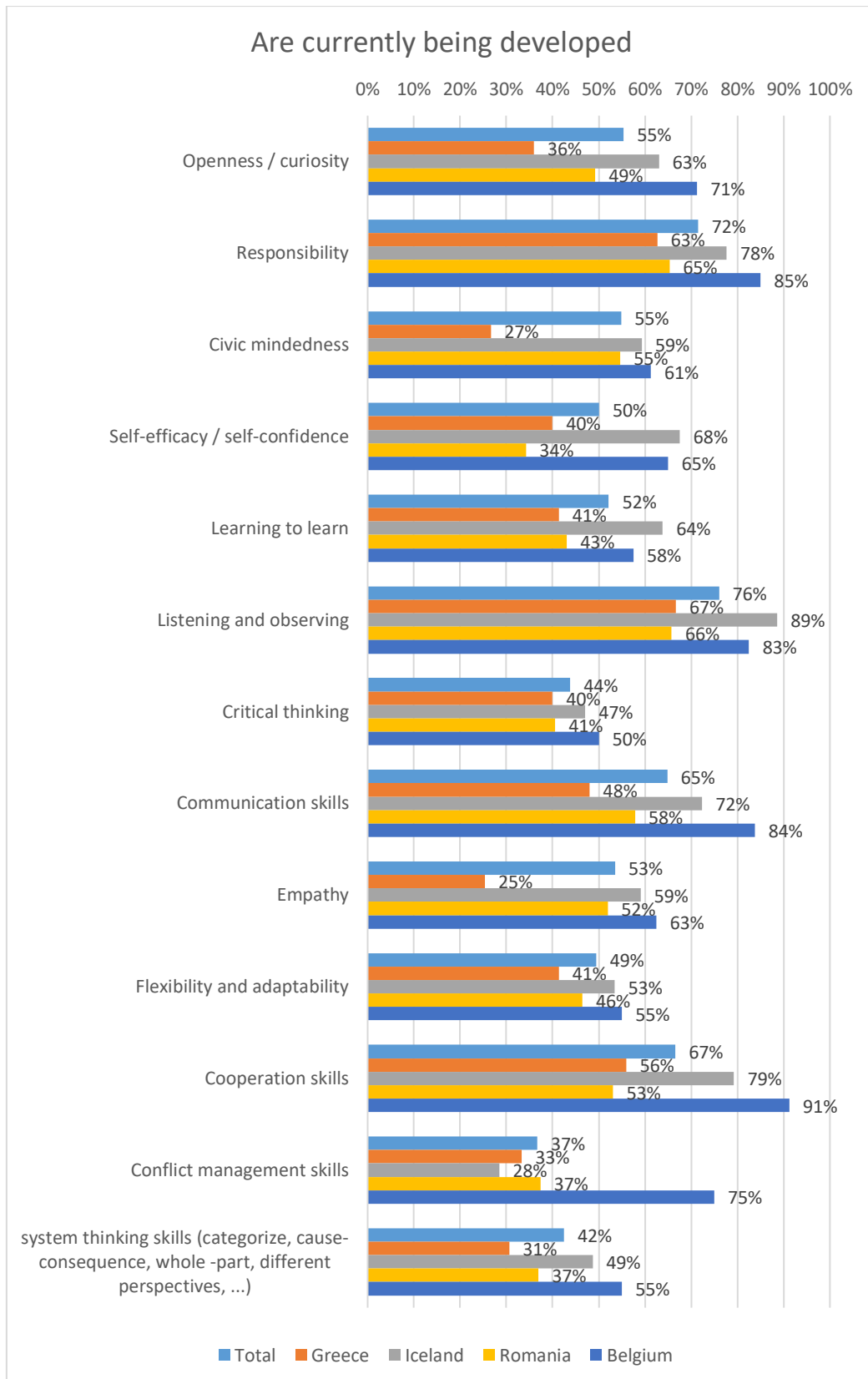
**Figure 32.** Parents’ perception of competence development for their children

Examining the per country distribution of answers, some interesting observations can be made. For presentation purposes figure 33 shows the percentages (total and per country) of the parents who selected the “is being developed” option and figure 34 the “should be developed” option. Figure 34 could be omitted as it derives from figure 33. Mainly figure 33 is being commented and interpreted at this point.

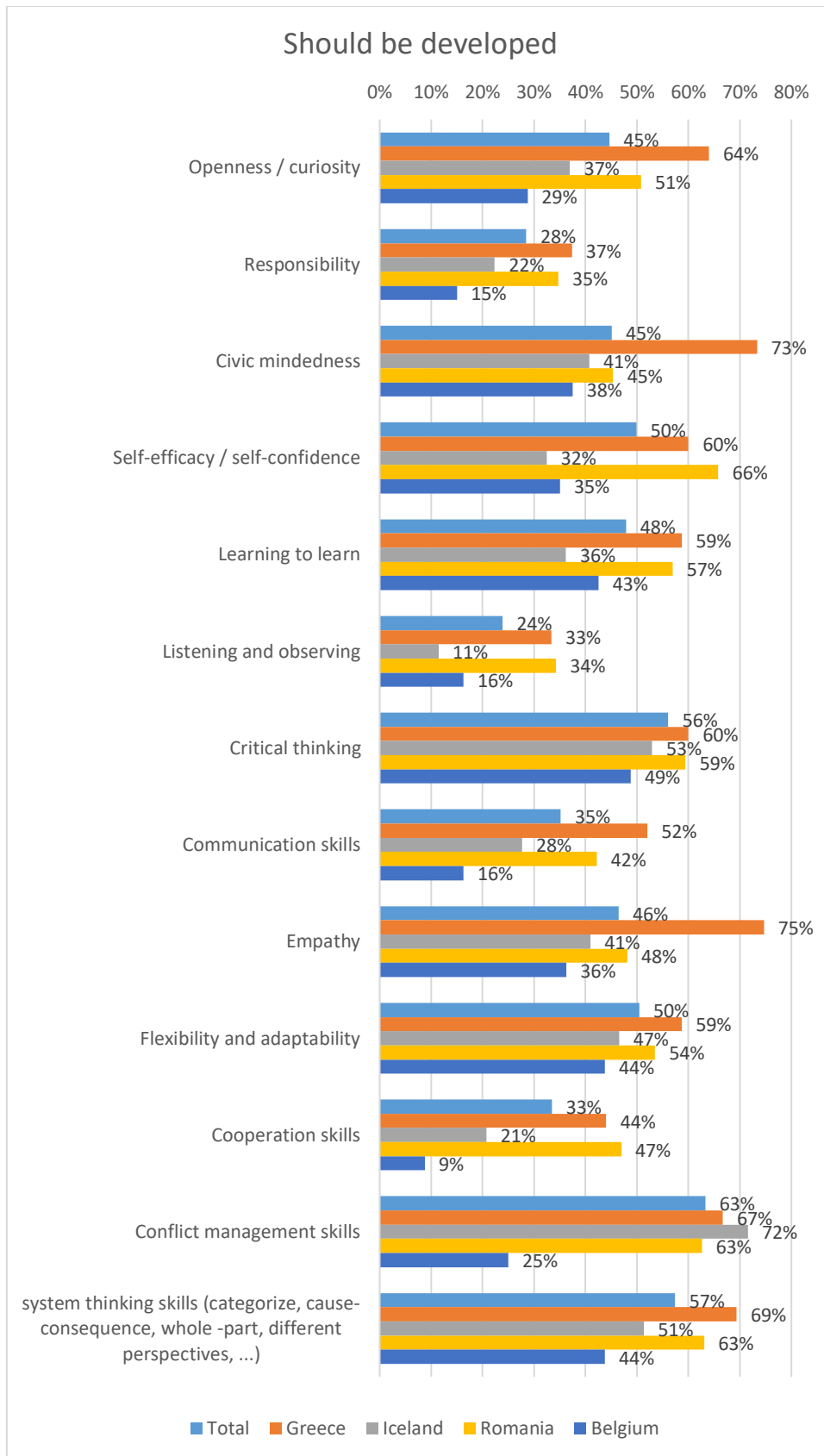
One interesting observation is that in Belgium, all elements but three (“Self-efficacy/self-confidence”, “Listening and observing” and “Learning to learn”) were selected by a higher

percentage of parents than in any other country and the overall average value. These are attitudes directly related to the individual learner and his/her metacognitive skills.

In the case of Greece, “Openness/curiosity”, “conflict management”, “systems thinking” and “civic mindfulness” were selected at very low percentages. These are attitudes/skills related to active citizenship. On the other hand, the Greek parents selected the “is being developed” option much less than in the other countries and the overall average values, for all the elements in the list. This may indicate some sort of lack of trust in the Education System which is interesting to examine further.



**Figure 33.** Parents' perception of competences being developed at school



**Figure 34.** Parents' perception of competences that should be developed at school

In Iceland the pattern is similar to Belgium and the option “are being developed” was selected at high percentages, with the exception of “Conflict management skills”. “Listening and observing” was selected by 89% of the parents.

The responses of the Romanian parents were very close to the overall average values.

### Concluding comments

Overall, the parents value the education system of their countries rather highly (except in Greece), considering that most of the enlisted elements are being treated in school. This perception is stronger in Iceland and Belgium. On the other hand, this differentiation among countries and between elements highlights a need for the parents to be informed and/or trained better in order to fully understand what learning goals are set by the schools/teachers in order to be able to better support their children.

The majority of the respondents were women (84%) aged 31 to 50 years old (91%). They stated that mainly 2 people (usually a mother and a father or a mother and a grandparent support children’s learning at home and most of the houses have up to 2 children who need support (and up to two children overall). Thus, there is no actual problem in the numbers (parents/adults available to support children in learning). Of course, that doesn’t mean that their availability for supporting their children is constant or at high capacity, but regarding the number of adults in a house there is a good compliance.

Also, that doesn’t mean that the corresponding adults fully know or understand when, how and at which extent they should support their children. Also, the previous question reveals that overall there are mixed perceptions on the attitudes and skills that the school is developing. Taking into account the question about the communication (content and quality) between teachers and parents, which was mainly based on emails and instant messaging, it seems that it is important that the teachers take initiative for enhancing communication with parents and their involvement in the pupils’ learning. For that, a significant first step would be for the teachers to communicate/explain the learning goals that they set to the parents, so as to make them their collaborators in their teaching practices.

Finally, regarding the parents’ level of education, most of them hold at least a bachelor’s degree and at least 1/3 of them hold a Master’s degree or a PhD. Also, their overall ICT competence level is adequate and thus they are capable in supporting their children in such cases. Correlating that with their statements regarding digital material creation, it seems that they should be able to overcome this obstacle easily with some training, guides or instructions by the schools.

## Conclusions

Overall, the two questionnaires reveal some powerful insights. Regarding the teachers, it seems that many of them feel trapped within the curriculum and don’t find or don’t know how to find the space to implement more innovative activities. They follow rather traditional teaching methods, involving minor discussions which could allow the pupils to express their opinions. They rarely use current issues (e.g. societal, climate, etc.) for initiating small projects



or other activities in the classroom. Projects in general are not utilized, or at least they are not utilized as often as they could/should or always according to the literature.

Regarding blended learning and ICT use in the classroom, the teachers use videos and games more, followed by information seeking. That indicates that teachers prefer digital materials that are ready to use, although that doesn't provide any information on how these are utilized. Furthermore, activities which require the pupils to create digital material of any kind are not common. They are more frequent in Greece and Romania and less common in Iceland and Belgium. Such activities are not always connected to distance education. For example, the creation of a digital comic can be carried out in face-to-face settings, complementing a wider teaching method. Other distance learning activities are not widely used.

Regarding projects, small group projects are the most common, although there are differences between the countries. Iceland mainly uses small group projects; Romania has a higher percentage of individual projects and Greece and Belgium use whole class projects as well. The answers to the questionnaire indicate that teachers do not seem to combine that approach with larger groups or with individual projects. Other combinations (e.g. indoor/outdoor projects) may increase interaction, reflection and learning

Teachers do not often involve parents in their children's learning. Interestingly, in Iceland the percentage is much lower than the other countries. Although the teachers value the parents' involvement, their answers indicate that they don't know how to do this actively and in a fruitful manner. Mainly, they try to involve them in home assignments and extracurricular activities. In any case, it is interesting that they value the parents' involvement, but they do not pursue it. The appreciation of parents' involvement seems to be higher in Belgium and lower in Greece. But in any case, the involvement of parents is considered as important in all countries, although not achieved as much.

Regarding distance and blended learning, it seems that the previous experience influences the country-specific perception. Thus, teachers in Iceland are less in favor, as they didn't use distance learning during the pandemic. Regarding elements that they would use, mainly multimedia material was mentioned, indicating that teachers used online teaching, but not as much/effectively as possible.

Overall, there seems to be a need for training teachers on how to apply innovative teaching approaches. As they don't often use current trends within their teaching, it seems that they don't know how to do so successfully. Moreover, they express their need for material that they can use, as they are more reluctant (or lack the corresponding competences) to create their own material. This lack is evident in the type of activities that they apply in their classrooms, where they do not support students that much in creating digital material. They express their will to learn more about the topics that DDestiny focuses on. Also, although they have and use digital equipment, they don't do that often in an effective manner. Furthermore, they do not use digital storytelling or activities that are connected to it effectively or at all and they express their willingness to learn how to do that.

Finally, Sustainable Development is a current trend which the teachers are not fully aware of and thus they seem to have conflicting ideas on the need to integrate such activities in their classrooms.

Overall, it is evident that the pillars of the DDestiny project are ones for which the teachers need additional support with methodologies, tools and material in order to integrate them into their practice.

Regarding the parents, all stakeholders agree that their involvement is significant but neither the teachers seem to involve them properly, nor do the parents know what they can do to support their children apart from helping and supervising them with their assignments. The need to demonstrate practical and innovative ways of parents' involvement is also high.

The parents seem to be open to distance and blended learning approaches overall, although their perceptions were rather split at first. They seem more open to the positive aspects of blended learning approaches.

Regarding parents' involvement and their communication with the school, the survey indicates that there is a lot of room for improvement. It is evident that parents try to support their children's learning and intend to communicate with the school/teacher. The lack of steady means and frequency of teacher-parent communication limits parents' involvement to mainly assignments supervision and some support for activities related to projects. A full grasp of the teacher's overall plan seems as beneficial for both the parents and the teachers and thus training in order to achieve a high level of collaboration among them seems necessary.

The parents' interest in their children's learning is evident also via their communication with other parents in order to verify learning tasks and exchange ideas and experiences. Considering also the conclusion in the previous paragraph and the fact that also teachers value the involvement of parents in the pupils' learning highly, it is evident that training for both teachers and parents is needed in order to construct steady collaboration and relationships, for the benefit of the pupils. Besides, the parents themselves consider that their active role in their children's learning is important, in collaboration with the teacher (figure 29).

In order to utilize digital applications and material, parents also need support through training. They are somewhat familiar with digital material creation in order to support their children in learning activities at home. Also, it is evident that this familiarity can be enhanced, possibly via the teacher.

Another significant finding of this survey is that not all parents in all countries are fully aware of the situation in the schools. Although for some attitudes and skills it is clearer for the parents that they are being cultivated in school and for some others that they are not, overall, there seems to be some confusion on the matter. A full understanding of the school's targets and goals has not yet occurred in general. Thus, it is important to address this issue, as it will allow for more successful involvement of the parents in their children's learning which will improve school functioning and success at extent. Furthermore, there are differences among countries on this matter, although the main goal of schools is the same in all of them. Thus, more uniformity is needed in reaching the parents, on a European level.