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**Mestrado em Gestão de Informação**

Master Program in Information Management

## **COVID-19 PANDEMIC IMPACT ON CHILDREN'S DAILY ROUTINE – SURVEY MADE BY CASCAIS**

Mafalda Correia Manso

Dissertation Report presented as partial requirement for  
obtaining the Master's degree in Information Management.

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Instituto Superior de Estatística e Gestão de Informação  
Universidade Nova de Lisboa

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by

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Information Management, with a specialization in Knowledge Management and Business Intelligence

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## **ABSTRACT**

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From the point of view of the children living in Cascais, it is aimed to study the effects of the COVID-19 pandemic on their lives. A survey was carried out by the Cascais city council and with the results of this, it is intended to get to know the reality of children during this pandemic a little better, as well as their perception of the world around them, the difficulties they are facing with the online education and the changes on their day-to-day life.

**KEYWORDS:** COVID-19; Children; Daily routines; Online Education; Cascais

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## RESUMO

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Através do ponto de vista das crianças residentes em Cascais, pretende-se estudar os efeitos da pandemia do COVID-19 na vida das mesmas. Foi realizado um inquérito pela câmara de Cascais e com os resultados deste almeja-se conhecer um pouco melhor a realidade das crianças durante esta pandemia, bem como a sua perceção do mundo que as rodeia, as dificuldades que estão a enfrentar com o do ensino à distância e as suas alterações na rotina pessoal.

**PALAVRAS-CHAVE:** COVID-19; Crianças; Rotinas diárias; Ensino Online; Cascais

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# 1. INTRODUCTION

With the emerge of COVID-19 and consequent coronavirus pandemic, it was necessary to take preventive measures to protect the population and the spread of the disease, it was therefore required, in some cases, to resort to confinement measures that forced a large part of the population to stay at home.

Among other procedures and due to the general confinement, educational measures were created that led many students, of all ages, to recourse to online education, the effectiveness of this was studied by Viner et al. (2020).

Much has been written about the issue of the pandemic and its effect on the daily habits of young people. For example, Vuković et al. (2021) analyzed daily routines in the Serbian context, Bruni et al. (2021) studied the effect of COVID-19 on daily sleep routines in Italy and Cachón-Zagalaz et al. (2021) examined the physical activity and daily routine in Spain. Besides that, United Nations Educational, Scientific and Cultural Organization (UNESCU) and United Nations Children's Fund (UNICEF) developed questionnaires to present to the Ministry of Education of several countries, in the context of online education and school closures (UNESCU, 2020). There were also studies developed under the perspective of helping the children coping with the pandemic, Lambrese (2020).

To the best of our knowledge, no studies were found about the COVID-19 effects on children's daily routines in the context of Portugal. To fill this gap in the literature, we decided to analyze the questionnaire developed by the Cascais city council (questions in the Annex – table 9.1) to answer the following research question:

RQ: How do children perceive the impact of COVID-19 in their daily routine? What can be done to improve this feeling?

Through this article, which contains data from a survey conducted by the Cascais city council, the objective aims to better understand how children and adolescents are positioned on this topic. Which is their perspective on the current situation and what was the impact felt by them in their daily life. The objective is to be able to understand how these age groups are feeling the effect of the pandemic, be it positive or negative, either at school or at a personal level. It will also be determined what measures they consider important to improve their own experience.

This study is particularly relevant for the Cascais city council because will be gather information about the sentimental situation of Cascais' younger residents regarding the pandemic, as well as the measures they consider necessary to improve their quality of life during these difficult times.

## 2. COVID-19'S IMPACT

Throughout this document, several studies on the effects of covid-19 in children are referred to. In table 2.1 is possible to observe a summary of the studies and respective conclusions. These studies address both the impact of COVID-19 on daily routines, the impact of online education, the impact of confinement on mental health or ways to improve and help children coping with the pandemic.

The COVID-19 pandemic (or coronavirus pandemic) is an ongoing global pandemic caused by a contagious disease created by severe acute, respiratory syndrome coronavirus 2 (SARS-CoV-2). The first cases appeared in December 2019 on China and since then have spread worldwide. On March 2020 was declared the pandemic state by the World Health Organization (World Health Organization, 2020).

In Portugal, the first official cases were identified in early March 2020 and a few days later preventive measures began to take place. These measures started with suspending school activities, limiting access to establishment with places to dance and extension of validity periods (Presidência do Conselho de Ministros, 2020a) and continued with the declaration of Emergency State by the president (Presidência da República, 2020) and the respective rules, such as mandatory teleworking, civic duty of stay-at-home, suspension of retail activities and limitation of public transportation (Presidência do Conselho de Ministros, 2020b).

These measures are constantly evaluated and reformulated. Regarding the education, at the beginning of the academic year 2020/2021, the presential regime was established as the rule regime and the mixed and online regime should be consider exceptionally.

The pandemic has affected all social levels and has been degrading at an economic, political, and educational level, thus triggering diverse emotions in the population, particularly among the youngest.

Although some people can understand some positive effects about COVID-19, the majority of sentiments regarding community quarantine, lockdown, and social distancing is negative and is expected to increase over time (Pastor, 2020).

With the suspension of school activities and the duty to remain at home, the routines of children and adolescents were highly affected.

Although children are not as vulnerable to COVID-19 and its medical effects (Levin et al., 2020), the side effects of the pandemic can affect them. "Children and adolescents may be highly exposed to biopsychosocial stressors generated by the pandemic" (Saggiaro de Figueiredo et al., 2021), may therefore be affected by changes in their daily life routine.

Due to the confinement measures created, the majority of parents had to start working from home, therefore children were not completely isolated during confinement. Despite this,

there are studies showing that they have experienced helplessness (66.11%), worry (68.59%), and fear (61.98%), compared to non-quarantined children (Saurabh & Ranjan, 2020).

Bruni et al. (2021) analyzed the effect of COVID-19 on daily sleep routines in Italy and the impact this had on the screen time of these children. Concluded that the confinement created by the virus caused a big delay in sleep and wake schedule, as well as an increase in sleep disturbances and an increase in screen time.

Vuković et al. (2021) also analyzed daily routines but in the Serbian context, studying learning, physical activity, and screen time routines and concluded that healthy lifestyle habits formed in childhood are suggested to be responsible for the greater “resistance to change” shown by the children.

Cachón-Zagalaz et al. (2021) also studied physical activity and daily routines, this time in the Spanish context and found that the time devoted to sleep was directly proportional to the time they devoted to physical activity and indirectly proportional to the time they spent watching screens.

Although there are several studies on daily routine changes, the questions posed by the Cascais city council questionnaire remain unresolved (questions in the Annex – table 9.1).

With online education, all teaching activities start to work through online digital formats, thus preventing the spread of the virus through social distance. Many countries have decided to adopt this type of regime to help protect the population.

According to the United Nations, education is one of the sectors most affected by the pandemic and UNESCO states that this corona pandemic threatens 577 million students in the world. UNESCO supports countries in their efforts to reduce the direct impact of school closures and to facilitate the continuation of education for all through distance learning (UNESCO, n.d.).

Lambrese (2020) published a journal that explained how to help children deal with the pandemic. The conclusions showed that the ways to help the youngest deal with this situation included an open dialogue policy, creating a structured daily routine and resorting to social media and video to eliminate isolation.

Table 2.1 – Summary of the studies about COVID-19 pandemic impact on children

Author	Context	Conclusions	Local	Year
Bruni et al.	Changes in sleep patterns and disturbances in children and adolescents in Italy during the Covid-19 outbreak	<i>"This study shows that COVID-19 lockdown greatly impacted on the sleep/wake rhythm of children and adolescents, who showed a phase delay and an important increase in screen time, associated with an increase of the prevalence of sleep disturbances."</i>	Italy	2021
Vuković et al.	Children's daily routine response to COVID-19 emergency measures in Serbia	<i>"The research findings suggest that healthy lifestyle habits formed in childhood, emphasizing regular physical activity and study habits, are responsible for the greater "resistance to change" of the children from this study."</i>	Serbia	2021
Cachón-Zagalaz et al.	Physical Activity and Daily Routine among Children Aged 0–12 during the COVID-19 Pandemic in Spain	<i>"During the confinement and the following days, the use of digital screens was the most performed activity, followed with the least amount of time in minutes dedicated to PA in the child population (0–12 years)"</i>	Spain	2021
Viner et al.	School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review	<i>"School closures have been widespread in some countries during influenza pandemics, and many studies report important effects on reducing transmission and the size of the pandemic."</i>	England	2020
Saggioro de Figueiredo et al.	COVID-19 pandemic impact on children and adolescents' mental health: Biological, environmental, and social factors	<i>"Moreover, we emphasize that youngsters can experience not only short- but also long-term consequences of COVID-19 stressors, as they present individual responses."</i>	Brazil	2021
Saurabh and Ranjan	Compliance and psychological impact of quarantine in children and adolescents due to Covid-19 pandemic	<i>"The consistency of the psychological problem in children and adolescents is very high in the present study group. In this study, most (around 68%) of quarantined children showed some or other form of psychological distress which is much higher than the non-quarantined group with statistically significant difference in most of the feelings."</i>	India	2020
Lambrese	CLEVELAND CLINIC JOURNAL OF MEDICINE COVID-19 CURBSIDE CONSULTS Helping children cope with the COVID-19 pandemic	<i>"For some children, adolescents, and families, the COVID-19 pandemic is too much to bear. Those with a history of medical or mental health concerns may have a more difficult time coping with the stressors brought on by the response to the pandemic."</i>	USA	2020
Levin et al.	Assessing the age specificity of infection fatality rates for COVID-19: systematic review, meta-analysis, and public policy implications	<i>"In summary, our analysis demonstrates that COVID-19 is not only dangerous for the elderly and infirm but also for healthy middle-aged adults."</i>	Europe	2020
Pastor	Sentiment analysis of Filipinos and effects of extreme community quarantine due to coronavirus (COVID-19) Pandemic	<i>"It is concluded that most of the twitter users in Luzon have negative sentiment over COVID-19, while some users are speaking about the positive effects, it was miscredited to the coronavirus instead of crediting to the decision such as community quarantine, lockdown and social distancing. It is concluded that negative sentiments increase over time, and it is expected that negative sentiments among twitter users increases."</i>	Philippines	2020

### 3. METHODS

The questionnaire (table 9.1) was created by the Cascais city council, and the data was collected in October and November 2020. Was written in Portuguese and aimed at children from 6 to 17 years old who live in the municipality of Cascais. Parents and children gave their consent to storage and use for analysis the data from their responses.

The original initiative came from UNICEF Portugal, which asked the municipalities of the Children's Friendly Cities Network to collaborate in the dissemination of three questionnaires: one for children and young people, one for families and one for teachers.

The city council decided to amend the original UNICEF questionnaire for children and young people in order to include more relevant questions to:

- Know the impact that this period is having on children and young people.
- Organize and disseminate the information collected to support decision-making on strategies and measures to be adopted.

The questionnaire (table 9.1) is divided into 5 phases: Authorizations, Identification, Current Situation, Daily Routines and Ideas or Suggestions.

#### **Authorizations**

At the beginning of the questionnaire, both children and their parents, must give permission for the questionnaire responses to be collected and analyzed.

#### **Identification**

Contains questions 1 to 3, where information is obtained regarding the date of completion, the cycle of studies attended and the parish where the children live.

#### **Current Situation**

Contains questions 4 to 6a and cover the questions regarding the current state of the world. In these questions, the children explain how far their knowledge of the current situation goes and what are their sources of obtaining that same knowledge. Is also in this chapter of the questionnaire that children express their desire for more information on this subject and in which formats they prefer to receive it.

#### **Daily Routines**

It is the largest section of the questionnaire and contains questions from 7 to 14. In this section children are asked about the changes they have undergone in their routine, about what they have felt during this pandemic (negative, positive, or neutral feelings), about their difficulties, concerns, or positive aspects of their day-to-day. It is also in this chapter where is possible to collect information about the way in which children and young people are being

monitored by different entities (parents, school, council, doctors, etc.) and the easiness with which they access various infrastructures and services (classes, medical appointments, school services, etc.). Finally, in this section is also possible to collect information regarding the advantages and disadvantages of online education.

### Ideas or Suggestions

The final section of the questionnaire corresponds to questions 15 to 18 and allows children to communicate their opinion, through open answers, about what they would like to change to improve their quality of life, what spaces they would like to be created to express their opinions and debating ideas regarding the pandemic and finally, what measures and changes they consider important at the end of the confinement.

The questionnaire was released by UNICEF and by the city council through their website, email and all associations connected with children and young people and their respective networks.

The data collected were made available in excel and will be analyzed in Power BI as it permits the building of visualizations, the use of text analytics methods such as key phrases, and the use of sentiment analysis methods. Using this tool is possible to create reports with valuable insights that will allow to gather useful conclusions regarding this topic.

All results and dashboards obtained during this essay and built with Power BI can be observed and explored through the link:

<https://tinyurl.com/Cascais-COVID>

In total, four reports were created in Power BI – CurrentSituation.pbix, DailyRoutine.pbix, IdeiasAndSuggestions.pbix, Main.pbix – each one for a questionnaire theme. These reports are built by different tables, depending on the data required. In table 3.1 is possible to understand which tables are present in which reports. All the tables have different information and concern different questions:

- Access – contains information related to accesses and its assessment (related to question 12).
- Answers – contains all the answers obtained from the questionnaire carried out by the Cascais city council.
- CurrentSituation – contains information related to the children's source of information regarding the current situation and contains the groups/classes created with that information (related to question 6).
- Follow-up – contains information related to monitoring and follow-up of different institutions and its assessment (related to question 11).
- Question X (where the X corresponds to the question number) – contains the key phrases for question X (related to question 5, 6a, 8, 9a, 9b, 10, 13, 14, 15, 16, 17, 18)

- ScoreSentiment – contains sentiment score analysis (related to question 5, 6a, 8, 9a, 9b, 10, 13, 14, 15, 16, 17, 18).
- ScoreSentiment\_5 – contains sentiment score analysis (related to question 5).
- ScoreSentiment\_6a – contains sentiment score analysis (related to question 6a).
- ScoreSentiment\_16 – contains sentiment score analysis (related to question 16).

Table 3.1 – Tables presented in the data model of the Power BI reports

Data Model Tables	CurrentSituation	DailyRoutine	IdeiasAndSuggestions	Main
Access		X		
Answers	X	X	X	X
CurrentSituation	X			
Follow-up		X		
Question 5	X			
Question 6a	X			
Question 8		X		
Question 9a		X		
Question 9b		X		
Question 10		X		
Question 13		X		
Question 14		X		
Question 15			X	
Question 16			X	
Question 17			X	
Question 18			X	
ScoreSentiment		X	X	
ScoreSentiment_5	X			
ScoreSentiment_6a	X			
ScoreSentiment_16			X	

It is possible to observe an example of the star-schema data model for one of the reports in figure 3.1, the tables inside each Power BI report are connect through an Index column.

In addition to the treatment of data in the tables, some metrics were created to be able to categorize and assess questions 11 and 12. Analysis of sentiments and key phrases were also used to analyze several questions, as already mentioned.

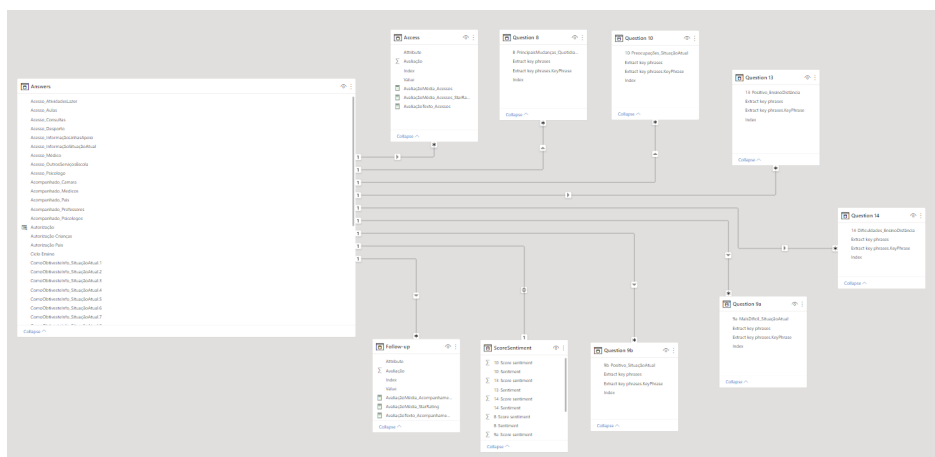


Figure 3.1 – Data model from report DailyRoutine.pbix

A user, such as someone who works at the Council City, who wants to consult this information will always have to start from a main screen present in Main.pbix (figure 3.2), from which he will have links to the other reports with the remaining information. The user can always return to the main screen and continue to explore other reports. Prints from all pages of the four reports can be found in the annex section.

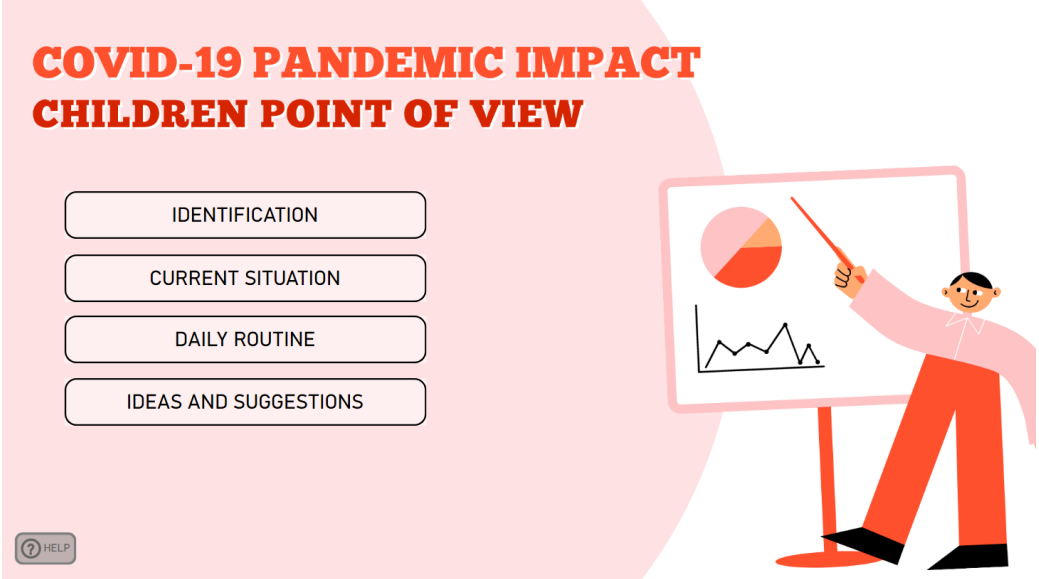


Figure 3.2 – Main screen from report Main.pbix

Each questionnaire question is presented in a different page inside the report. The graphics in each page can be filtered (figure 3.3), in order to obtain more insights, using slicers with the cycle of studies and parish data. Throughout all the reports, several visualizations are created – bars charts, wordclouds, treemaps, donut charts, tables and matrixes – according to the best way to represent and explore the data.



Figure 3.3 – Education Cycle and Parish Slicers



## 4. RESULTS

In this section of the essay will be presented the results obtain through the graphics made in each pbix file. When any value stands out significantly from the others in a table, it will be underlined in grey, to facilitate reader identification.

### Identification (information presented in Main.pbix)

Seven hundred and eighty-two responses were obtained, whose treatment and analysis of data was authorized by both parents and children, so to gather results and conclusion it will only be used these answers.

By analyzing the distribution of the sample according to the cycle of studies and the parish where the children lived, the results presented in table 4.1 were obtained.

As only one student from higher education is present in the answers to the questionnaire (table 4.1), we are not going to include any analysis relating to that cycle of education.

In the cycle of education perspective (table 4.1), more answers were obtained by 3rd cycle students and few from 1st cycle. On the other hand, in the parish perspective (table 4.1), Cascais and Estoril was the area with greater number of answers and Alcabideche the one with few.

Table 4.1 – Survey answers distributed by study cycle and by parish

Cycle of Education	No. Answers	Parish	No. Answers
1º ciclo	112	Alcabideche	110
2º ciclo	162	Carcavelos e Parede	203
3º ciclo	285	Cascais e Estoril	232
Ensino Secundário	222	São Domingos de Rana	227
Ensino Superior	1		

If we cross the teaching cycle with the parish, we can see if the proportions of students among the parishes are equivalent or if there is any discrepancy that could affect the conclusions.

When observing table 4.2, we see that for two parishes, the values are slightly different from usual. Being lower in the 1st cycle and higher in the 2nd cycle for the parish of Carcavelos and Parede and the opposite in Alcabideche.

Besides this, there are no values that are significant or deserve to be mention for our analysis.

Table 4.2 – Distribution of students by parishes (percentage)

Cycle of Education (%)	Alcabideche	Carcavelos e Parede	Cascais e Estoril	São Domingos de Rana
1º ciclo	29.09	5.91	13.85	14.98
2º ciclo	10.91	29.06	17.32	21.15
3º ciclo	35.45	38.92	38.53	33.92
Ensino Secundário	24.55	26.11	30.30	29.96

### Current Situation (information presented in CurrentInformation.pbix)

Regarding the current situation, 90% of children are fully aware of what is going on and 8% partially know what is happening in the world. This leaves a residual value of 2% who do not know what is happening. This information is displayed in table 4.3.

Table 4.3 – Knowledge of the current situation (percentage)

Knowledge Current Situation	Percentage (%)
Sim, sei	90.16
Sei, mas apenas parcialmente	8.29
Não sei bem	1.55

It is possible to examine the results based on the children's education cycle, as shown in table 4.4 where percentage values are calculated based on the column.

The greatest discrepancy is present in the answers from students of the first cycle (table 4.4), which by natural order are younger, where the percentage of not knowing the situation is around 7%, while in the other teaching cycles is close to 1%.

It is also possible to observe that 3rd cycle and high school students (table 4.4) have a similar knowledge to each other.

Table 4.4 – Knowledge of the current situation by study cycle (percentage)

Knowledge Current Situation (%)	1st cycle	2nd cycle	3rd cycle	High School
Sim, sei	73.21	87.65	94.39	95.05
Sei, mas apenas parcialmente	19.64	11.11	4.91	4.50
Não sei bem	7.14	1.23	0.70	0.45

When carrying out an analysis similar to the previous one but calculating the percentages taking into account the parishes to which the answers belong, no significant results are obtained, the values being similar between all parishes, this can be seen in table 4.5.

Table 4.5 – Knowledge of the current situation by parish (percentage)

Knowledge Current Situation (%)	Alcabideche	Carcavelos e Parede	Cascais e Estoril	São Domingos de Rana
Sim, sei	90.91	90.64	89.22	90.31
Sei, mas apenas parcialmente	6.36	6.90	10.34	8.37
Não sei bem	2.73	1.23	0.70	0.45

As for the description that the children made of the current state, the responses were mostly classified as having a negative feeling, thus obtaining 409 negative responses, 107 positive and 39 neutral.

The wordcloud developed to analyze the keywords of the different responses regarding the knowledge of the current situation (figure 4.1), focused mainly on the words: pandemic, virus and COVID. Less prominently, it is possible to observe several expressions and words related to the hygiene and safety guidelines and the rules established during this epidemic.



Figure 4.1 – Knowledge of the current situation wordcloud

The children's information about the current situation was obtained from different sources, as can be seen in table 4.6.

Is possible to examine that Parents and Television (table 4.6) are the more common source of information, together representing almost 50% of all the channels to obtain information regarding the current state.

Is also viable to see that brochures or flyers (table 4.6) have a residual number of answers assigned and represent less than 1% of the responses.

Table 4.6 – Survey answers distributed by Source of Information (percentage)

Source of Information (%)	Answers
Através de amigos	7.52
Pais ou Encarregados de Educação	23.74
Outros familiares	7.26
Professores ou educadores	13.95
Através da televisão	23.33
Pelas redes sociais	12.78
Em sites (com informação)	6.96
Jornal ou revista	3.40
Através de brochuras ou folhetos	0.60
Outros	0.45

By analyzing the sources of information according to the level of education, we obtain the results presented in table 4.7.

It is possible to analyze that with a higher level of education some sources of information (table 4.7) tend to be more chosen – Through friends; Through social networks; On websites (with information); Newspaper or magazine.

The opposite is true for other sources (table 4.7) – Parents or Guardians; Teachers or educators.

In general, the rest (table 4.7), tend to have a similar value regardless of the study cycle.

Although there are significant changes depending on the cycle of studies (table 4.7), it is important to mention that no matter what the student's cycle of study, the preferred source of information continues to be parents and television. And that brochures and flyers continue to represent less than 1% of the responses.

Table 4.7 – Source of Information by study cycle (percentage)

Source of Information (%)	1st cycle	2nd cycle	3rd cycle	High School
Através de amigos	3.86	4.71	9.02	8.52
Pais ou Encarregados de Educação	37.89	29.12	22.04	18.27
Outros familiares	7.02	7.49	7.41	7.06
Professores ou educadores	22.46	16.7	12.73	11.21
Através da televisão	23.86	28.05	23.35	20.63
Pelas redes sociais	2.46	8.35	15.33	15.58
Em sites (com informação)	1.40	2.57	6.91	10.99
Jornal ou revista	0	1.93	2.2	6.61
Através de brochuras ou folhetos	0.35	0.64	0.70	0.56
Outros	0.7	0.43	0.3	0.56

When doing an analysis in the same way as the previous one, but in order to calculate the percentages taking into account the parishes to which the answers belong (table 4.8), no significant results are obtained. Typically, the choice of the information source has a similar value regardless of the parish.

Table 4.8 – Source of Information by parish (percentage)

Source of Information (%)	Alcabideche	Carcavelos e Parede	Cascais e Estoril	São Domingos de Rana
Através de amigos	22.77	23.7	22.51	23.94
Pais ou Encarregados de Educação	0.58	0.98	0.26	0.51
Outros familiares	6.92	6.03	7.2	7.3
Professores ou educadores	2.88	3.37	3.66	3.07
Através da televisão	7.2	7.15	7.07	7.68
Pelas redes sociais	26.22	23.28	22.51	24.58
Em sites (com informação)	9.8	13.18	14.79	11.91
Jornal ou revista	15.56	14.45	13.48	13.44
Através de brochuras ou folhetos	7.78	7.57	7.98	6.91
Outros	0.29	0.28	0.52	0.64

To finish the questions regarding the current pandemic situation, results were gathered regarding what children would like to have more information and how they would like to receive it. The responses obtained were mostly classified as negative, thus obtaining 328 negative responses, 136 positive and 14 neutral.

Through the wordcloud created (figure 4.2), is feasible to see that the most prominent words are information, which by itself doesn't mean much and COVID. Less notably appear words such as digital format, television, social networks, school and no.



Figure 4.2 – More information regarding the current situation and respective sources

### Daily Routines (information presented in DailyRoutine.pbix)

Regarding the analysis of daily routine changes, 52% of children confirm that they have changed many behaviors in their daily routine and 41% admit to having changed some things. Only 6% say they have changed few behaviors and there is still a residual value of 1% that says they have not undergone any change. This information is displayed in table 4.9.

Table 4.9 – Daily routines changes (percentage)

Daily Routines Changes (%)	Percentage (%)
Sim, mudei muitas coisas	52.05
Sim, mudei algumas coisas	40.90
Mudei poucas coisas	6.03
Não mudei nada	1.03

It is possible to observe the results based on the children's education cycle, as shown in table 4.10 where percentage values are calculated based on the column.

In general, the answers are similar regardless of the cycle of studies (table 4.10), the only exception being the 2nd cycle. The students from that cycle have a higher percentage of answers corresponding to changing a lot of situations and a lower percentage for changing some or few behaviors, being 62%, 34% and 3% respectively.

Table 4.10 – Daily routines changes by study cycle (percentage)

Daily Routines Changes (%)	1st cycle	2nd cycle	3rd cycle	High School
Sim, mudei muitas coisas	50.00	62.73	48.42	50.00
Sim, mudei algumas coisas	42.86	34.16	43.51	41.44
Mudei poucas coisas	6.25	2.48	6.32	8.11
Não mudei nada	0.89	0.62	1.75	0.45

A similar analysis, but in order to calculate the percentages taking into account the parishes to which the answers belong, is shown in table 4.11.

As relevant findings is possible to find that Carcavelos and Parede (table 4.11) was the parish where most children have not changed at all, presenting 8% of responses stating that nothing was changed in their daily routine.

Is also possible to identify that Cascais and Estoril (table 4.11) was the parish where more people changed some behavior (45%).

Table 4.11 – Daily routines changes by parish (percentage)

Daily Routines Changes (%)	Alcabideche	Carcavelos e Parede	Cascais e Estoril	São Domingos de Rana
Sim, mudei muitas coisas	54.55	50.74	48.92	54.63
Sim, mudei algumas coisas	39.09	40.39	44.59	38.77
Mudei poucas coisas	0.91	0.99	0.87	1.32
Não mudei nada	5.45	7.88	5.63	5.29

To analyze the main changes identified in the questionnaire, the responses obtain were mainly classified with a negative feeling, thus having 414 negatives and 219 positives, leaving 27 neutral.

In the wordcloud (figure 4.3) created to analyze those changes, is possible to observe in great prominence words such as mask, hands, social distance and in lesser prominence words related to alcohol gel, school, physical contact, routines and friends and family.



Figure 4.3 – Daily routines changes wordcloud

Regarding the way in which the pandemic has been reflected in their daily life, 61% consider it a negative experience, 23% indifferent and 15% positive. This information is in figure 4.4.

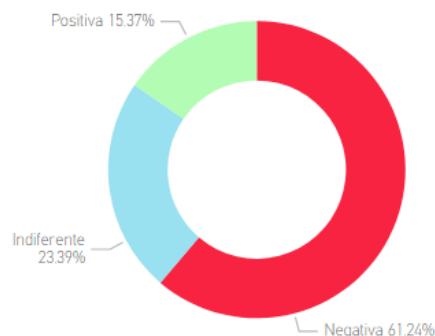


Figure 4.4 – Impact of the pandemic in the daily routines

It is possible to observe this impact based on the children's education cycle, as shown in table 4.12 where percentage values are calculated based on the column.

With the increase of the teaching cycle and the consequent increase in age (table 4.12), the percentage of students who consider this experience to be positive decreases, going from 20% among students in the first cycle to only 9% among students in high school education.

It is also interesting to note that students in the 3rd cycle (table 4.12) are the ones with the lowest percentage to consider this situation negative and, in turn, the highest percentage in terms of indifference, reaching 28%.

**Table 4.12 – Daily routines effects by study cycle (percentage)**

Daily Routines Effects (%)	1st cycle	2nd cycle	3rd cycle	High School
Positiva	19.82	17.61	17.08	9.46
Negativa	63.96	62.26	55.16	66.67
Indiferente	16.22	20.13	27.76	23.87

By making an analysis similar to the previous one, but in order to calculate the percentages taking into account the parishes to which the answers belong, is also possible to draw meaningful results. This information is exhibited in table 4.13.

São Domingos de Rana (table 4.13) is the parish with the lowest positive percentage, only 14% of the responses, and the highest negative, with 65 percent.

On the other hand, Carcavelos and Parede (table 4.13) has the lowest negative percentage, only 57%, and the highest indifferent percentage, corresponding to almost 26%.

**Table 4.13 – Daily routines effects by parish (percentage)**

Daily Routines Effects (%)	Alcabideche	Carcavelos e Parede	Cascais e Estoril	São Domingos de Rana
Positiva	19.09	16.83	14.10	13.72
Negativa	60.91	57.43	61.23	64.60
Indiferente	20.00	25.74	24.67	21.68

A wordcloud was also created to highlight positive and negative situations. The words with the greatest positive emphasis were family, home, friends, online classes, pollution, and environment. Those with the most negative emphasis were mask, friends, social distancing, and isolation.

In order to analyze what concerns children the most, a wordcloud was created where the results of figure 4.5 were obtained. The answers were mostly classified with a negative feeling, thus having 475 negatives and 122 positives, leaving 28 neutral.



In the wordcloud (figure 4.5) is possible to notice in great distinction words such as COVID, virus, family, grandparents, sick and fear. With less importance, can be identified words related to friends, risk, school, health, anxiety, and future.



Figure 4.5 – Worries and concerns wordcloud

With the objective to classify the monitoring of different entities, the results of figure 4.6 were obtained. The star rating meaning is attributed according to the information presented in table 4.14.

Table 4.14 – Star Rating meaning for the follow-up

Star Rating	Meaning
One Star	Nada ou quase nada acompanhado
Two Stars	Pouco acompanhado
Three Stars	Bem acompanhado, mas gostaria que fosse mais
Four Stars	Muito bem acompanhado

The greatest attention felt by students (figure 4.6) comes from parents, that have a classification of very well-accompanied, and the worst evaluation is given to psychologists with barely accompanied.

Attribute	StarRating	Evaluation
Acompanhado_Camara	★★★★☆	Bem acompanhado. mas gostaria que fosse mais
Acompanhado_Medicos	★★★★☆	Bem acompanhado. mas gostaria que fosse mais
Acompanhado_Pais	★★★★★	Muito bem acompanhado
Acompanhado_Professores	★★★★☆	Bem acompanhado. mas gostaria que fosse mais
Acompanhado_Psicologos	★★★☆☆	Pouco acompanhado

Figure 4.6 – Evaluation and Star Rating of the follow-up

It is possible to carry out the same analysis but based on the children's education cycle as shown in figure 4.7.

In general, there are no significant changes, which means that the classification given to the different entities (figure 4.7) does not depend on the cycle of studies but, exist two exceptions.

First, the classification of the monitoring of the city council (figure 4.7) by students in the first cycle, is considered lower than the rest and second, the classification of the caring of doctors by high school students is also considered lower than the rest.

Attribute	1º ciclo (1º ao 4º ano)	2º ciclo (5º ou 6º ano)	3º ciclo (7º ao 9º ano)	Ensino secundário (10º ao 12º ano)
Acompanhado_Camara	★★☆☆	★★★★	★★★★	★★★★
Acompanhado_Medicos	★★★★	★★★★	★★★★	★★☆☆
Acompanhado_Pais	★★★★	★★★★	★★★★	★★★★
Acompanhado_Professores	★★★★	★★★★	★★★★	★★★★
Acompanhado_Psicologos	★★☆☆	★★★★	★★★★	★★★★

Figure 4.7 – Star Rating of the follow-up by study cycle

When carrying out an analysis like the previous one, but to obtain the classifications considering the parishes to which the answers belong, we do not obtain significantly different results, as can be seen in figure 4.8.

The classification (figure 4.8) does not depend on the parish where the student resides, the only exception being the classification of teachers by the parish of Alcabideche, which is considered superior to the others.

Attribute	Alcabideche	Carcavelos e Parede	Cascais e Estoril	São Domingos de Rana
Acompanhado_Camara	★★★★	★★★★	★★★★	★★★★
Acompanhado_Medicos	★★★★	★★★★	★★★★	★★★★
Acompanhado_Pais	★★★★	★★★★	★★★★	★★★★
Acompanhado_Professores	★★★★	★★★★	★★★★	★★★★
Acompanhado_Psicologos	★★☆☆	★★★★	★★★★	★★★★

Figure 4.8 – Star Rating of the follow-up by parish

Access to various activities were also classified and the results are presented in figure 4.9. The star rating meaning for this classification is attributed according to the table 4.15. The star rating is calculated taking in consideration the average of responses.

Table 4.15 – Star Rating meaning for the access

Star Rating	Meaning
Zero Stars	Sem acesso
One Star	Difícil
Two Stars	Fácil



A wordcloud was also created to analyze the disadvantages and downsides of online education, as shown in figure 4.11.

The answers were mostly classified with a negative feeling, thus having 424 negative and 99 positives, leaving 27 neutral.

In the wordcloud (figure 4.11) it is possible to observe in great relevance words such as teachers, friends, school subjects, doubts and in less notoriety words such as classes, computer, monitoring, lack of contact, learning and concentration.



Figure 4.11 – Disadvantages of online education wordcloud

### Ideas or Suggestions (information presented in IdeasAndSuggestions.pbix)

With the objective of analyzing what children would like to see changed if the pandemic situation continues, a wordcloud was created and the results are present in figure 4.12. The answers were mostly classified with a negative feeling, thus having 319 negative and 168 positives, leaving 37 neutral.

In the wordcloud (figure 4.12) it is possible to observe in great emphasis words such as school, better school hours, family, and vaccine and in lesser emphasis words related to spaces, parks, going back to school, help and life.

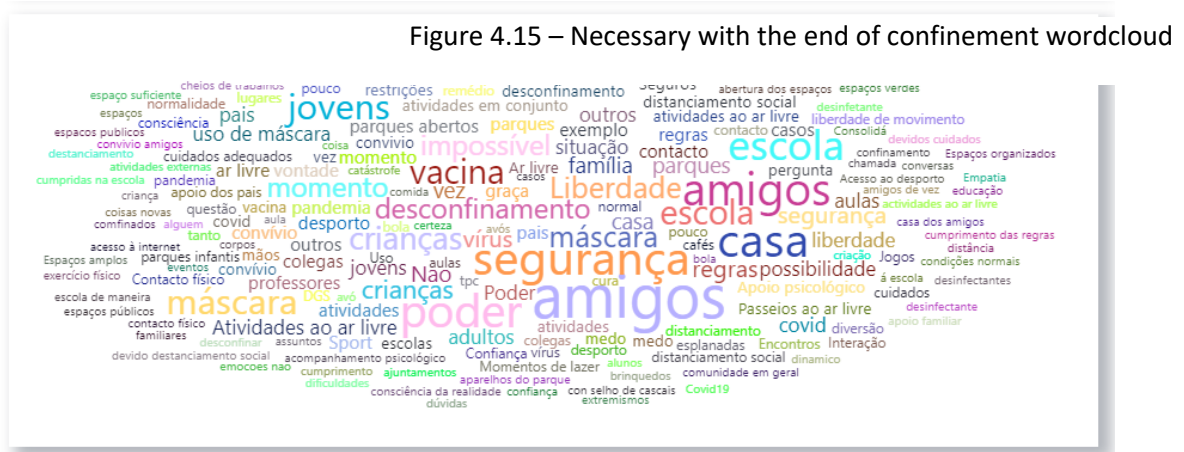


Figure 4.12 – Changes if the pandemic state lasts wordcloud



Finally, to analyze what they consider necessary with the end of the confinement, a wordcloud was created where the results of figure 4.15 were obtained. The responses were balanced, thus having 228 positive and 218 negatives, leaving 41 neutral.

Is possible to examine (figure 4.15) in great prominence words like friends, security, home and school and in less importance words related to freedom, vaccine, ower, mask, sport and activities.



Besides this, doesn't exist results that are significant or deserve to be mentioned for our analysis.

In table 4.16 is presented a summary of all the findings related to which question of the questionnaire.

**Table 4.16 – Summary of findings for each question of the questionnaire**

Theme	Questions	Findings
Identification	Q2, Q3	Carcavelos and Parede has fewer students from 1st cycle and more from 2nd cycle. Alcabideche has fewer students from 2nd cycle and more from 1st cycle.
Current Situation	Q4	90% of children are fully aware of what is going. 7% of the children from 1st cycle don't know well what is going on.
	Q5	Understand that we are leaving in a pandemic state cause by a virus called covid-19. Understand the hygiene and safety guidelines and the rules established during this pandemic.
	Q6	50% of the children obtain information from TV or parents. With the increase of the study cycle, the preference for social networks, friends and websites increases. Brochures and flyers represent less than 1% of the choices.
	Q6a	Exists evidence that the children don't want more information but if they receive more that want it deliver by digital formats or social media.
Daily Routines	Q7	90% changed many or some behaviors. Children from 2nd cycle have a higher percentage of changing many behaviors and lowest of changing some and few. Carcavelos and Parede has the highest percentage (8%) of not changing

		anything.
	Q8	Main changes are related with the sanitary measures and social distancing.
	Q9	60% feel negatively about this situation. With the increase of study cycle the percentage of positive feeling decreases. Children from 3rd cycle have the higher percentage of indifferent. Carcavelos and Parede has the higher percentage of indifferent. São Domingos de Rana has the lowest percentage of positives and the highest of negatives.
	Q10	Many answers had a negative feeling. The answers contained a lot of fear to be sick or fear of someone of the family to be sick (grandparents manly)
	Q11	Parents have the best evaluation. Children from 1st cycle consider the city council evaluation lower. Children from high school consider the medical evaluation lower. Children from Alcabideche consider professors evaluation higher. Psychologists have the worst evaluation.
	Q12	Classrooms, Doctor appointments, Information, School Services have higher number of answers easy. Leisure and sports have higher number of answers difficult. Psychologists have a higher number of answers no access.
	Q13	The advantages are more related with security and autonomy.
	Q14	The difficulties are more related with isolation, computer, monitoring, lack of contact, learning and concentration.
Ideas and Suggestions	Q15	To improve the situation were referred words like vaccination, better school schedule, end of masks use, going back to school and parks
	Q16	Children show interest in speaking and be heard
	Q17	They want to express their opinion through like meetings, appropriate space, surveys, and schools
	Q18	They want to feel safe, to stop the sanitary measures and to be with friends and family and play sports and do outdoors activities

## 5. DISCUSSION

It was defined in the previous chapter that no conclusions would be drawn about the answers given by students attending the university.

Thus, the discussion of the results can start by noticing that the distribution of student responses is not the same for all parishes in Cascais (table 4.2).

When compared to other parishes, we can see that in Carcavelos (table 4.2) there are fewer students belonging to the 1st cycle and more students in the 2nd cycle and that the same is inverse in Alcabideche.

Therefore, due to the age differences between students from different cycles is normal for us to notice discrepancies in the responses of the quiz.

Since 90% of children (table 4.3) are fully aware of the pandemic situation the planet is going through, we can assume that the answers being analyzed will make sense and start from a well-informed base.

Even so, and as would be expected due to their younger age, students belonging to the 1st cycle of studies (table 4.4) have a higher percentage of ignorance about the current situation, which can also influence the answers under discussion.

Children know about the pandemic (figure 4.1) and the COVID-19 virus. They also have knowledge about the safety measures, the hygiene guidelines and other rules established during the confinement.

The results presented in table 4.5 are not relevant or significant, because the percentage of knowledge is similar between all the parishes.

Most of these children's knowledge was obtained through parents and television (table 4.6), followed by teachers and social networks.

Is possible to obtain analysis with greater significance if we look at the cycle of studies to which children belong and consider their possible age.

With the increase in the study cycle and the consequent increase in age, there are sources of information (table 4.7) that are being changed for others.

While the information (table 4.7) that is obtained through friends increases in importance, both obtained by parents and teachers decreases with the increasing of age. With this increase, the information consumed through social networks and internet sites also increases.

It seems that with the growth of these children, their freedom also grows, so they choose to increasingly seek and share among themselves their information regarding the pandemic and the current situation.



This is also possible to analyze through figure 4.2 which demonstrates that children would like to gain more knowledge about COVID through digital formats, social networks, and school.

The results presented in table 4.8 are not relevant or significant, because the percentage of using certain source of information is similar between all the parishes.

About 93% of the children (table 4.9) who responded admitted having changed some or many behaviors in their daily routine.

By analyzing these responses taking into account the individual's study cycle, a more insightful discussion of results is obtained.

Noticed that, in general, all students, regardless of study cycle and consequent age, respond in a similar way, except for 2nd cycle students (table 4.10). These have a much higher percentage than the rest of students who have changed many routine behaviors, even though it is bizarre, this data alone does not allow for interesting conclusions to be drawn.

When analyzing the changes contemplating the parish where the children live, the results are different from what is common for Cascais and Estoril and for Carcavelos and Parede (table 4.11).

Regarding the first one, no very interesting conclusions are drawn, it was only detected a higher number of responses stating that they changed something in their routine.

On the other hand, the second group of parishes has a greater number of students who claim they have not changed anything in their daily lives. However, we have previously observed that Carcavelos e Parede has a higher number of students in the 2nd cycle of studies (table 4.2) and we also verified that these students are the ones who claim in a higher percentage to have changed many aspects of their life (table 4.10), thus it is quite unexpected that this parish is the one with the highest percentage of responses claiming that nothing has changed.

When identifying the main changes experienced by these children, words related to preventive measures against the spread of the virus were identified with greater emphasis – using a mask, disinfecting hands, keeping social distance, and avoiding physical contact – followed by words more related to their life staff such as school, friends, and family (figure 4.1).

Thus, we can conclude that the changes that most affected children were those related to virus prevention, hygiene, and safety measures that before the pandemic were not commonly used in people's daily lives.

This pandemic has been reflected negatively in more than half of children (figure 4.4), with only 15% considering that it has been reflected positively.

With the increase of the study cycle, the percentage of students who consider this situation to be positive decreases substantially (table 4.12). This situation may be due to the higher

level of knowledge about the current situation that older children have (table 4.4) and/or due to the fact that restrictions become stricter with increasing age.

In the particular case of the 3rd cycle (table 4.12), there was a much higher number of responses that indicate that the pandemic has been indifferently reflected in their lives, which consequently caused a small decrease in negative responses.

When looking at how the pandemic has been reflected in daily life based on the parishes, we get two interesting cases (table 4.13).

In the parish of Carcavelos and Parede (table 4.13), we can see a lower number of negative responses, which makes sense as we previously verified that this parish has a higher number of students in the 2nd cycle (table 4.2) and that, in turn, the lower the age group, the higher the percentage of responses stating that the pandemic had positive feedback (table 4.12).

In the parish of São Domingos de Rana (table 4.13), different values were also identified from the other parishes, with the lowest percentage of positive responses and the highest percentage of negative effects, in this parish, students show a more pessimistic perspective.

Through wordclouds it is possible to identify which themes are seen more positively and more negatively. When referring to positive situations, words more related to personal matters or the environment are mentioned. In negative situations they appear more related to safety and isolation rules.

Thus, we can conclude that the positive perspective of children is more related to environmental issues and family proximity and that the negative emphasis is interlinked with the main changes in the routine (figure 4.3), that is, it relates to sanitary guidelines and lack of proximity to other people.

Likewise, what worries children most is the virus and the possibility of getting sick as well as the consequent impact on their family, especially the elderly (figure 4.5). These concerns are followed by concerns about the school environment and its future.

It was also studied how different entities have supported and accompanied children (figure 4.6).

The greatest follow-up has come from parents (figure 4.6), which makes sense since family routines and dynamics have changed with the beginning of online education.

Monitoring by the City Council, doctors, and teachers (figure 4.6) was considered good, but insufficient, and could therefore be improved.

Psychologists (figure 4.6) had the worst results, with the classification “little accompanied”, this may be due to the fact that it is not very common to use this type of professional service.

Through the analysis based on the study cycles, it was possible to observe that the classification is independent of the level of education, since it does not change with it (table 4.7).

Only two differences were detected (figure 4.7): 1st cycle students consider the monitoring of the city council to be inferior to the other cycles, which can be explained by the fact that they have less knowledge and contact with it; High school students consider that they are “little accompanied” by doctors, a possible explanation for this is that these students feel less need to resort to medical services.

Making a similar analysis, but based on the parishes, only Alcabideche differed in the classification of teachers (figure 4.8). This one was considered above average (“Very well accompanied”) and we know that this parish has more 1st cycle children (table 4.2) who, due to their young age, may have closer relationships with teachers and therefore value and give more importance to their work.

The ease of access that these students have to different entities and infrastructures was also studied (figure 4.9).

There are a very high number of children (figure 4.9) without access to psychologists or help lines. On the other hand, there was a high number of responses claiming that there is easy access to classes, information on the current situation, school services, medical appointments and help lines.

Note here that exists a discrepancy regarding the helplines (figure 4.9), there are simultaneously several students saying they do not have access and several students saying that access is easy.

This may be due to lack of knowledge about the topic and how to obtain this information and/or the lack of need to use this service.

Again, psychologists are weakly classified (figure 4.9), which may be due to the low use of this service. Leisure activities and sports were defined as difficult to access, which makes sense to happen in this panorama since several restrictions were created that aim at social distancing. The results of access ratings do not significantly depend on the level of studies or region.

When asked about the advantages of online education, the words that stood out the most in the answers given by the children were related to being at home, having autonomy and security (figure 4.10).

This makes sense, since with this type of teaching the probability of contracting the virus decreases as there are less human contact and on the other hand the responsibility of students increases, since they are not in a classroom environment being supervised by a teacher, thus having more freedom for being at home.

On the other hand, several disadvantages were presented, such as having to learn from a computer, lack of follow-up and lack of contact with other people and having difficulty concentrating (figure 4.11).

To improve the quality of life of these children, with the possibility of the pandemic state continuing, themes such as better school hours and vaccination were mentioned with greater emphasis (figure 4.12), which again demonstrates the displeasure with the situation of online education and the concern with pandemic rules and family health (figure 4.5).

Less prominently were mentioned words (figure 4.12) that demonstrate willingness to return to the normality of classes and outdoor spaces, such as parks.

Children showed willingness to express their opinion through appropriate spaces such as the school or through meetings created to debate this topic and generate new ideas (figure 4.13).

With the end of confinement, children want to regain freedom, return to schools and sports activities (figure 4.14). They also hope to be able to be safe and emphasize the possibility of being vaccinated and not having to use masks to feel protected.

## 6. CONCLUSION

Through the analysis of the questionnaire carried out by Cascais for students aged 6-17 in that municipality, it was possible to gather several conclusions and understand how they are feeling the impact of the current pandemic in their lives.

Generally speaking, this situation had a negative effect and triggers many concerns in children. As the age of these children increases, so does their level of knowledge and consequent concern with the current state of the planet.

Thus, they demonstrate concerns about the virus and the possibility that they or their family members may become ill. They also demonstrate concerns about the school environment and its future from now on.

The parish of São Domingos de Rana shows signs of being the one with students who see this situation in a more negative way, when compared to the others.

As points of positive impact in this situation, the environmental improvement that took place at the beginning of the confinement was identified as the most relevant.

The main changes that most affected these students are related to security, hygiene, and virus prevention measures. These were the ones that most affected them and that they hope to be able to avoid when the situation returns to normal.

Students who admit to having changed more habits were those from the 2nd cycle, who must have felt more abruptly all the changes they went through. On the other hand, in the parish of Carcavelos e Parede, there is a greater number of students who claim not to have changed their routine habits.

When we focused on the new form of teaching – online teaching – the lack of monitoring, the difficulty in concentrating and learning through a computer and the social isolation felt were presented as disadvantages.

Regarding the advantages, it was identified as a beneficial situation for the safety and prevention of contact with the virus and for the increase of students' autonomy, because they need to have higher levels of responsibility to maintain the same level of academic success.

These children feel more support from their guardians, followed by the City Council, doctors and teachers.

Regarding 1st cycle students, the Cascais Council can improve its presence, as they were the ones who gave it a worse classification, possibly due to lack of contact and knowledge. The parish of Alcabideche, which has a higher proportion of students in the 1st cycle, was the one that best classified the teachers' caring.

Concerning access to services, classes, obtaining information and doctor appointments were classified as easy access, which may indicate that these services are doing their job in an adequate way.

Difficult access was attributed to all activities that go against the safety guidelines implemented during the pandemic, i.e., leisure and sports activities.

It is important to note that several questions regarding psychologists and helplines do not allow for clear answers. Due to the way the question is constructed, it is not possible to detect whether the negative ratings and lack of access are due to non-use of this service or due to its poor quality. To better understand this theme, it would be important to rephrase these questions to become more explicit.

Children reported getting most of the information about the current pandemic situation from their parents, television, and teachers. But with the increase in the study cycle, the answers change, with older people having a greater preference for obtaining knowledge through friends and social networks.

Thus, depending on the study cycle and age group, different strategies must be applied by the Cascais Council to get in touch with young people. While to reach a more childlike audience, such as the 1st cycle, it is preferable to use information sources such as parents, teachers or television, with the increase in age and knowledge of the public, it is possible to resort to other means of information like social media.

Finally, the children showed great desire to return to normality and resume school and sports activities as they did before the pandemic, without having to resort to masks or other prevention methods. The desire to get the vaccine and to have a better school schedule was demonstrated.

In order to give their opinion, ideas or suggestions regarding this topic, they propose the creation of appropriate spaces in schools, with meetings created to debate this topic.

The results and discussion obtainable in this essay were presented to the Cascais city council and the feedback received was very positive. The answers and insights analyzed in this study answer the questions raised by the city council and help in creating new measures to improve children's lives. Through the reports created, they managed to gain a better understanding of the feelings of these children and their concerns and apprehensions concerning the current situation. It was also possible to realize which services and infrastructure should be improved and with the help of the reports created, the city council will be able to define action measures in the areas they consider most important.

## 7. LIMITATIONS

Sentiment analyzes were performed using Power BI's smart tools. Sometimes, when comparing the transmitted feeling (positive, negative, or neutral) of a certain sentence with what was actually written by the student, inconsistent results were obtained.

Therefore, throughout this document not much relevance has been given to this part of the study.

It is recommended that for future analysis and studies a more adequate tool be used for the study of feelings, in order to be able to produce better insights and obtain better conclusions.

## 8. REFERENCES

- Bruni, O., Malorgio, E., Doria, M., Finotti, E., Spruyt, K., Melegari, M. G., Villa, M. P., & Ferri, R. (2021). Changes in sleep patterns and disturbances in children and adolescents in Italy during the Covid-19 outbreak. *Sleep Medicine*, (in press).  
<https://doi.org/https://doi.org/10.1016/j.sleep.2021.02.003>
- Cachón-Zagalaz, J., Zagalaz-Sánchez, M. . L., Arufe-Giráldez, V., Sanmiguel-Rodríguez, A., & González-Valero, G. (2021). Physical Activity and Daily Routine among Children Aged 0–12 during the COVID-19 Pandemic in Spain. In *International Journal of Environmental Research and Public Health* (Vol. 18, Issue 2). <https://doi.org/10.3390/ijerph18020703>
- Lambrese, J. V. (2020). *CLEVELAND CLINIC JOURNAL OF MEDICINE COVID-19 CURBSIDE CONSULTS Helping children cope with the COVID-19 pandemic*.  
<https://doi.org/10.3949/ccjm.87a.ccc010>
- Levin, A. T., Hanage, W. P., Owusu-Boaitey, N., Kensington, ., Cochran, B., Walsh, S. P., & Meyerowitz-Katz, G. (2020). Assessing the age specificity of infection fatality rates for COVID-19: systematic review, meta-analysis, and public policy implications. *European Journal of Epidemiology*, 35, 1123–1138. <https://doi.org/10.1007/s10654-020-00698-1>
- Pastor, C. K. (2020). Sentiment analysis of Filipinos and effects of extreme community quarantine due to coronavirus (COVID-19) Pandemic. *Available at SSRN 3574385*.
- Presidência da República. (2020). *Decreto do Presidente da República n.º 14-A/2020*. Diário Da República. <https://dre.pt/web/guest/pesquisa/-/search/130399862/details/normal?l=1>
- Presidência do Conselho de Ministros. (2020a). *Decreto-Lei n.º 10-A/2020*. Diário Da República. <https://dre.pt/home/-/dre/130243053/details/maximized>
- Presidência do Conselho de Ministros. (2020b). *Decreto n.º 2-A/2020*. Diário Da República. <https://dre.pt/home/-/dre/130473161/details/maximized>
- Saggiaro de Figueiredo, C., Capucho Sandre, P., Catarina Lima Portugal, L., Mázala-de-Oliveira, T., da Silva Chagas, L., Raony, I., Soares Ferreira, E., Giestal-de-Araujo, E., Araujo dos Santos, A., & Oliveira-Silva Bomfim, P. (2021). COVID-19 pandemic impact on children and adolescents' mental health: Biological, environmental, and social factors. *Progress in Neuropsychopharmacology & Biological Psychiatry*, 106, 110171.  
<https://doi.org/10.1016/j.pnpbp.2020.110171>
- Saurabh, K., & Ranjan, S. (2020). Compliance and psychological impact of quarantine in children and adolescents due to Covid-19 pandemic. *The Indian Journal of Pediatrics*, 87, 532–536.
- UNESCO. (n.d.). *Education: From disruption to recovery*.  
<https://en.unesco.org/covid19/educationresponse>
- UNESCO, U. (2020). *Survey on National Education Responses to COVID-19 School Closures*. UNESCO Institute for Statistics (UIS), Based on UNESCO-UNICEF-World Bank Survey on National Education. <https://infogram.com/final-unesco-education-covid-19-data-1hke60d1x7m525r>
- Viner, R. M., Russell, S. J., Croker, H., Packer, J., Ward, J., Stansfield, C., Mytton, O., Bonell, C., & Booy, R. (2020). School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. *The Lancet Child & Adolescent Health*, 4(5), 397–404.
- Vuković, J., Matić, R. M., Milovanović, I. M., Maksimović, N., Krivokapić, D., & Pišot, S. (2021). Children's daily routine response to COVID-19 emergency measures in Serbia. *Frontiers in Pediatrics*, 9, 154.
- World Health Organization. (2020). Rolling Updates on Coronavirus Disease. *World Health*



*Organization, December 2019*, 1–204. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>

## 9. ANNEX

Table 9.1 – Questions presented in the questionnaire created by the Cascais Council

Survey "Children – Effects of COVID-19 – Cascais" Questions
01. Aos pais (ou cuidadores): Aceita que o seu filho(a) participe neste estudo, consentindo o tratamento dos dados obtidos?
02. Às crianças e jovens: Aceitas participar neste estudo e permites que sejam analisadas as tuas respostas?
1. Indica a data de hoje:
2. Qual o ciclo de ensino que frequentas?
3. Qual a freguesia em que vives?
4. Sabes o que se está a passar de diferente no nosso país e no mundo por causa do novo coronavírus?
5. Queres descrever, por palavras tuas, qual a situação atual?
6. Como é que tiveste informação sobre a situação atual? Quem é que te deu essa informação?
6a) Gostavas de ter mais informação? Sobre o quê? Em que formatos?
7. De acordo com a informação que recebeste, mudaste alguns dos teus comportamentos na tua rotina diária?
8. Queres dizer-nos quais foram as principais mudanças nos teus comportamentos e rotinas diárias?
9. Para o teu dia a dia, a situação atual tem sido:
9a) O que tem sido mais difícil nesta fase?
9b) O que descobriste de positivo nesta fase?
10. Há alguma coisa que te assuste ou que te preocupa na situação atual e no teu dia a dia? O quê?
11. Perante as dificuldades que estás a viver nesta fase de pandemia, como achas que estás a ser ACOMPANHADO ou AJUDADO: [Pelos teus pais (ou encarregados de educação)]; [Pelos teus professores (ou educadores)]; [Pela Câmara Municipal da tua zona]; [Por profissionais de saúde que já te acompanhavam antes da pandemia]; [Por profissionais que já te davam apoio psicológico ou social antes da pandemia].
12. Como tem sido o ACESSO: [Às aulas]; [A outros serviços da escola]; [A serviços de acompanhamento médico/ terapêutico/ tratamentos]; [A consultas médicas que necessitas]; [A acompanhamento psicológico]; [A atividades de lazer e diversão]; [A atividades desportivas ou artísticas]; [A informação sobre o momento atual]; [A informação sobre linhas de apoio a crianças/jovens/famílias].
13. Quais são as principais vantagens ou pontos positivos do ensino à distância?
14. Quais são as principais dificuldades ou pontos negativos do ensino à distância?
15. Se a situação atual de pandemia se mantiver durante muito mais tempo, o que gostarias que mudasse para que a tua vida melhorasse?
16. Gostarias que existissem espaços no teu concelho onde pudesses ser ouvido, apresentar ideias, propostas ou soluções que poderiam ajudar no bem-estar de outras crianças e jovens ou famílias?
17. Que espaços e/ou formas de participação gostavas que existissem no teu concelho para que a voz das crianças e jovens seja ouvida neste contexto de pandemia?
18. O que consideras mais importante ou prioritário para que as crianças e jovens se sintam em desconfinamento?

## 9.1. REPORT MAIN

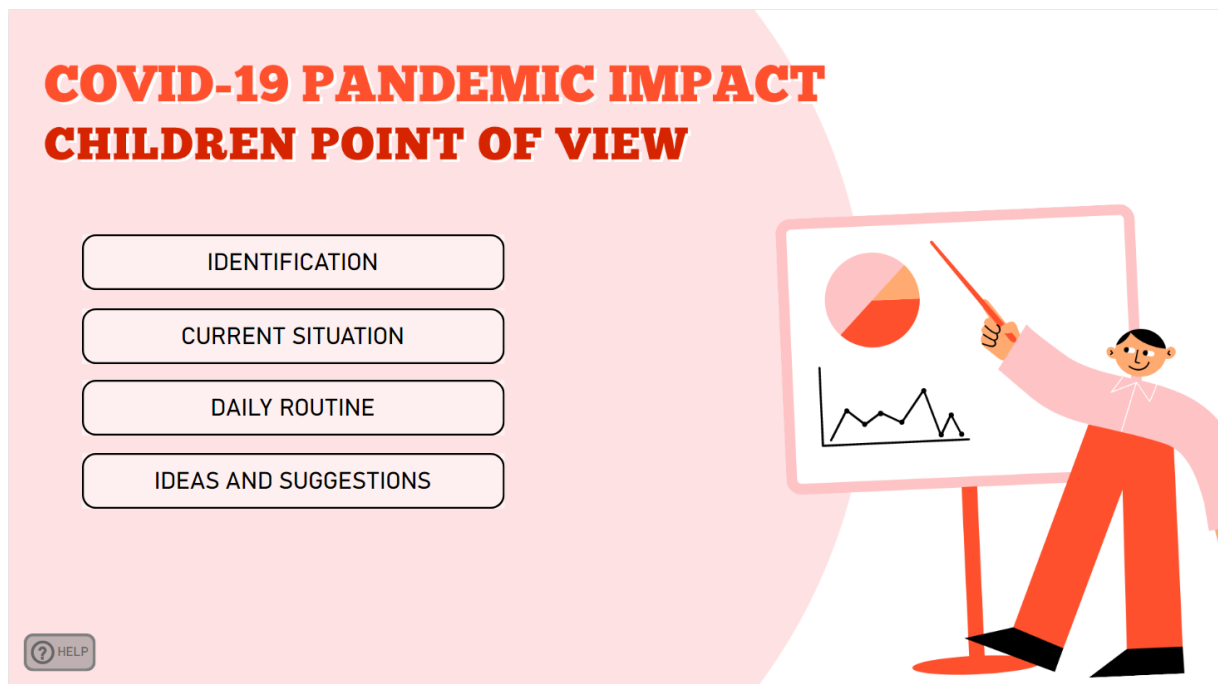


Figure 9.1 – Report Main.pbix page main

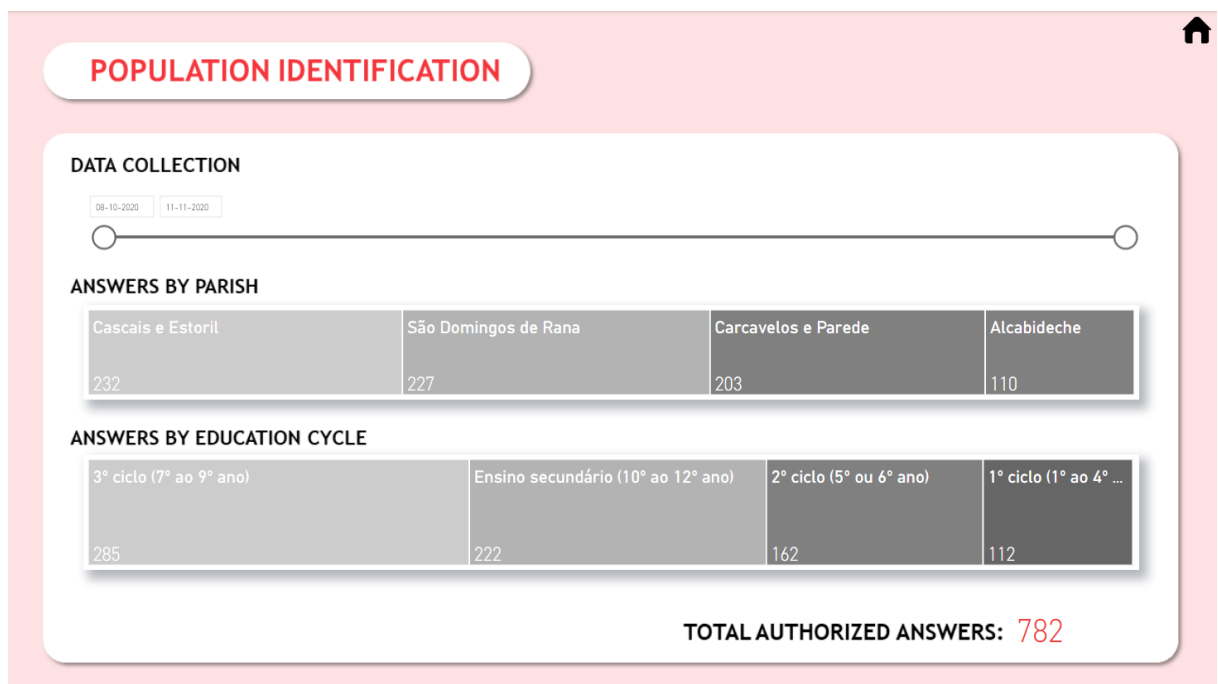


Figure 9.2 – Report Main.pbix page identification

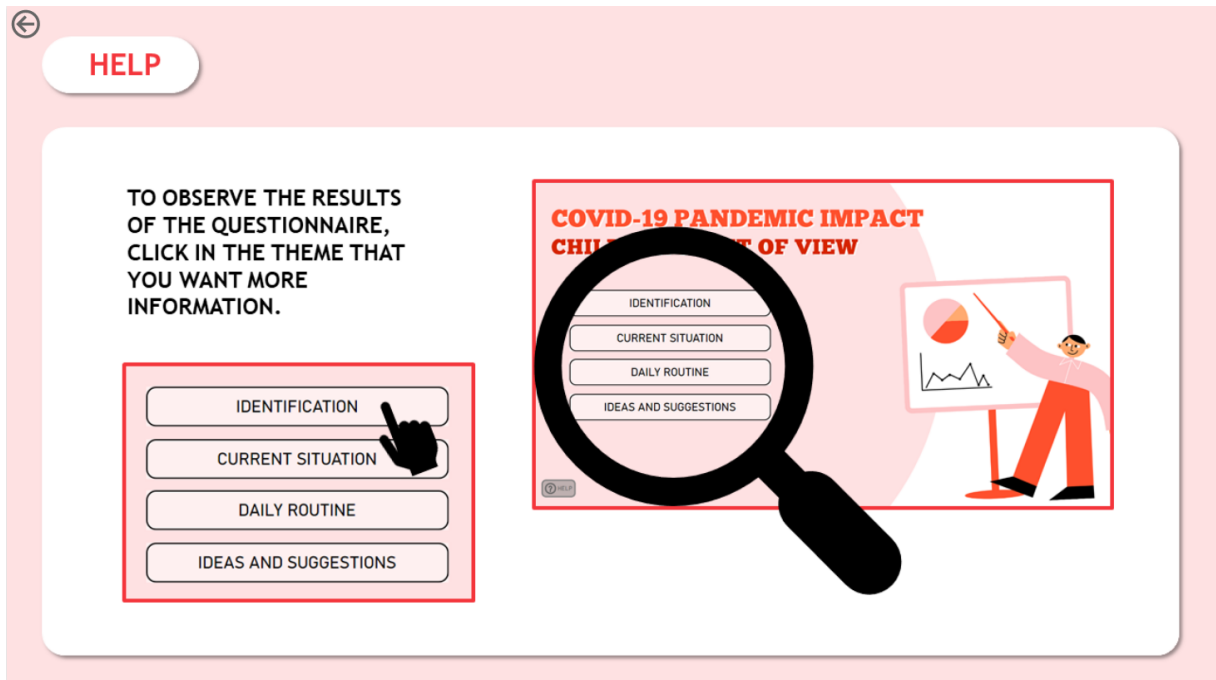


Figure 9.3 – Report Main.pbix page help

## 9.2. REPORT CURRENT SITUATION

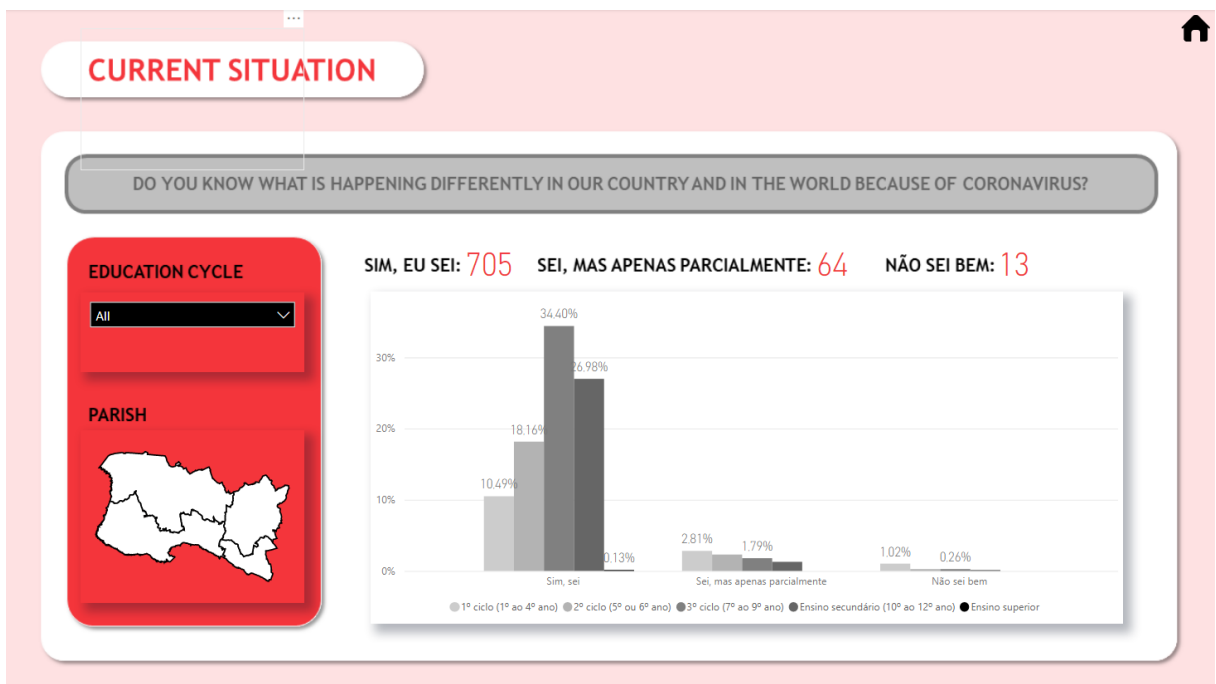


Figure 9.4 – Report CurrentSituation.pbix page Q4

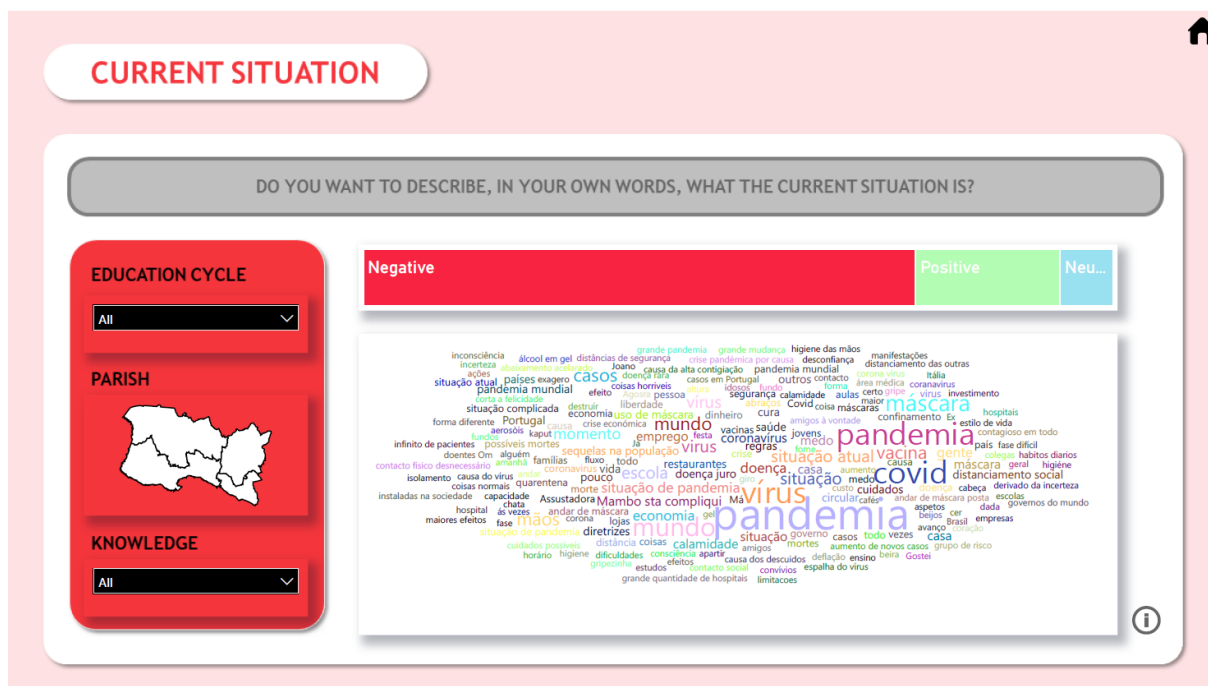


Figure 9.5 – Report CurrentSituation.pbix page Q5

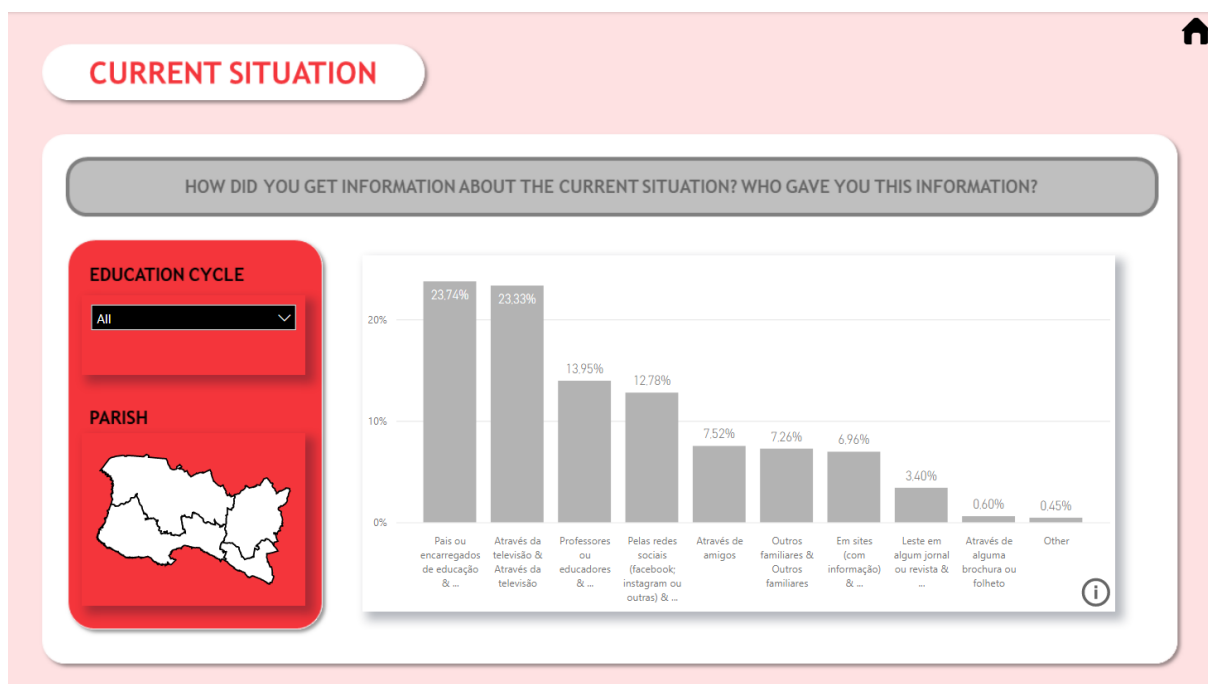


Figure 9.6 – Report CurrentSituation.pbix page Q6

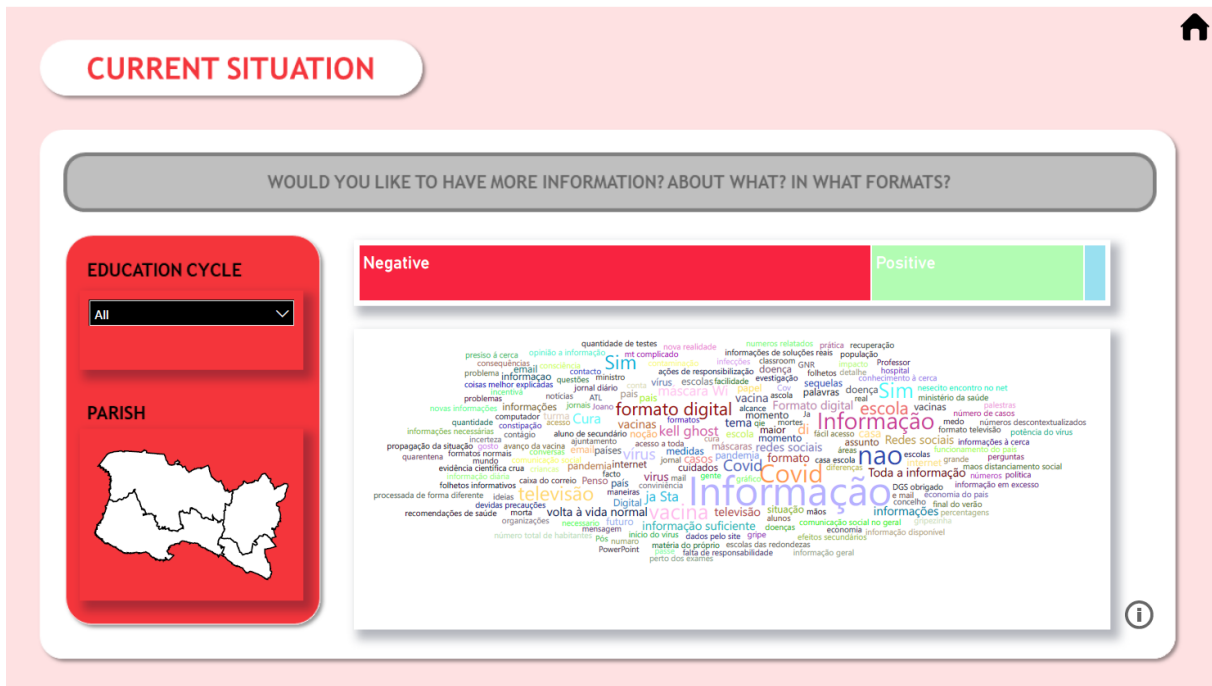


Figure 9.7 – Report CurrentSituation.pbix page Q6a

### 9.3. REPORT DAILY ROUTINE

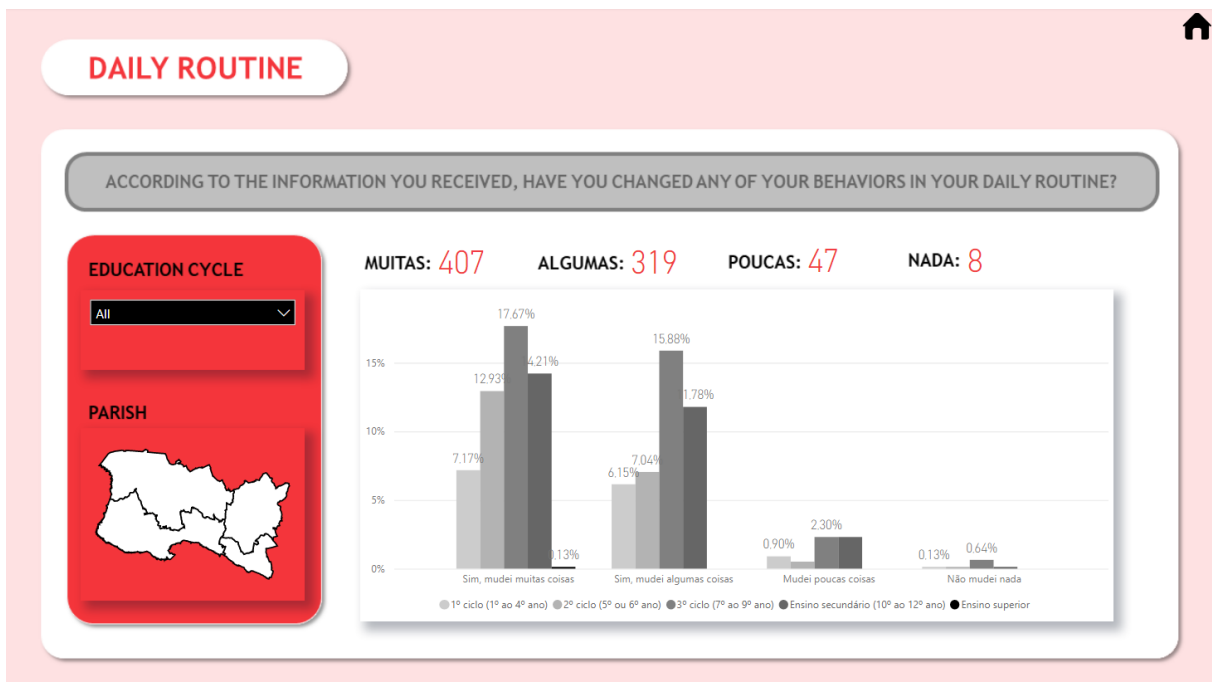


Figure 9.8 – Report DailyRoutine.pbix page Q7

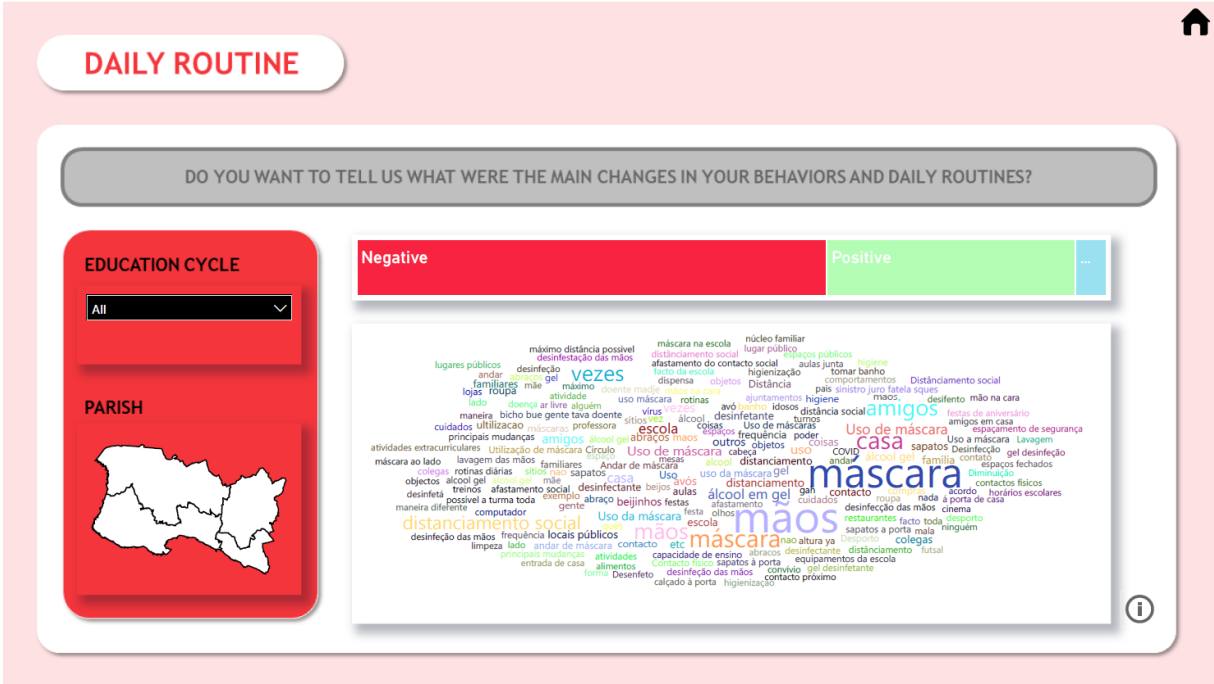


Figure 9.9 – Report DailyRoutine.pbix page Q8

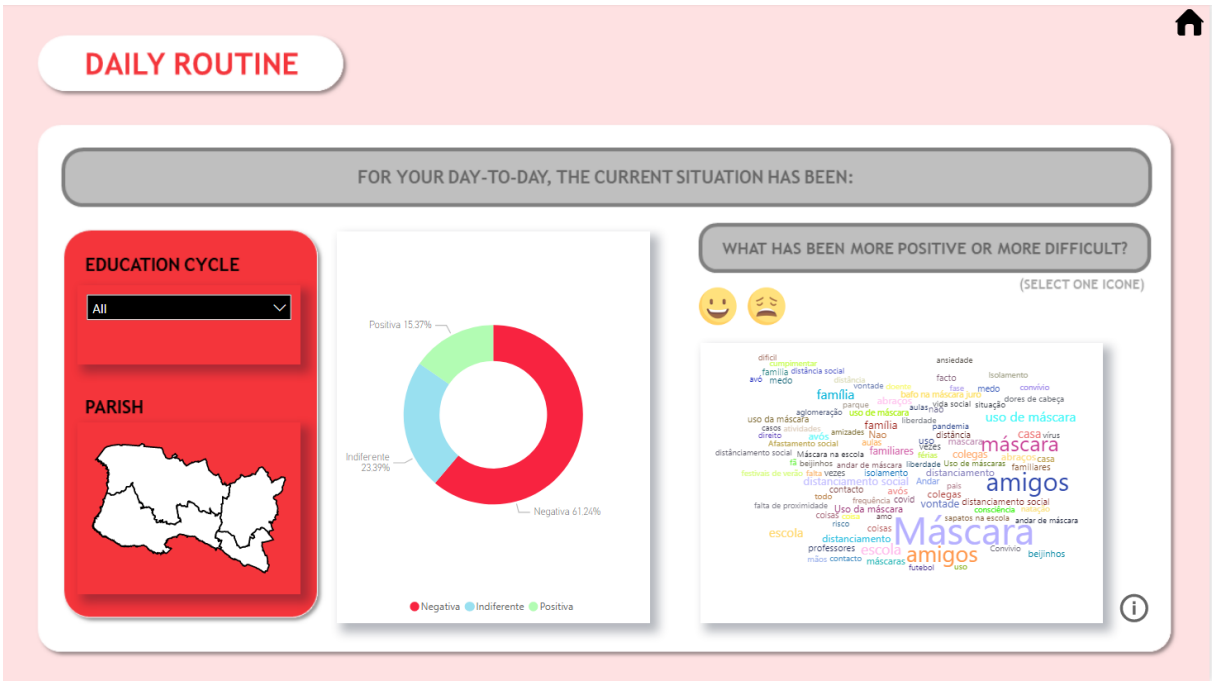


Figure 9.10 – Report DailyRoutine.pbix page Q9

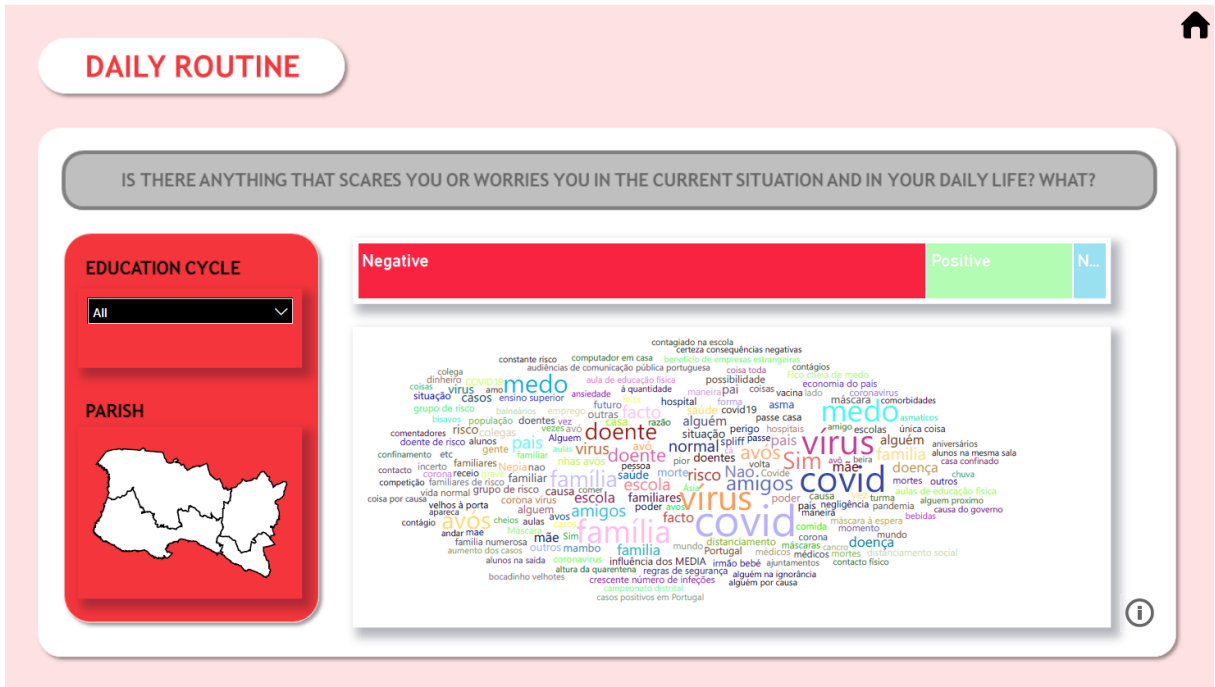


Figure 9.11 – Report DailyRoutine.pbix page Q10

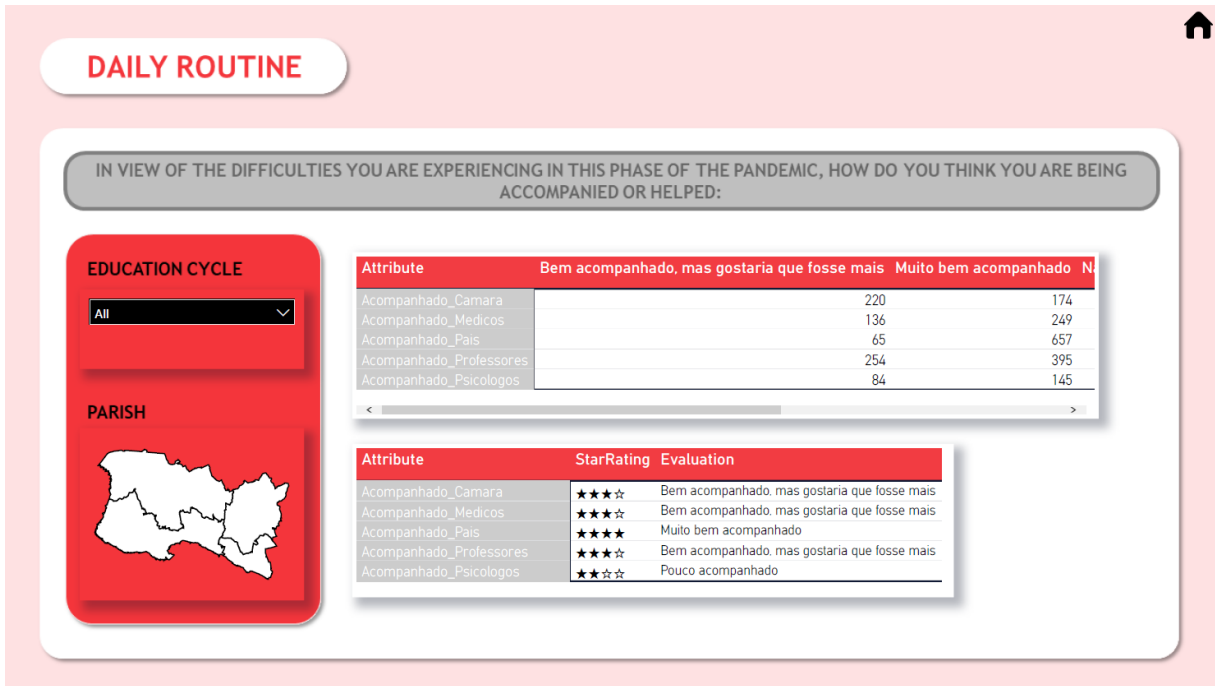


Figure 9.12 – Report DailyRoutine.pbix page Q11



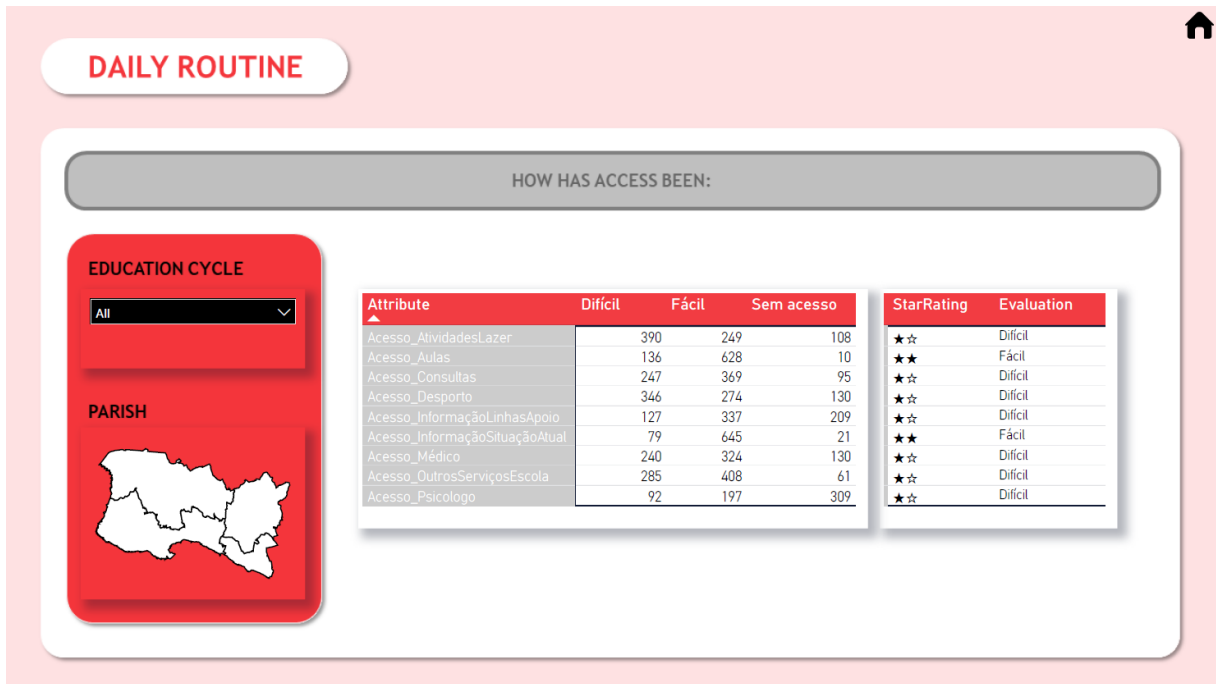


Figure 9.13 – Report DailyRoutine.pbix page Q12

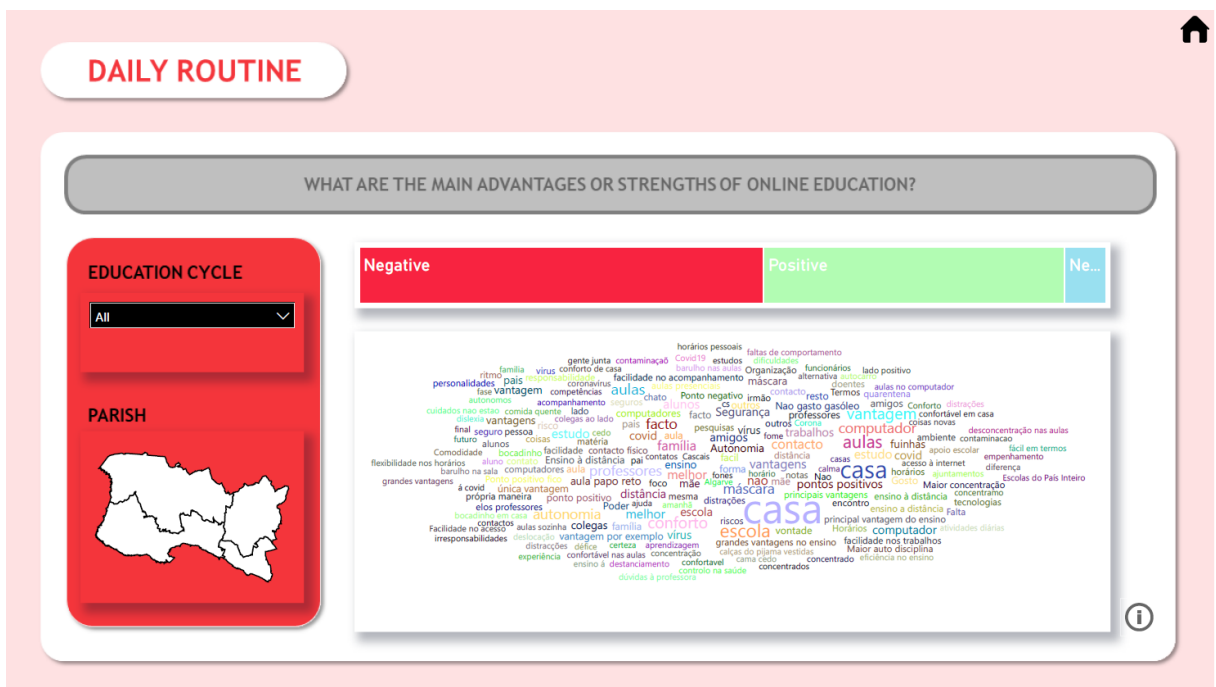


Figure 9.14 – Report DailyRoutine.pbix page Q13



