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Students' feelings of isolation due to distance learning-during the crisis. A case study of Lebanon between COVID-19 and war

Elias Kaawe* y Christelle Stephan-Hayek**

Abstract

This article explores the relationship between school isolation and the perception of the academic year among Lebanese students, by evaluating distance teaching modalities during two periods of crisis (the COVID-19 pandemic in 2020 and the September 2024 war in Lebanon). Data collected from 400 students reveals that in-person teaching remains widely preferred, but that isolation related to the war sometimes acted as a factor of resilience and success. These results highlight the need to integrate targeted psychosocial support into educational policies during times of crisis

Keywords: isolation; distance learning; COVID-19; war; resilience; Lebanon

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Sentimientos de aislamiento de los estudiantes debido a la enseñanza a distancia durante la crisis- Un estudio de caso de Líbano entre el covid-19 y la guerra

Resumen

Este artículo explora la relación entre el aislamiento escolar y la percepción del año académico entre los estudiantes libaneses, mediante la evaluación de las modalidades de enseñanza a distancia durante dos períodos de crisis (la pandemia de COVID-19 en 2020 y la guerra de septiembre de 2024 en el Líbano). Los datos recopilados de 400 estudiantes revelan que la enseñanza presencial sigue siendo ampliamente preferida, pero que el aislamiento relacionado con la guerra actuó en ocasiones como un factor de resiliencia y éxito. Estos resultados ponen de relieve la necesidad de integrar un apoyo psicosocial específico en las políticas educativas durante los períodos de crisis.

Palabras clave: aislamiento; educación a distancia; COVID-19; guerra; resiliencia; Líbano

Introduction

In Lebanon, as elsewhere, the evolution of distance learning has been influenced by various factors, such as technological advances and educational requirements.

In the spring of 2020, the COVID-19 pandemic spread across the world, including in Lebanon. In an effort to save the school year, distance learning replaced in-person teaching, despite all the obstacles and difficulties it entailed. The same circumstances recurred in the fall of 2024, during the Israeli war against Hezbollah in Lebanon.

The sudden shift to distance learning in Lebanon posed not only technological and academic challenges but also profound psychosocial effects, particularly a heightened sense of isolation among students. Social interaction, an essential component of learning, was disrupted, leaving students cut off from peers, teachers, and the usual school environment. During the COVID-19 pandemic, students faced lockdowns, social distancing, and limited access to communal spaces, which amplified loneliness and anxiety. In the September 2024 war, these effects were compounded by displacement, power outages, internet disruptions, and fear for personal safety. Isolation in these contexts was not merely a byproduct of online learning, it was intertwined with larger social, economic, and security crises, making it a critical factor in students' academic and emotional experiences.

During these two crises, the various education stakeholders made significant efforts to overcome the challenges. Different measures were then taken to support learners and teachers in the implementation and practice of distance learning, particularly through the use of educational platforms.

It is important not to overlook the efforts and personal initiatives of teachers when broadcasting video lessons, given that most of them were not sufficiently prepared to deal with these critical situations. Similarly,

"students are not familiar with new technologies in distance learning. In practice, left to their own devices, they sometimes find it difficult to master certain concepts; they are unable to follow the training from a distance... They struggle to follow their courses online. Between daily power outages and poor internet connections, following distance learning is not always easy for Lebanese students" (Awit, 2021).

Many families, especially in disadvantaged communities, lacked the technological equipment or financial means to support effective online learning, exacerbating the feeling of isolation.

Although educational approaches have technologically progressed, communication between teachers and students in distance learning remains limited by unequal access to resources and reduced interaction compared to face-to-face learning, often affecting learners' comprehension. This mode of distance learning was first tested by private schools well before the COVID-19 pandemic, following the nationwide closure of schools during the popular uprising of October 2019. To put this type of teaching into practice, each school has chosen its platform, such as Google Classroom, Microsoft Teams, Zoom, Moodle... At that point, students only needed a computer, a tablet or a mobile phone with a stable and reliable internet connection to attend their courses.

Initially, schools communicated with parents and sent out revision sheets to be used in the event of closure. Some students were only taught simple concepts or review material, while others were learning as if they were in the classroom, yet virtually. It is therefore necessary to highlight the disparities between schools in diverse regions and sociocultural contexts.

Father Boutros Azar, former Secretary General of Catholic schools in Lebanon, and coordinator of the Federation of Private Educational Institutions, told the newspaper L'Orient-Le Jour on Monday, March 16, 2020: *"I am not worried about large private establishments or schools linked to religious orders, be them Christian or Muslim... I am, however, concerned about those establishments that do not have the possibility of developing distance learning..."* (El Hajj, 2020).

This study therefore focuses on the feeling of isolation among Lebanese students, examining how it shaped their perception of the school year and preferred learning modality during the two crises. By situating isolation within the broader social, economic, and security context, the study aims to provide a nuanced understanding of its impact on academic and psychological outcomes, offering insights for policymakers and educators to better support students during future crises.

1. Literature Review

The experiences of students in distance learning, especially their feelings of isolation, can be better understood through a few complementary theoretical perspectives. Vygotsky's socio-constructivist theory reminds us that learning is fundamentally social: students build knowledge through interaction and collaboration with teachers and peers. When face-to-face engagement is limited, as in distance learning, this process can be disrupted

(Vygotsky, 1978; Rogoff, 1990). Self-Determination Theory (SDT) adds another layer, showing that students are most motivated when their basic psychological needs such like autonomy, competence, and relatedness are met (Deci & Ryan, 2000; Ryan & Deci, 2017). Distance learning can challenge the need for relatedness, making it harder for students to stay engaged and motivated.

Finally, Stress-Coping Theory helps us interpret how students respond to difficult circumstances (Lazarus & Folkman, 1984). In stressful situations like the COVID-19 pandemic or the September 2024 war in Lebanon, feelings of isolation might not only create distress but also serve as a tool for resilience, enabling students to focus, self-regulate, and continue learning.

Together, these frameworks provide a solid foundation for understanding students' diligence, participation, and coping strategies in times of crisis, showing how psychosocial experiences are deeply connected to educational outcomes. Building on this theoretical background, the following section explores the importance of diligence in distance learning and the ways in which students can remain engaged and motivated despite challenging circumstances.

1.1. The Importance of Diligence in Distance Learning

Learners' diligence plays a crucial role in the success of distance learning. To benefit fully from online education, students must demonstrate remarkable discipline, exceptional motivation, and an exemplary sense of responsibility. This means attending classes regularly, actively participating in discussions, and meeting deadlines. The following key points highlight the importance of diligence in this teaching modality:

1.1.1. Planning and Organization: Learners should create a schedule for their online classes. This helps them stay organized and know exactly when to log in, submit their assignments, and participate in virtual class discussions.

1.1.2. Active engagement: Diligence is not simply a matter of attendance; it also involves active engagement. This means being involved in online discussions and interacting with others, while also putting questions. One of the main challenges of distance learning remains the difficulty in building strong connections between students and teachers. Education researcher Flore Morneau-Sévigny mentioned that "*taking the majority of classes remotely is associated with little contact with teachers, students, and the campus, which could affect the level of stress and distress...*" (2017, 86).

1.2. Strategies to Strengthen Motivation and Participation

1.1.3. Communication with the teacher: Learners should develop the habit of communicating regularly with their teacher when they encounter difficulties or have questions. Distance learning can sometimes seem monotonous, as it eliminates active and traditional interactions with friends and physical activities that punctuate school life. Some students find it difficult to maintain motivation and focus when they are away from school and their peers. "Regular interactions between students and teachers are crucial to prevent isolation and maintain learner engagement in a distance learning environment" (Tinto, 2021, 58). To prevent this, teachers should organize online discussions by diversifying their teaching methods to stimulate student engagement and make the learning experience

more dynamic and lively.

1.1.4. Time management: Time management is crucial. Students should make sure they organize their schedules to allow enough time for their online courses so as to stay on track and not get overwhelmed by other distractions.

1.1.5. Self-discipline: Online learning requires a great deal of self-discipline. Students must take responsibility for logging in regularly and staying focused and alert.

1.1.6. Social support: Learners' diligence can be enhanced by seeking support from classmates, friends, or even family members, which helps keep them motivated, responsible, and diligent. Teachers, for their part, can also collaborate with families to encourage students' participation. *"Collaboration between schools and families is essential to support students' engagement and improve academic achievement."* (Epstein, 2018, 45). In turn, parents play a fundamental role in motivating their children by supporting them in their educational journey.

Active student participation is essential for successful learning, whether online or in-person. However, distance learning presents unique challenges; in that sense, students often find themselves deprived of direct interaction with their peers and exposed to the distractions of their home environment. In light of all this, it becomes crucial for teachers to develop engaging and appealing strategies to capture learners' attention and motivate them.

1.3. The Psychosocial Challenges of Distance Learning

It is also important for teachers to demonstrate flexibility in their teaching approach. Using multiple teaching aids helps keep the students engaged. By diversifying activities, teachers can incorporate fun and creative elements. For example, online competitions, group projects, challenges, or even educational games can turn distance learning into a more dynamic, lively, and enjoyable experience. This not only helps maintain students' diligence but also increases their active participation.

The physical absence of instructors can distract students, making learning more difficult and complicated, and thus requiring new strategies adapted to maintain young learners' attention and engagement. As Smith points out, *"Isolation in distance learning can reduce the interaction necessary for young students to be engaged, making their concentration even more fragile"* (2020, 45).

Social isolation among students was a major consequence of distance learning. Without face-to-face interaction with their peers and teachers, many students suffered from loneliness, which had significant psychological effects, such as stress and anxiety. *"The isolation imposed by distance learning has exacerbated students' psychological difficulties, increasing their levels of stress and anxiety, while also worsening pre-existing social inequalities, particularly for those from disadvantaged backgrounds"* (Coudray and Pires, 2021, 67). At the same time, some students dropped out of school altogether, either due to technical issues or because they were unable to adapt to this new teaching approach.

The following study will examine whether students' feelings of isolation due to distance learning during periods of crisis influenced their perception of the most effective learning modality or shaped their evaluation of the school year as successful or unsuccessful.

2. Methodology

In the context of our thesis titled “School education in Lebanon during periods of crisis, pedagogical advantages and disadvantages”, we chose to adopt a quantitative approach based on around thirty questions sent to a sample of students, their teachers and their parents spread across different regions in Lebanon. This approach seemed to us the most relevant one, as it does not only allow us to collect quantitative data, but also to highlight general trends and to objectively compare different results. It thus offers us a global and structured vision of the feeling of isolation among students, which is the phenomenon studied in this article.

The sample on which this study is based was carefully selected to represent as accurately as possible the population concerned. The participants are divided into two distinct groups based on their respective contexts.

2.1. The Covid-19 Pandemic Crisis

This sample, collected in May 2025 (post COVID-19), consists of 200 secondary school students aged 15–18 who attended school during the COVID-19 pandemic. The participants were drawn primarily from five private schools and reflect diverse socioeconomic backgrounds, including predominantly middle-class populations from Mount Lebanon, Beirut, and the North, as well as more disadvantaged communities in the South and the Bekaa regions. These students experienced distance learning over an extended period during the 2020–2021 academic year, allowing them to observe both its advantages and limitations in the midst of the COVID-19 pandemic. The sample was distributed evenly across the five schools, with 40 students from each institution, to ensure balanced representation.

2.2. The September 2024 War Crisis

This sample, collected in May 2025 (post war), consists of 200 students enrolled in the 2024/2025 academic year, marked by the outbreak of a war in Lebanon (starting September 2024), with the majority distributed across four schools located in conflict zones, namely Mount Lebanon, Beirut, the Bekaa, and the South. These students faced disruptions related to displacement, power and internet outages, as well as the insecurity of their immediate surroundings. The distribution by school was meant to ensure a balanced representation, with 50 students per school.

The goal was not only to gather a large number of participants. More importantly, it was to obtain reliable and representative data capable of addressing the research questions. Standardizing the responses made it easier to compare the two contexts (pandemic and war), while respecting anonymity allowed students the freedom to express themselves openly.

To collect the information necessary for the phenomenon studied in this article, we have selected three questions from this long and diverse questionnaire relating to the feeling of isolation. We hereby present the titles of these three questions along with the participants’ responses.

3. Questions studied

3.1. Question 1 (Q1)

It is often said that distance learning creates a sense of isolation in students, as it limits social interaction with their classmates. Did you experience this feeling?

a. Yes b. To some extent c. No

3.1.1 Results

Figure 1 illustrates respondents' perceptions of the feeling of isolation due to the lack of social interaction in distance learning during the COVID-19 pandemic. These data reveal that a combined majority (70.50%) of learners experienced isolation to some extent, whether partial or complete. This underscores a major challenge to students' social and emotional well-being, emphasizing the need for strategies to enhance interactions despite the constraints of distance learning.

Figure 1: (Students / COVID) Q1

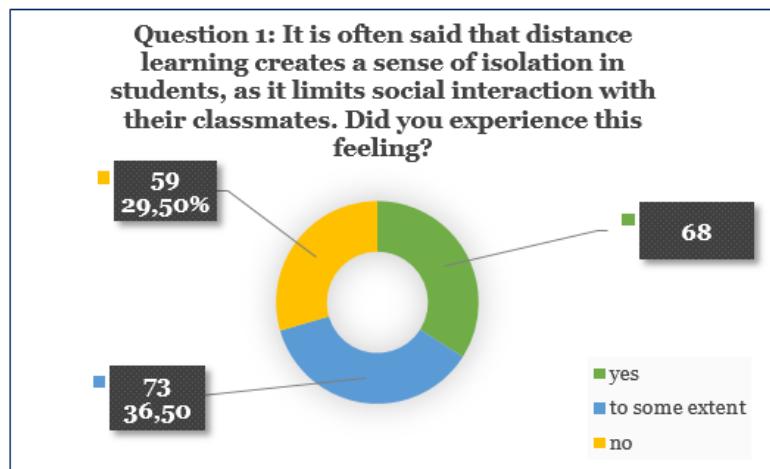


Figure 2: (Students / War) Q1

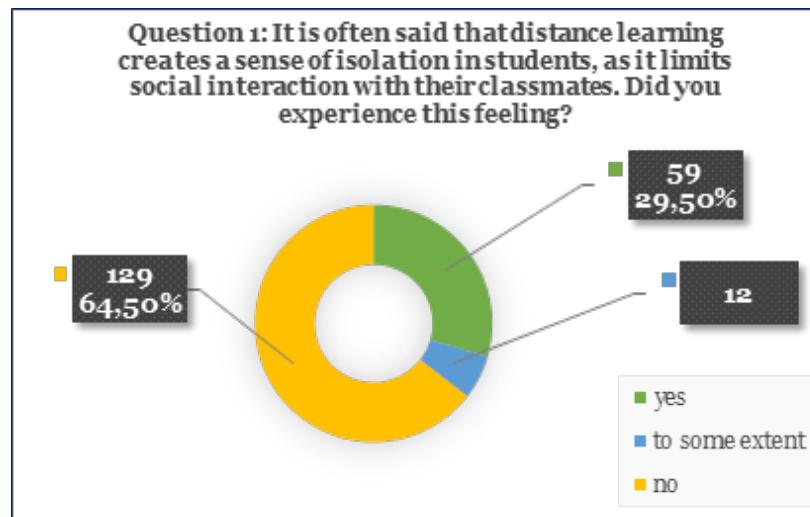


Figure 2 shows that a minority of respondents (35.5%) reported having experienced, either fully or partially, a feeling of isolation due to the lack of social interaction during the September 2024 war, highlighting the need for targeted strategies to support these students and reduce isolation.

3.2. Question 2 (Q2)

In your opinion, the 2020/2021 academic year (during the COVID-19 pandemic) was:

In your opinion, the 2024/2025 academic year (during the September 2024 war) was:

- a. o unsuccessful due to distance learning
- b. o somewhat unsuccessful
- c. o successful

3.2.1 Results

Figure 3: (Students / COVID) Q2

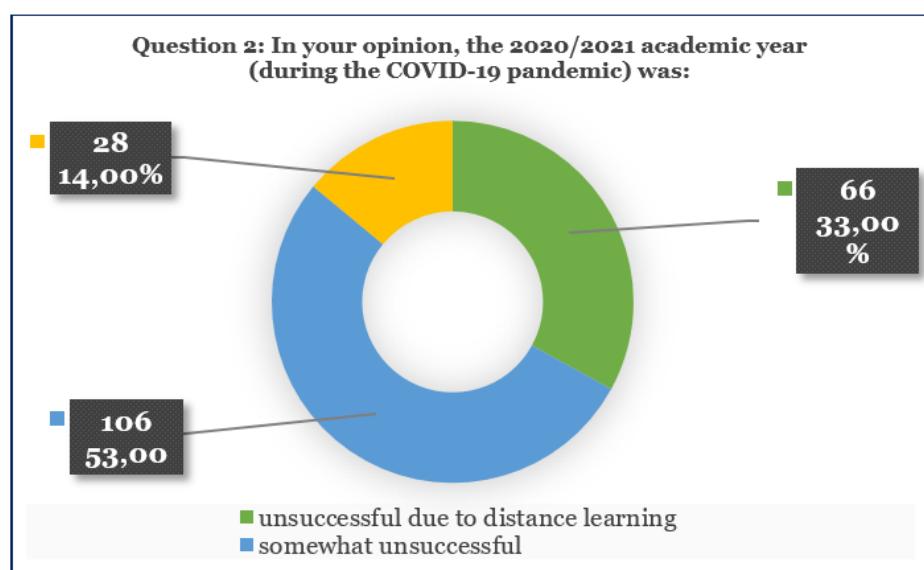


Figure 3 assesses respondents' perceptions of whether the school year was a failure, a success, or somewhere in between in the context of the COVID-19 pandemic. Responses indicating that the school year was “unsuccessful” or “somewhat unsuccessful” together represent 86% of the total responses, highlighting the challenges faced by students during that period.

Figure 4: (Students / War) Q2

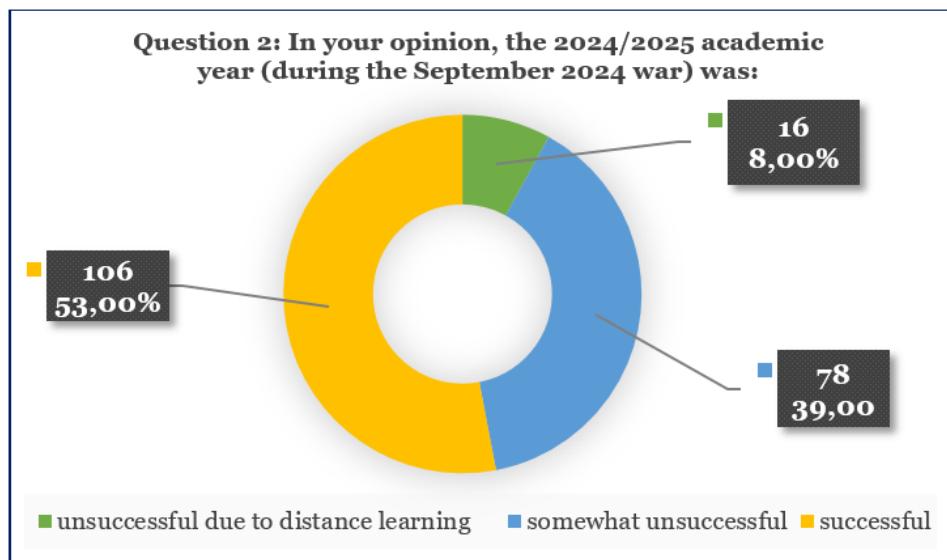


Figure 4 assesses respondents' perceptions of the 2024/2025 school year, marked by the September 2024 war, as a failure, a success, or somewhere in between. A majority of participants (53.00%) considered the school year to be successful. The fact that more than half of the respondents viewed the year as successful is notable, indicating a certain resilience and ability to cope with challenging circumstances.

3.3. Question 3 (Q3)

In your experience, students learn best with:

a. distance learning b. in-person learning

3.3.1 Results

Figure 5: (Students / COVID) Q3

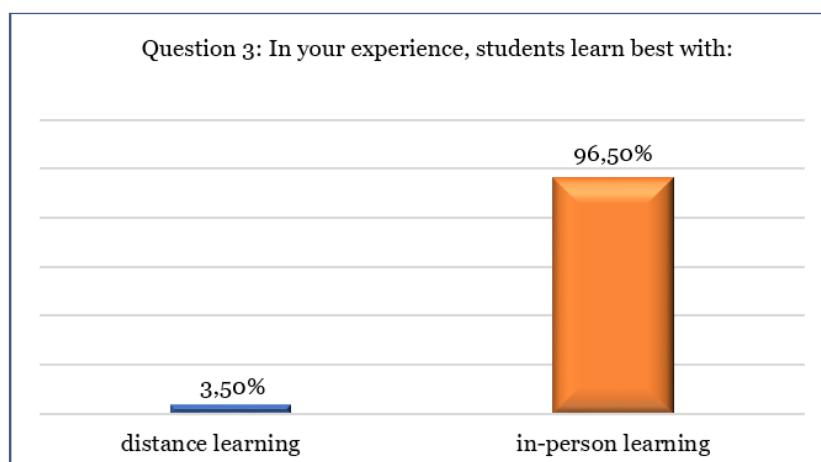


Figure 5 presents respondents' views on the teaching modality, whether distance or in-person, which best supported student learning during the COVID-19 pandemic. An overwhelming majority of participants (96.50%) stated that students learn better with in-person teaching. These data suggest that, despite the forced adoption of remote teaching during the pandemic, the vast majority of students believe that the traditional classroom setting is more conducive to effective learning.

Figure 6: **(Students / War) Q3**

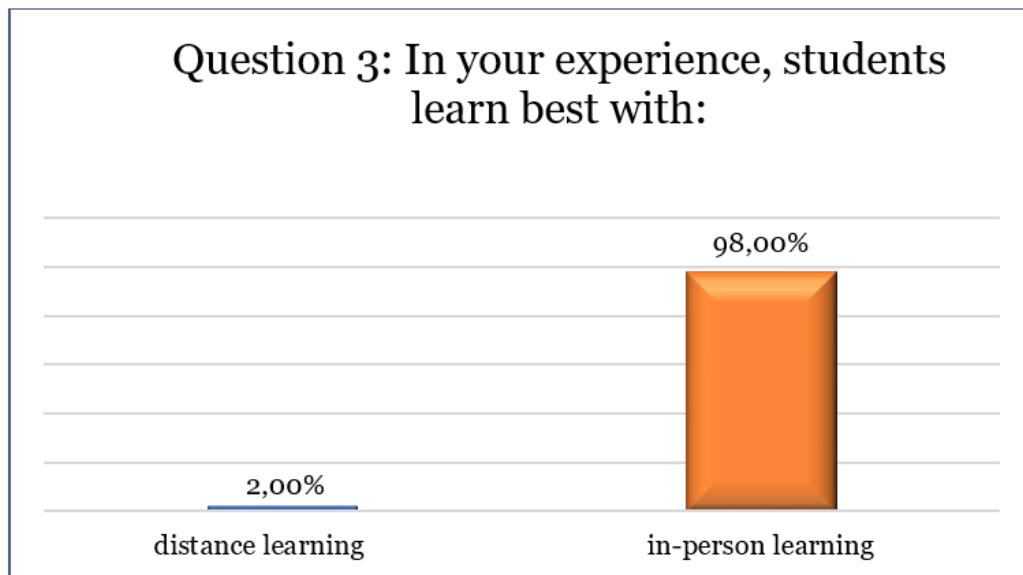


Figure 6 presents respondents' views on the teaching modality, whether distance or in-person, which best supported student learning during the September 2024 war period. An overwhelming majority of participants (98.00%) stated that students learn better with in-person teaching. These data suggest that, even after experiencing distance learning, nearly all students perceive the traditional classroom environment as significantly more favorable for effective learning.

4. Analysis and Cross-Referencing of Results

One of the main challenges of teaching in times of crisis lies in the sense of isolation experienced by students, a direct consequence of the disruption of their usual social interactions. This isolation can have consequences not only on their psychological well-being, but also on their perception of the school year and the quality of their learning. In this study, we chose to focus on two key dimensions:

A. The impact of the feeling of isolation on students' perception of the school year: we compared the experiences of students during the COVID-19 pandemic (2020/2021) with those of students who lived through the September 2024 war (2024/2025), to assess the extent to which their experience of isolation shaped their perception of the school year.

B. The impact of the feeling of isolation on the perception of the optimal learning modality: students were asked to indicate whether they learned better through distance or in-person instruction, allowing us to examine the relationship between their feelings of

isolation and their learning preferences.

The analysis is based on statistical tests (Chi-square) to determine whether a significant relationship exists between these variables. This approach is intended to go beyond individual impressions and reveal general trends, enabling comparisons between the two contexts examined: the pandemic and the war.

4.1. Impact of Students' Feelings of Isolation on Their Perception of the School Year

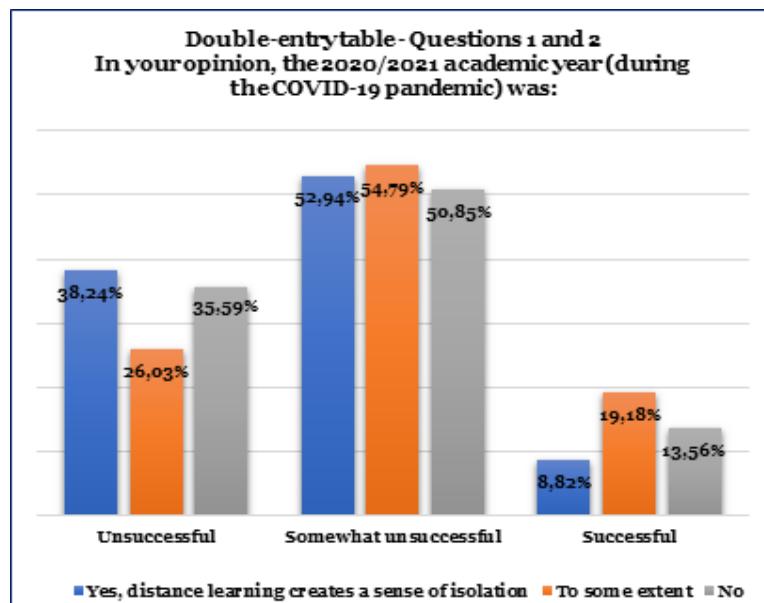
4.1.1. Questions analyzed:

- **Question 1:** "It is often said that distance learning creates a sense of isolation in students, as it limits social interaction with their classmates. Did you experience this feeling?" (Yes/ To some extent/ No)
- **Question 2:** "In your opinion, was the 2020/2021 school year (during the COVID-19 pandemic) or the 2024/2025 school year (during the September 2024 war):" (Unsuccessful/ Somewhat unsuccessful / Successful)

4.1.2. Chi-Square Test Hypotheses:

- **Null hypothesis:** No statistically significant association was found between the feeling of isolation and the perception of the school year. The two variables are independent.
- **Alternative Hypothesis:** A statistically significant association was found between the feeling of isolation and the perception of the school year. The two variables are dependent.

Figure 7 (COVID-19)



Contingency Table (Figure 7):

Feeling of isolation	In your opinion, the 2020/2021 academic year (during the COVID-19 pandemic) was:			Total
	Unsuccessful	Somewhat unsuccessful	Successful	
Yes	26	36	6	68
To some extent	19	40	14	73
No	21	30	8	59
Total	66	106	28	200

4.1.3. Descriptive Analysis of the Graph (Figure 7):

The graph in Figure 7 presents students' perceptions of the 2020/2021 school year, broken down according to their sense of isolation. The percentages shown are conditional upon the students' reported feeling of isolation.

- **Perception of an “Unsuccessful” school year:** The proportion of students who considered the year “unsuccessful” ranges from 26.03% for those who felt “somewhat” isolated to 38.24% for those who reported full isolation (“Yes”).
- **Perception of a “Somewhat Unsuccessful” school year:** This was the most common response across most categories, with the highest proportion (54.79%) observed among students who experienced isolation “to some extent”.
- **Perception of a “Successful” school year:** The percentage is generally low, with a peak of 19.18% observed among students reporting feeling isolated “to some extent”.

In summary, the graph shows that feelings of isolation tend to cloud students' perceptions of their school year, shifting it from “somewhat unsuccessful” to “unsuccessful”. However, the proportion of students who rate their year as “successful” remains low across all categories, which could indicate broader challenges within the educational system or the student experience for the 2020/2021 academic year.

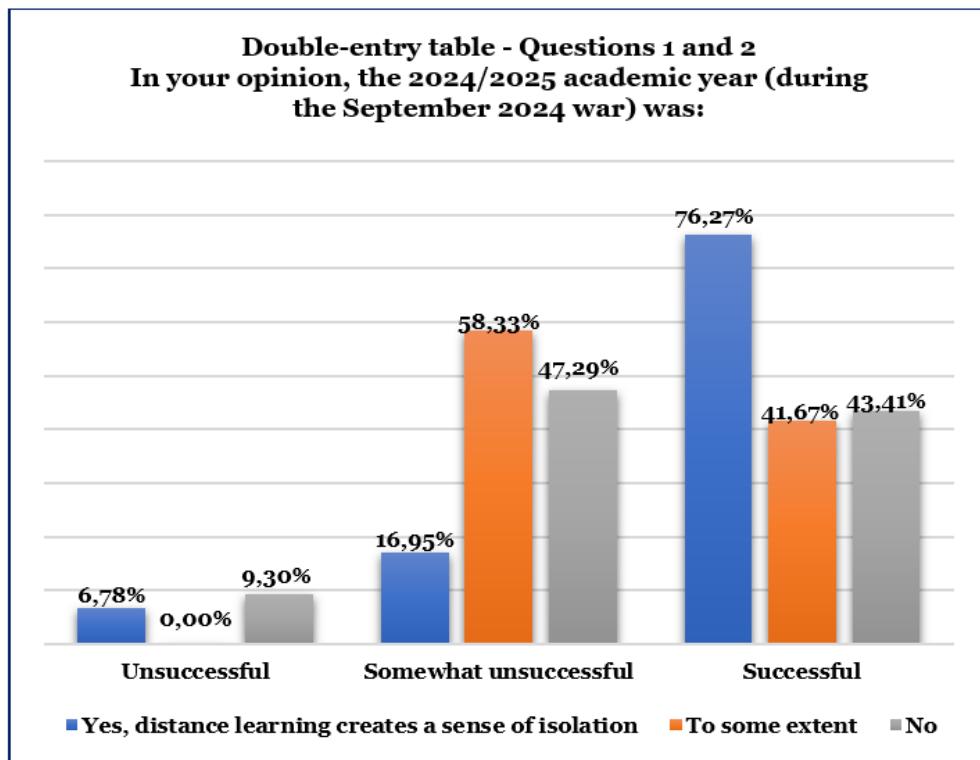
Interpretation of the Chi-Square Test: The Chi-Square test was carried out to assess the statistical significance of these observed differences.

- The p-value obtained is 0.3349.
- Compared with a significance level (α) of 0.05, we have $0.3349 > 0.05$.

Statistical Conclusion: Given that the p-value (0.3349) is greater than the significance level of 0.05, the null hypothesis cannot be rejected. This means that, despite the apparent differences observed, these variations are not statistically significant.

Implication 1: Based on these data, it cannot be statistically confirmed that the feeling of isolation was found to have a significant influence on perceptions of the 2020/2021 school year.

Figure 8 (September 2024 war)



Contingency Table (Figure 8)

Feeling of isolation	In your opinion, the 2024/2025 academic year (during the September 2024 war) was:			Total
	Unsuccessful	Somewhat unsuccessful	Successful	
Yes	4	10	45	59
To some extent	0	7	5	12
No	12	61	56	129
Total	16	78	106	200

4.1.4. Descriptive Analysis of the Graph (Figure 8):

The graph in Figure 8 presents students' perceptions of the 2024/2025 school year, broken down according to their sense of isolation. The percentages shown are conditional upon the students' reported feeling of isolation.

- Perception of an “Unsuccessful” school year:** The proportion of students who considered the year “unsuccessful” is the lowest (6.78%) among those who felt isolated (“Yes”), while it is higher among those who did not feel isolated (“No”) (9.30%). None of the students who felt “somewhat” isolated selected this option (0%).
- Perception of a “Somewhat Unsuccessful” school year:** This category emerges as the dominant perception among students who did not experience isolation (“No”) (58.33%) and those who reported feeling “somewhat” isolated (16.95%).
- Perception of a “Successful” school Year:** The highest proportion (76.27%) of

students expressing a positive view of the school year (“Successful”) is found among those who reported feeling isolated (“Yes”).

Visually, the graph reveals clear differences in students’ perceptions of the school year depending on their sense of isolation, notably a very positive perception (“Successful”) among students who reported having felt isolated.

Interpretation of the Chi-Square Test: The Chi-Square test was carried out to assess the statistical significance of these observed differences.

- The p-value obtained is 0,000367.
- Compared to a commonly accepted significance level (α) of 0.05, we have $0,000367 < 0.05$.

Statistical Conclusion: Given that the p-value (0,000367) is below the significance level of 0.05, the null hypothesis is rejected. This means that there is a statistically significant association between the feeling of isolation and the perception of the 2024/2025 school year. The observed differences in the proportions cannot be attributed to random variation.

Implication 2: Based on these data, it cannot be statistically confirmed that the feeling of isolation was found to have a significant influence on students’ perceptions of the school year during the September 2024 war.

4.1.5. Global Analysis:

Regarding students’ perception of the 2020/2021 school year, the absence of statistical significance, despite the apparent differences in percentages, suggests that the feeling of isolation was not the main determining factor. The challenges characteristic of that period, such as the abrupt transitions to distance learning, technical difficulties, pandemic-related stress, quality of online teaching, among others, were likely more predominant and uniform factors influencing students’ perception, regardless of their individual experiences of isolation. In other words, while isolation may have contributed to the negative perception, other unmeasured variables appear to have had a more general and stronger impact. This could explain both the predominance of the “Somewhat unsuccessful” category and the low proportion of the “Successful” responses within the overall sample (28 out of 200, or 14%).

On the other hand, the statistical significance of the relationship for the 2024/2025 academic year clearly indicates that the feeling of isolation was a key factor in shaping students’ perception of the year. The result is striking: the vast majority of students who reported feeling isolated (76.27%) nevertheless rated their school year as “Successful”. Intuitively, one might have expected the opposite: isolation \square demotivation \square failure. What happened? It appears that, in the context of the war, some students drew on their experience of isolation as a psychological and academic coping strategy. To explain the ‘success paradox’ observed in 2024, where 76.27% of isolated students rated their year as successful, we can refer to Stress-Coping Theory. In a high-stress environment like war, students may use ‘academic withdrawal’ or isolation as a proactive coping strategy to create a sense of normalcy and control. By focusing intensely on remote coursework, students insulate themselves from external chaos, transforming isolation from a negative psychological state into a factor of goal-oriented resilience.

It should also be noted that the 2024/2025 school year (during the war) was generally perceived more positively than the 2020/2021 school year (during the COVID-19 pandemic). This improvement suggests that the experience gained in crisis management and the mastery of distance learning tools, acquired between the COVID-19 pandemic of 2020 and September 2024, played a crucial role. Distance learning in 2024 was likely more effective and better structured, which may have mitigated challenges and, consequently, enhanced students' overall perception of the academic year.

4.2 Impact of Students' Feeling of Isolation on Their Perception of the Most Effective Learning Modality

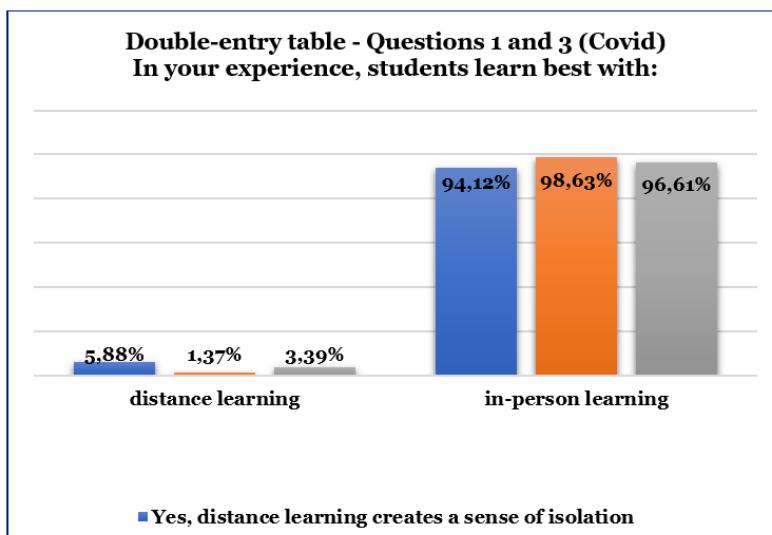
4.2.1. Questions analyzed:

- **Question 1:** "It is often said that distance learning creates a sense of isolation in students, as it limits social interaction with their classmates. Did you experience this feeling?" (Yes/ To some extent / No)
- **Question 3:** "In your experience, students learn best with:" (distance learning/ in-person learning)

4.2.2. Chi-Square Test Hypotheses:

- **Null hypothesis:** No statistically significant association was found between the feeling of isolation and the perception of the most effective teaching modality. The two variables are independent.
- **Alternative Hypothesis:** A statistically significant association was found between the feeling of isolation and the perception of the most effective teaching modality. The two variables are dependent.

Figure 9 (COVID-19)



Contingency Table (Figure 9):

Feeling of isolation	In your experience, students learn best with:		Total
	distance learning	in-person learning	
Yes	4	64	68
To some extent	1	72	73
No	2	57	59
Total	7	193	200

4.2.3. Descriptive Analysis of the Graph (Figure 9):

The graph in Figure 9 presents students' perceptions of the most effective teaching modality (distance and in-person), broken down according to their sense of isolation for the 2020/2021 school year.

- **Preference for distance learning:** The proportion of students who expressed a preference for distance learning is very low across all groups, with a maximum of 5.88% for those who reported feeling isolated ("Yes"), 1.37% for those who felt "somewhat" isolated and 3.39% for those who did not feel isolated.
- **Preference for in-person learning:** This is the widely preferred teaching modality, with very high percentages: 94.12% for students who reported feeling isolated, 98.63% for those who felt "somewhat" isolated and 96.61% for those who did not feel isolated.

In summary, students, regardless of their experience of isolation, show a very strong preference for in-person learning.

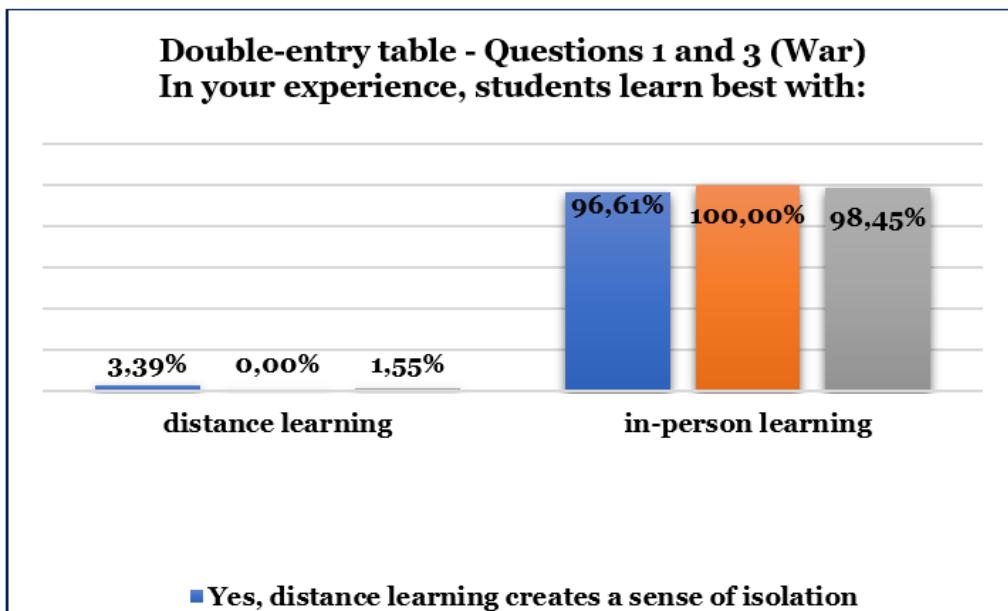
Interpretation of the Chi-Square Test: The Chi-Square test was carried out to assess the statistical significance of these observed differences.

- The p-value obtained is 0,3455.
- Compared to a commonly accepted significance level (α) of 0.05, we have $0,3455 > 0.05$.

Statistical Conclusion: Given that the p-value (0,3455) is greater than the significance level of 0.05, the null hypothesis cannot be rejected. This means that, despite the slight differences observed in the proportions, these variations are not statistically significant.

Implication 3: Based on these data, it cannot be statistically confirmed that the feeling of isolation was found to have a significant influence on students' perception of the most effective teaching modality during the COVID-19 pandemic.

Figure 10 (September 2024 war)



Contingency Table (Figure 10):

Feeling of isolation	In your experience, students learn best with:		Total
	distance learning	in-person learning	
Yes	2	57	59
To some extent	0	12	12
No	2	127	129
Total	4	196	200

4.2.4. Descriptive Analysis of the Graph (Figure 10):

The graph in Figure 10 presents students' perceptions of the most effective teaching modality during the war period, based on their sense of isolation, for the 2024/2025 school year.

- Preference for distance learning:** The proportion of students who expressed a preference for distance learning is extremely low, with 3.39% for those who reported feeling isolated ("Yes") and 1.55% for those who did. It stands at 0% for those who felt "somewhat" isolated.
- Preference for in-person learning:** Preference for in-person learning is almost unanimous, reaching 96.61% for those who reported feeling isolated ("Yes"), 100% for those who felt "somewhat" isolated, and 98.45% for those who did not feel isolated ("No").

In summary, as for the previous period, students overwhelmingly prefer in-person learning, regardless of whether they felt isolated or not.

Interpretation of the Chi-Square Test: The Chi-Square test was carried out to assess the statistical significance of these observed differences.

- The p-value obtained is **0,6189**.
- Compared to a commonly accepted significance level (α) of 0.05, we have $0,6189 > 0.05$.

0.05.

Statistical Conclusion: Given that the p-value (0,6189) is greater than the significance level of 0.05, the null hypothesis cannot be rejected. This means that there is no statistically significant association between the feeling of isolation and perceptions of the most effective teaching modality.

Implication 4: Based on these data, it cannot be statistically confirmed that the feeling of isolation was found to have a significant influence on students' perception of the most effective teaching modality during the September 2024 war.

4.2.5. Global Analysis:

The 2020/2021 academic year represented students' first widespread experience of distance learning. It was marked by technical difficulties, a lack of preparedness among teachers and institutions, and a decline in the quality of educational interaction. These challenges likely contributed to a generally unsatisfactory experience of remote instruction, affecting nearly all students whether or not they felt isolated. The feeling of isolation, although real for many, does not appear to have driven the preference for in-person learning.

The analyses of Figures 9 and 10 indicate that students' feelings of isolation did not significantly influence their perceptions of the most effective learning modality during either the COVID-19 pandemic or the September 2024 war. Descriptive results show an overwhelming preference for in-person learning across both periods, with percentages exceeding 95% regardless of students' reported experience of isolation.

It should be noted that the present study did not directly measure the reasons behind students' preference for in-person learning. From a socio-constructivist perspective (Vygotsky's socio-constructivist theory), face-to-face instruction may enhance learning through social interaction, collaborative dialogue, and scaffolding provided by teachers and peers. While these mechanisms were not directly assessed in the current data, they offer a theoretical explanation for why students overwhelmingly favored in-person learning.

In summary, students' strong preference for in-person learning appears to result primarily from their overall experiences with distance learning rather than from the psychological impact of isolation. Despite potential improvements in the quality of remote instruction between the COVID-19 pandemic and the September 2024 war, students consistently perceive in-person learning as the most effective modality.

4. Summary and Conclusion

Statistical analyses (based on p-values) reveal a mixed picture regarding the impact of students' feelings of isolation on their perceptions:

- **A single significant association** (with the threshold $p < 0.05$): The feeling of isolation is statistically and strongly associated with the perception of the school year during the September 2024 war ($p = 0.000367$).
 - Interpretation: This suggests that the experience of isolation during this specific period had a measurable impact on how students evaluated or perceived their

school year.

- **Absence of significant association** (with the threshold $p > 0.05$): The other tested associations were found to be non-significant:

- Isolation related to the **COVID-19 pandemic** is not associated with the perception of the school year ($p = 0.3349$).
- Isolation related to the **COVID-19 pandemic** is not associated with the perception of the most effective learning modality ($p = 0.3455$).
- Isolation related to the **September 2024 war** is not associated with the perception of the most effective learning modality ($p = 0.6189$).

A synthesis of the Chi-square test results (based on a significance threshold of $\alpha = 0.05$) highlights a single statistically significant relationship, suggesting that the influence of isolation is conditional.

The most striking result concerns the 2024/2025 academic year (during the period of war), where the feeling of isolation is strongly and statistically associated with students' perception of the year ($p = 0.000367$). From this, we can formulate two concrete hypotheses:

- **The success paradox:** Contrary to expectations, this association revealed that students who experienced isolation were the ones most likely to rate their year as "Successful" (over 76% of this group).
- **Adaptation (Stress-Coping Theory):** In the context of conflict, isolation appears to have been adopted by some students as a coping strategy. Isolating themselves may have allowed them to focus on their studies and create a sense of normalcy and control amid external chaos. In this case, isolation is not a marker of distress but rather an expression of goal-oriented resilience. In a high-stress environment like war, students may use 'academic withdrawal' or isolation as a proactive coping strategy to create a sense of normalcy and control.
- **Self-Determination Theory (SDT) and coping with stress:** In the context of crisis-induced distance learning, SDT provides a framework for understanding how students cope with stress. According to SDT, the satisfaction of three basic psychological needs **autonomy, competence, and relatedness** enhances intrinsic motivation and resilience. Students who retain a sense of control over their learning (autonomy), feel capable of mastering tasks (competence), and maintain meaningful social connections (relatedness) are more likely to cope effectively with the stress associated with isolation and uncertainty. Conversely, unmet needs can exacerbate feelings of helplessness, anxiety, and disengagement. Thus, SDT helps explain why some students manage to adapt and even succeed during periods of distance learning under crisis conditions, while others struggle.

Isolation does not always act as a negative factor; its impact depends on the psychological meaning that the student attributes to it in the face of adversity.

Conversely, analysis of the COVID-19 period (2020/2021) shows that the feeling of isolation was not significantly associated with students' perception of the school year ($p = 0.3349$). This can be explained by two hypotheses:

- **Homogenization of the experience:** During the pandemic, the challenges were more systemic and uniform: the improvisation of distance learning, widespread stress related to the virus, and technical difficulties. These factors created an overall mixed

experience (dominated by the “Somewhat Unsuccessful” perception), regardless of individual feelings of isolation.

- **Stronger external factors:** This suggests that other unmeasured variables (such as the quality of online teaching, connectivity issues, and the mental load associated with the pandemic) were more powerful determinants of students’ perception of the year than the simple feeling of isolation among peers.

In short, the severe organizational challenges and the collective fear of illness caused by the pandemic took over, making the impact of isolation on students’ evaluation of the year effectively invisible.

A second strong and consistent finding runs through both periods: the feeling of isolation has absolutely no influence on students’ preference for the most effective mode of learning (in-person or distance).

- COVID-19: $p = 0,3455$ (Not significant)
- War period: $p = 0,6189$ (Not significant)

At this stage, two hypotheses can be proposed:

- **Structural preference for in-person learning:** Descriptive analysis confirms a strong and nearly unanimous preference for in-person learning across both cohorts (often exceeding 95%).
- **Isolation versus social pedagogy:** This finding indicates that the choice of the most effective learning mode is driven by pedagogical and social/interactional criteria (the quality of learning and face-to-face guidance), rather than by students’ personal emotional state (feeling of isolation) experienced during periods of distance learning. Students make a clear distinction: distance learning serves as a case of force majeure continuity measure, while in-person instruction remains the standard of excellence for learning.
- **Vygotsky’s socio-constructivist theory:** From a socio-constructivist perspective, face-to-face instruction may enhance learning through social interaction, collaborative dialogue, and scaffolding provided by teachers and peers. While these mechanisms were not directly assessed in the current data, they offer a theoretical explanation for why students overwhelmingly favored in-person learning.

5. General Conclusion

The impact of feelings of isolation appears to be highly dependent on the emotional context and the nature of the crisis. The September 2024 war crisis was the defining event that shaped the 2024-2025 school year in Lebanon. The isolation it caused, perceived as more sudden, more distressing, and more intense than a simple lockdown, profoundly influenced how this period was perceived. Isolation, regardless of the event (COVID-19 or the September 2024 war), had no statistically significant influence on students’ preferences or perceptions regarding the most effective learning modality (e.g., distance vs. in-person). Thus, their learning preferences appear to be independent of their feelings of isolation during these crises.

These results demonstrate the importance of considering psychosocial aspects when

developing educational policies in the aftermath of a crisis. While in-person learning remains the most preferred standard, it would be useful to explore ways to incorporate, within a hybrid model, the self-reliance skills that some students developed during periods of isolation, particularly during the war.

It would also be interesting to examine in greater details the factors that enabled certain students to transform isolation into a source of success in 2024/2025, for example by investigating the role of family support and socioeconomic conditions. Such an analysis could help explain why some young students (ages 15–18) were able to benefit from this situation while others suffered from it.

Such a study would make it possible to better identify resilient students and to implement more targeted and effective psychosocial support in the event of future crises.

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