

Systematization of the Environmental Educational Experience: The Home/School Garden as a Strategy to Address Food Security in the Post-COVID-19 Confinement School

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ABSTRACT

School/home gardens have been used as strategies to address environmental problems; however, there is little information about their contribution to returning to the classroom after the COVID-19 pandemic. This article reports the systematization of an experience in an educational institution in Bogotá, with high school students, seventh and eighth grades, in face-to-face and remote modalities. The results consist of reconstructing the strategy and the didactic process based on planning, teaching, learning, evaluation, and institutional and family dynamics. The results also highlight aspects that affect or support the educational process in each modality. Other results correspond to the reflections with the students about some aspects related to food security and under which the teacher designed the strategy: (i) how home gardens can contribute to achieving some aspects related to food security; (ii) how pesticides can be a risk for food security in Colombia; and (iii) development of the garden, limitations, and difficulties. Finally, the discussion highlights the main learnings, interactions with the community, difficulties, transferable elements, and suggestions to improve future experiences.

Keywords: systematization of experiences, school/home garden, food security

INTRODUCTION

There are multiple experiences in environmental education that mention the school and home gardens as valuable experiences in schools. For example, the Food and Agriculture Organization of the United Nations (FAO, 2009) mentions the importance of incorporating the school garden as a strategy to enable active and experience-based methodologies, linking student knowledge and real-world situations. Likewise, authors such as Ceballos (2017), Gozalbo and Aragón (2016), and Vélchez and Escobar (2014) mention that school gardens allow:

- to complement theoretical content at a practical level,
- to develop strategies of inquiry in students, and
- enhance collaborative work skills.

Several authors argue that school/home gardens are spaces to build values and ethical attitudes toward the environment and reflection on environmental situations through the integration of social, cultural, and economic elements, among others (Casallas & Martínez, 2013; Guerrero & Peñaloza, 2019; Rodríguez-Haros et al., 2013). In addition, some studies show

that school gardens make it possible to identify various traditional, cultural, and educational practices (de Oliveira, 2018; Melo Herrera, 2019). In short, school/home gardens as a pedagogical and didactic strategy allow the community to build multiple learnings from the integration of theoretical-practical methodologies. Likewise, the gardens allow communities to analyze environmental situations from an ethical perspective and integrate social, environmental, and cultural elements and recognize the multiculturalism present in the classroom.

The Educational Institution (EI) has had a tradition in the school garden for 12 years. The EI has been working on this strategy within the natural sciences and environmental education subjects under the project “Sow your Space” and a transversal work resource with other areas. However, the context of the COVID-19 pandemic and the immense economic, social, and cultural changes that affected the school caused educational realities to change. With it, the school garden had to migrate to a new approach. The new vision of “school/home garden” would make it possible to include students who were constantly at home and would not return to school (remote mode).

The systematization of the experience as a process after the experience intends to document, expose, and analyze school/home garden strategy development during the return to EI after confinement due to the pandemic. This process allows the strategy to recognize difficulties, advantages, and challenges in its double modality (face-to-face and remote). The systematization also identifies transferable elements to other educational contexts that enrich the work of school gardens and include home gardens in post-confinement educational experiences. Finally, this methodology provides the academic community with a reflection on the consolidation processes of environmental education through the school/home garden in classrooms in precarious and vulnerable social contexts such as the one caused by the EI where the COVID-19 emergency evidenced the most affected.

Likewise, the systematization enables the beginning of the reconstruction of the history referred to the environmental strategies developed in the EI beyond a descriptive look, identifying lessons learned and opportunities for improvement to continue expanding the scope of the project "Sow your Space" at the curricular level. Finally, this process inspires other teachers to develop strategies in environmental education from various areas of knowledge and their socialization through systematization.

"Food safety" guided the school/home garden, considering the multiple advantages that this theme presents in the contents to work on in the school period for the area of natural sciences and environmental education. Food security motivates spaces for discussion with students regarding:

- a. responsible production and consumption of food in homes and institutions (Merçon et al., 2012; Rodríguez et al., 2015);
- b. recovery and resignification of spaces for a pedagogical agricultural exercise at school and home on a short and large scale (de Oliveira, 2018);
- c. positions and actions in the face of local and global problems in food security that encompass values and ethical reasoning (Casallas & Martínez, 2013); and
- d. reflect and improve eating habits.

The teacher presented the students with two questions to introduce food safety in the classes:

- a. How home gardens can contribute to achieving some aspects of food security, and
- b. How pesticides can be a risk for food security in Colombia.

METHOD

The present systematization of experiences is a community's reflection around a practice developed, lived, or reported through the reconstruction of the experience reaching a critical view of the process (De Souza, 2008; Jara, 2012, 2018). Likewise, systematization enables the educational community to identify and explain the main learnings about their educational experience, share them, debate them, and contribute to producing new knowledge (De Souza, 2008; Jara, 2012, 2018).

The investigations reported that the systematization of experiences presents valuable elements since it transforms the realities together with the communities, identifies and values the knowledge of the community (Jara, 2012, 2018) and enriches the practices when the experience is recognized and compared with others (Messina & Osorio, 2016).

The systematization of the school/home garden experience is the product of the teaching reflection of the author of this document, who is also the leading teacher of the strategy at the EI where she works. From this reflection arises the idea of reconstructing the experience, learning and perspectives for its continuity over time and sharing with other teachers. In this way, spaces for reflection can be opened with similar experiences and replicate transferable elements in other contexts.

The reconstruction of the experience assumes as sources the teaching planning, photographs and videos of the teacher and the students, and written works presented by the seventh and eighth-grade students of the EI. This information is the input to describe:

1. Reconstruction of the strategy;
2. Didactic reconstruction based on
 - a. planning,
 - b. teaching,
 - c. learning,
 - d. evaluation, and
 - e. institutional dynamics and family; and
3. Reflections with the students about some aspects related to food security.

Such reflection based on the two guiding questions of the work in the school/home garden:

- a. How home gardens can contribute to achieving some aspects related to food security,
- b. How pesticides can be a risk for food security in Colombia and the reconstruction of
- c. Development of the garden, limitations, and difficulties.

Finally, the discussion presents the main learnings, interactions with the community, difficulties, transferable elements, and suggestions to improve future experiences.

RESULTS

Reconstruction of the Strategy

At the EI, the school garden has been a strategy that is part of the "Sow your Space" project was interrupted due to the COVID-19 pandemic. Therefore, for August 2021, the EI reactivates its alternating attention: face-to-face modality (those students who permanently attend the institution) and remote modality (those students remain permanently and continuously at home).

To build favorable educational environments to continue and integrate academic work with students who return to the classroom and those who continue at home, the teacher takes

up the school garden and transforms it into a school/home garden.

The strategy consisted of ten activities throughout fourteen 1-hour class sessions for face-to-face students. For remote students, the hours of the sessions vary due to the difficulty of connecting students and the different tools used (voice and text messages via WhatsApp, videos, guides) to supply synchronous interactions.

The following section describes the face-to-face lessons/virtual lessons with the face-to-face group (students who attend the institution permanently and continuously). Then, the teacher replicated those lessons through virtual synchronous sessions, voice messages, WhatsApp, videos, and guides with remote mode students (students who stay permanently and continuously at home). The sessions aimed at developing the school/home garden and the issue of food safety and the use of pesticides. The teacher designed a sequence of classroom activities by session, taking these aspects into account.

Sessions 1 & 2

1. **Activity 1-Face-to-face class/virtual class:** The teacher asks the students what they know about food safety and what they think it means. She explains food safety using multimedia resources, reading and dynamic questions on the subject. There she explains the principles of food safety. The teacher and students jointly characterize each concept through examples close to the student's reality. Based on the discussion on the subject, the teacher introduces the school/home garden as an exercise that aims to rescue the project within the framework of food security and give continuity to the garden in the institution and homes.
2. **Activity 2-Autonomous work at home for the two modalities:** The students make a video exposing a frieze that explains
 - a. the planting process of the plant with which the garden will start (at home or school according to their modality) and the care that students must take for its maintenance (essential nutrients), and
 - b. how can the home garden contribute to strengthening food security?

Sessions 3 & 4

1. **Activity 1-Face-to-face class/virtual class:** The teacher presents the self-assessment grid to the students and explains the process for its development. After developing the grid, the students present their work to the teacher and assign a grade for the exercise, receiving feedback from the teacher.

Sessions 5 & 6

1. **Activity 1-Face-to-face class/virtual class:** The teacher gives feedback on the videos presented as autonomous work and asks the students if they know what pesticides are and the reason for their use. Based on the answers and with the support of videos and graphic presentations, the teacher explains what a pesticide is and its effects on water, soil, air,

biodiversity, and human health. She also explains the process for planting and maintaining the plant and the importance of the substrate, conditions and nutrients for optimal growth.

2. **Activity 2-Autonomous work at home for remote students:** Students working remotely at home make a video to evidence the sowing of the plant in homes. The teacher suggests planting aromatic plants, legumes, and vegetables.

Sessions 7 & 8

1. **Activity 1-Face-to-face class/virtual class:** Students develop the self-assessment grid exercise by comparing it with the previously developed grid. The students presented their work to the teacher, and they assigned a grade to this exercise. Then, they received feedback from the teacher according to the progress and difficulties identified in the comparison. The grid intends for students to reflect on their learning process, be aware of the advances and setbacks that may exist and encourage improvement actions over time.

Session 9

1. **Activity 1-Face-to-face class:** The face-to-face modality students, together with the teacher, begin the reestablishment of the garden, supported by the security personnel of the EI. The teacher agreed with the students to use one session a week to maintain the garden.

Sessions 10, 11, & 12

1. **Activity 1-Face-to-face class/virtual class:** The teacher asks the students if they know what glyphosate is, what they have heard about glyphosate and where they have heard that information. From the reading of two news items related to
 - a. social impact of glyphosate and
 - b. millionaire fines for the consequences of its use, as well as the podcast "Relatos anfibios: Voces desde cocal" (Mila et al., 2019, 35m), students participate in the debate regarding the social implications of the use of chemical pesticides in agriculture.

Likewise, the teacher asks the students how the use of pesticides affects the food security of rural and urban communities. The debate begins concerning the socio-biophysical implications of using chemical pesticides in agriculture. Likewise, the teacher asks and builds with the students a comparative table showing how the use of pesticides affects the food security of rural and urban communities.

2. **Activity 2-Face-to-face class/virtual class:** Classwork for face-to-face and remote mode at home students: Students make an exhibition-type video that explains
 - a. how we can replace pesticides in our school/home garden and
 - b. how pesticides can damage farmland and how it affects communities in the countryside and the city.

Sessions 13 & 14

1. **Activity 1-Face-to-face class/virtual class meeting:** Students develop the final exercise of the self-assessment grid, considering a comparison with the grids developed in previous sessions. The students present their work, assign a grade for the exercise and finally, together with the teacher, they verbalize the progress and difficulties that the students felt throughout the strategy process.

Didactic Reconstruction

In the EI, the understanding of education COVID-19 context and, consequently, the design and implementation of the school/home garden strategy implied considering that some students did not return to face-to-face lessons due to

- a. the families moved to other neighborhoods and cities to find a responsible adult for the students' care or because they moved with relatives due to the impossibility of paying for a place to live,
- b. families were afraid of a possible contagion at school that would contaminate the family, and
- c. losing a relative due to COVID-19 increases the feeling of vulnerability and fear of returning to school.

According to the above, the processes of planning, teaching, learning, evaluation, and institutional and family dynamics around the school/home garden present differences between the face-to-face and remote modalities. Among them can be mentioned in the following.

Planning

The process of planning and developing the experience with the two modalities brought a broader workload, changes, and conscious and unconscious extension in the work schedules of the teacher. Thus, the teacher offered a greater dedication in time to follow up on remote students who stopped responding to messages or sending assignments.

Similarly, the teacher dedicated more time to addressing the doubts and concerns of remote students who communicated by messages throughout the day and part of the night. The latter because only until the adults came home at night the remote students could access the cell phone and communicate with the teacher. Added to this panorama is the administrative burden developed in the school for both modalities, including the preparation of documents such as planning, reports of delivery of grades, lists with updated data, observers, and follow-ups, among others. These changes cause an excess of the planned working hours and a considerable decrease in the teacher's rest time.

The conditions with remote and face-to-face students also became a challenge for the teacher. This situation opened the way for her to reflect on the strategies traditionally used and resort to constant updating of resources, search for information on platforms and support material. So, the teacher tried to resignify the activities and tasks by recognizing multimedia tools. With this, she listened to the students remotely and then gave specific feedback based on the young people's speech in the videos and the development of the activities in the work guides.

Food security as a theme from the home/school garden also allowed the teacher to recognize some socio-economic shortcomings and precarious conditions of remote and face-to-face students. With this recognition of daily life, the teacher opened the way to redesign activities, generate closer support strategies, make the strategy more flexible and manage aid for families with more precarious conditions.

Teaching

The process of planning and developing the school/home garden had to include

1. the construction of classes for the students who returned in face-to-face mode after 18 months away from the classroom, and
2. the planning for those students who continued at home and whose socio-economic conditions did not allow a constant synchronous connection.

Most students do not have a stable internet connection in their homes and/or adequate equipment that supports programs for online connection.

In order to try to solve this gap between the face-to-face and remote modalities, the teacher carries out the synchronous virtual sessions through the meet platform. This platform has a simple interface, and the hardware requirements allow a stable connection from a mobile device, unlike the team's platform, where the students hosted their accounts.

Likewise, the activities had to consider that both modalities received the contents, contributions, feedback, and discussions, among others, in a similar way or as similar as possible and minimize the impact of not being in the presence of the school for remote students. In this way, the synchronous sessions with the remote modality were voluntary, and the teacher recorded them to share them in small parts on WhatsApp. For the students of this modality, the teacher designed a more significant number of explanatory guides than the face-to-face ones. The teacher also sent voice messages with timely instructions to the remote students. All these alternatives to try to overcome some difficulties which emerged from the absence of classroom interaction that the face-to-face students do had.

With the face-to-face modality, it was necessary to create sessions, guides and resources that would allow students to feel comfortable and safe in the EI and that would also make it possible to make a transition from home to school. For this, the teacher considered the low levels of attention and concentration in the activities, the shortcomings in the reading-writing processes and other difficulties arising from the absence of direct interaction at school after 18 months.

At the contextual level, the students of both modalities (face-to-face and remote) come from low-income families. In most cases, the adults responsible for the household were unemployed due to the pandemic. In addition, some families are displaced due to the country's internal conflict or are foreign immigrants fleeing their countries searching for better jobs and economic opportunities. Faced with this panorama, one of the challenges consisted in designing activities according to the characteristics of the context. Given this, the teacher had to think of alternatives for the remote mode

students who had difficulties delimiting the planting place since they live in tenancy rooms or tiny spaces that do not allow sowing on a medium scale. In contrast, the face-to-face students had the space of the school destined for the garden. Therefore, the teacher suggested doing minimal-scale sowing remotely in the students' homes and involving simple elements such as an egg seedbed, pot, soil, and the plant. In this way, the students had the opportunity to develop the experience at home according to their possibilities.

As a theme in the teaching process of this strategy, food security allowed the teacher to design activities in accordance with the reality of the country and recognize rural and indigenous communities with environmental problems like the context in which young people live. To address this issue, the professor tracked tools for the two modalities, such as podcasts and videos, which, immersed in a strategy, enable direct interaction with the testimony of the protagonists of the stories of such podcasts and videos.

Learning

The return to classes after an 18-month absence generated great expectations in the face-to-face students. The students expressed their joy at returning to the institution since they missed their classmates and teachers. About 12 remote students reported missing school, and they decided to return over time. They decided, considering the experiences told by their peers, with whom they had constant communication.

The return through the garden allowed the educational community to return under conditions different from the traditional ones before the pandemic since they held most of the sessions related to food safety outdoors. The face-to-face modality students pointed out this situation as positive, evidenced in their attitudes, emotions, and constant collaboration. For face-to-face students, the return to school through the school/home garden strategy allowed the transition to be easier since they did not have to be inside a classroom all the time. On the contrary, they could have an outdoor space surrounded by plants to carry out some activities. On the other hand, for the remote students, the planting of the school/home garden presented difficulties due to the absence of adequate physical spaces for the development and growth of the plant.

For face-to-face students, outdoor work:

- a. this made them feel safer against possible contagion,
- b. this generated a pleasant atmosphere since they were in the middle of plants and did not feel confined, isolated, and bored as at home, and
- c. this allowed them to develop dynamic activities that involve physical movement.

For remote mode students, some of the activities related to food safety that took place outdoors at school had to be modified by work guides with more specific descriptions, videos, and explanatory voice messages. Due to this, the guide's development and the delivery of videos by some students was a more theoretical exercise. Only those who had planting space at home could develop the practice.

The students of face-to-face and remote modality with internet access and equipment presented a constant accompaniment of the teacher in the development and

orientation of the activities and explanations regarding the pillars of food security. This situation is different from remote mode students with access difficulties, who had communication gaps with the teacher due to time, resources, and interaction possibilities. In this way, the tasks and activities performance between face-to-face and remote students with Internet access was markedly different compared to remote students without constant connection. Furthermore, the exercises and tasks of the students in face-to-face and remote mode with internet access were of higher quality since they had the interaction of the teacher who could constantly point out the difficulties, provide feedback and correct them.

Exercises involving discussion, brainstorming, and synchronous interaction and brainstorming were less detailed and non-existent with some remote students without constant connection. In this way, the activities related to food security that they presented were less complex in their development. They only copied definitions, concepts, and opinions from the Internet on multiple occasions.

Assessment

The evaluation process can be conceived in three non-exclusive ways:

1. The teacher had to include the grade assigned to remote and face-to-face students in their grade report, and the academic coordination of the institution followed this information,
2. Evaluation of the students' understanding of the problems, the integration of the concepts, the fulfilment of the learning objective of the school/home garden and food security, and
3. The evaluation of the strategy, the teacher's intentions and the context.

For item 1, assigned grade, the teacher resorted to the institutional self-assessment grid, modifying it and integrating the objectives of the school/home garden and food safety as the central theme and the particularities and activities for remote and face-to-face students. All this process led through the "Complex Environmental Competence Model" (CEC) contributions (Puerto & Tovar-Gálvez, 2020; Tovar-Gálvez, 2020a, Tovar-Gálvez et al., 2021).

The teacher took to design the grid some of the components, dimensions and possible performances of the students from the CEC:

"(i) cognitive: knowledge through which subjects approach reality, (ii) metacognitive: the ability of subjects to reflect, manage and evaluate their learning, (iii) social: collective learning and cooperative work, (iv) contextual: the action of subjects on their immediate environment, (v) factual: the degree to which subjects transform their environmental reality, and (vi) identity: personal, social and professional commitments" (Tovar-Gálvez et al., 2021).

Thus, the grid is a guide in redesigning the sessions. The grid is also a metacognitive instrument that students use to interact with their knowledge accompanied by the teacher. Each student had to expose the development of their

instrument and, in the end, assign a grade that would account for the reflection process. The grid contains the grade assigned by the student.

The development of the evaluation through the instrument was carried out in three moments:

1. The detailed grid explanation with face-to-face students was in class, while with remote students through a virtual synchronous meeting and video message via WhatsApp. With this, the teacher wanted the student to understand the importance of reflection in developing the questions,
2. The work review was developed on the grid and delivered in class by the face-to-face student and sent on video by the remote student. The review involved feedback from the teacher to the face-to-face students in class and WhatsApp to the remote students in preparing the final delivery, and
3. The review of the grid's final exhibition was in class with face-to-face students and through WhatsApp for remote students.

For item 2, evaluating the students' understanding of the problems, the teacher considered the progress in the depth of the students' reflection in the grid. Then, she assessed the activities based on the fundamental questions of the development of the strategy:

- a. How home gardens can contribute to achieving some aspects related to food security and
- b. How pesticides can be a risk for food security in Colombia.

The teacher made the evaluation more flexible, allowing students to have multiple ways of demonstrating their work (videos, photos, texts, voice recordings). In addition, some exercises were formative evaluations, where several opportunities were given based on constant feedback so that students could improve their delivery.

The evaluation shows differences between the development of activities and tasks of the students based on their socio-economic precariousness. Remote students who did not have a full-time mobile device or computer and Internet presented work late and with a more superficial level of consultation and understanding. Unlike the face-to-face or remote modality, students with constant access to computers and the Internet had a greater possibility of interacting with the teacher to clear up doubts and receive guidance and feedback.

Students in both modalities are surprised when the grade they assign to themselves ends up representing their official grade. They are not used to self-assess, and it is difficult for them to recognize their progress, capabilities, and shortcomings. They had to have constant monitoring to understand the importance of the self-assessment grid. When carrying out the last grid exercise, many face-to-face students presented a greater depth and reflection on their process. This situation is unlike the remote students who presented low interaction with the teacher due to their difficulty accessing computers and the Internet.

Finally, regarding item 3, the strategy evaluation process is under construction. In this article, this process begins,

allowing us to know the planning and development. This article becomes an input for the author, who is a classroom teacher and a researcher, and other teachers from different theoretical positions to analyze, evaluate, and redesign the strategy in depth.

Institutional & family dynamics

The school/home garden had the support of the EI security personnel and some adults who live with the students remotely. Based on their former experience and knowledge, the adults participated in the students' videos explaining the type of plant planted and its usefulness. They were also actors in the socialization process of the planting and strategies for maintaining the plant at the face-to-face and remote levels.

The EI teachers in mathematics, English/Spanish and social/ethics decided to join the project to finalize the strategy. In this way, each area designed and developed activities around the school/home garden for the following academic period. In conjunction with this process from the area of natural sciences, we participated in the EI institutional forum, presenting the mainstreaming of the areas as a new experience in the school/home garden.

On the other hand, there are some difficulties in the students' family dynamics with remote modality, which affected the process of the young people due to the absence of follow-up and support at home:

- a. Most of the adults responsible for the students are absent from home a large part of the time since they are engaged in informal employment or have long working hours away from their residence,
- b. There is evidence of a lack of technological skills among the parents and guardians of the students,
- c. Some adults are not interested in the student's process, abandon communication with the teacher, do not follow up on the students' work, and
- d. Some families had to migrate to other country areas for economic reasons, and contact was limited.

All this caused significant gaps in communication with remote students who presented these characteristics. They could not receive synchronous feedback. Therefore, their process did not reach the depth and reflection that face-to-face students had or remote students who had the constant accompaniment of a responsible adult and possibilities of synchronous connection.

Finally, the school/home garden for 2022 will be only a school garden since the students have returned entirely to school. The students who work in the garden are rotated by academic periods, allowing new students to live the experience of the garden.

When finalizing this article, from remote students, 39% dropped out of school and did not return to the classroom, 43% returned to the EI and continued their studies, and 18% switched to other EIs. Of the 100% of students in the face-to-face modality:

- a. 10% dropped out of school and did not return,
- b. 87% returned to the EI and continued their studies, and
- c. 3% transferred to another EI.

Students' reflections on some aspects related to food safety

This description has as its starting point the two guiding questions of the work in the school/home garden:

- a. How can home gardens contribute to achieving some aspects related to food security?
- b. How can pesticides be a risk to food security in Colombia? The description also includes pop-up results related to
- c. Development of the garden, limitations, and difficulties. Some excerpts from the speech of remote and face-to-face students support the descriptions.

a. How can home gardens contribute to achieving some aspects related to food security?

For students, the school/home garden facilitates the availability of "healthy" food since they are the ones who guarantee production according to their needs and means. Furthermore, the students affirm that through the garden, it is possible to access fresh and varied products that are not available in the market:

"By planting the plants, myself, I can have food at my fingertips... so to speak..."

"As I have my garden at home or like right now at school, I know that I am available to pick and have it close... to eat them... cook them..."

"... as I have my products grown at home, in quality and without paying a penny..."

The students also mention that the home/school garden allows access to healthy foods such as vegetables and fruits, which they no longer consume due to the change in eating habits due to the economic precariousness of families. For the students, the garden allows access to cleaner and healthier products and the possibility of not depending on the availability of food and prices given by the trade. Likewise, the students highlight the safety of food not only within the primary health standards in the development of the garden but also in actions to avoid affecting health and biodiversity due to the use of fertilizers, agrochemicals:

"As I am the one who handles and grows them at school... the garden and all that, I know that my food is free of toxins."

"If people learned to cultivate their products well and not throw toxic fumigants on them, but rather fumigate them like garlic, water in garlic so that they can eat in peace."

"As in my case... what I have planted in my house... I know it is healthy... and I could exchange it with another person or a grower."

b. How can pesticides be a risk to food security in Colombia?

For students, the use of pesticides such as glyphosate in Colombia threatens food security since it has affected ecosystems, loss of biodiversity, and limited food access and

safety. They also reflect on the illness and death of indigenous and farmer populations and the violation of their rights. Consequently, this situation brings the displacement, the loss of the farmer and indigenous culture, the adoption of new unhealthy eating practices and an immense distrust in the state:

"Pesticides not only harm the plants they want to kill but all plants and animals."

"It can also affect the water that is consumed... when the rain washes it off the plants and the soil and pollutes the rivers."

"... they poison plants, animals and people" ... and they get sick and die..."

"People have to leave, and there is displacement and loss of indigenous and farmer culture because their culture cannot be brought to them, and they have to act like those from the city and forget their roots."

"Loss of confidence in the government."

c. Development of the garden, limitations, and difficulties.

In the activities development, there was the recognition of the local and traditional knowledge coming from the students and their families. In this way, the community rescue other ways of seeing the world and other forms of knowledge production. From this knowledge mentioned by students, they were able to contemplate strategies for the management and improvement of the garden at home and at school, which were unknown to the students and the teacher.

"... My dad told me that in the field, it is sown like this..."

"... when I go to my uncle in Mochuelo, we put a fertilizer on the carrots that my aunt and my cousins make with the poop they collect from the farms."

"In my house, we pour water with garlic on the plants, so they don't catch lice, teacher; why don't we pour that on them?"

"My mother's grandmother told her that it was time to sing the morning song to the plants so that they grow."

Some students mention that the home/school garden has limitations as it requires experts for its development and care if an expansion to a medium scale. Moreover, they do not conceive the exercise from the social fabric network with the community. Likewise, they mention that the garden at the school will not be a long-term project since there is an absence of caring attitudes from the students of other courses and another shift.

For some students of remote modality, there were difficulties developing the garden/home due to the reduced space in which they live. Many of them are displaced from another city/country and live in small rooms for rent without

the possibility of a space that makes it possible to make a garden.

Due to the lack of economic stability of the families, there is high mobility of students, mainly from the displaced population. For this reason, the students do not think about the project in the long term. Furthermore, they do not feel rooted in the territory since they know they will soon move from home and area. Moreover, for some students, the home/school garden does not guarantee food security since they affirm that they will continue to depend on large merchants to acquire products in one way or another.

DISCUSSION AND CONCLUSIONS

The results show the challenges faced by the Educational Institution (EI) and the project teacher to initiate a return to class after the COVID-19 quarantine. The challenges arise because the institution now has students in two modalities: face-to-face (those who attend the institution permanently and continuously) and remote (those who stay permanently and continuously at home).

The community translated the changes in the modality in the school into didactic processes of planning/execution, teaching, learning and evaluation, where it became necessary to rethink the teacher/student interaction. Experience shows that the didactic processes are also a learning process on the part of the teacher since they mobilize her towards new forms of teaching. Given this, the importance of:

- a. The detailed planning of the design and structure of the lessons, the careful activities selection and their intentionality. The institution could minimize the gap between face-to-face and remote students in this way.
- b. The monitoring of the learning progression through a constant search for solutions to generate a didactic and communication interaction that would motivate the students of both modalities and that could improve their performance.
- c. The challenge of searching, selecting and redesigning the most appropriate ways to assess self-regulated and reflective learning with students. This assessment understanding that the students' levels of autonomy and self-regulation not only depend on the didactic reflection of the teacher and the school. These processes also involve students and their families' socioeconomic and emotional factors.
- d. Feedback in both modalities is relevant and detailed. The intention of the evaluation as a reflection and improvement of the learning process beyond numerical measurement is remarkable. The process involves the flexibility of the evaluation according to the modality and context of the students.

The CEC (Tovar-Gálvez, 2020a; Puerto & Tovar-Gálvez, 2020; Tovar-Gálvez et al., 2021) contributions to the evaluation process of this strategy made it possible to generate an evaluation process comprehensive and reflective. Likewise, experience shows how CEC has excellent potential as a guide for the planning, redesign and development of activities. This potential arises from integrating the cognitive, metacognitive,

social, contextual, factual, and identity components (Tovar-Gálvez et al., 2021).

The experience is consistent with that reported in Galvis López et al. (2021), Medina-Guillen et al. (2021), and Verástegui and Vales (2022). These investigations show a considerable increase in teachers' workload and working hours in times of pandemics. The changes made in practice to improve the teacher/student interaction and reduce the differences between the students of the two modalities generated an increase in working hours. This phenomenon occurs due to the greater time spent designing and evaluating activities and new assignments associated with the management and traceability of educational processes.

The return to post-quarantine classes and the existence of two forms of return: remote and face-to-face, allow a closer look at the economic, social, emotional, and digital gaps of students and their families. The experience evidenced inequalities and social exclusion as the lack of access to technological resources, low level of support at home, and disparate skills and results among students due to the absence of interaction with the teacher.

These social inequalities have increased the gaps that already existed before the COVID-19 pandemic, revealing new forms of segregation and disengagement at school and unequal learning among students. For this, it is necessary to reinvent itself as a teacher and school, so it is necessary to think and rebuild strategies that enable inclusion and equity as functions and principles that EIs must comply with (Tarabini, 2020).

The experience describes how the curriculum is made more flexible and contextualized through self-reflection on educational practice and addressing the challenge of the two modalities. This perspective leads teachers to prioritize content and learning objectives. All these learnings are to approach the construction of a more inclusive school without ignoring that this is just one of the many steps that FDI and teachers must take a hand in hand with the State to improve the social and economic conditions of students and their families.

The theme of food security in the school/home garden framework made it possible to make visible some elements of the traditional farmer knowledge coming from the families of the students. From the student's perspective, these practices make it possible to recognize and dialogue with other knowledge and epistemologies to explain the world (Tovar-Gálvez & Acher, 2019), providing multiple elements to build their interpretations and explanations.

From the teacher's perspective, recognizing other knowledge and epistemologies establishes bridges for epistemological dialogue (Tovar-Gálvez & Acher, 2021) and culturally inclusive science teaching practices (Tovar-Gálvez, 2020b). Furthermore, these bridges allowed approaching a reconstruction of school knowledge from the recognition and appreciation of farmer culture (Tovar-Gálvez & Acher, 2021) in the development of exercises with students of the two modalities.

There are some difficulties in carrying out the validation process of farmers' culture and knowledge. However, including

this knowledge system in the lessons is an opportunity to improve the educational experience in the future.

In this way, it can become a didactic proposal for recognizing and rescuing traditional farmer knowledge through work in the school garden.

The school/home garden strategy offers the opportunity to develop and explore concepts related to food security as a cross-cutting theme that is not usually dealt with in the classroom, despite its relevance for most of the population. The work developed by the students through food security facilitated reflection on the socio-biophysical implications of the use of pesticides in Colombia and the importance of guaranteeing the principles of food security.

The different activities carried out through the home/school garden allowed the students to approach the recognition and understanding of food security through the relationship they made between the situations in their daily lives and the environmental situations with the social reality and country politics. Thus, the students identify and recognize some causes of Colombia's loss of food security.

The school/home garden strategy and the theme of Food Security are not contemplated in FDI within the official curriculum in the teaching of natural sciences. In this way, the possible contributions to didactics, transversality and integration of the areas and education for citizenship are unknown from the reading of realities from a critical perspective and its consequent action in practice. Furthermore, since the community does not recognize the school/home garden as part of the curriculum, the cultural diversity found in local and traditional practices excludes students' knowledge and families' knowledge and knowledge (Melo Herrera, 2019).

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