



## RESEARCH ARTICLE

### STRATEGIES OF EDUCATIONAL INTERVENTION TO COUNTERACT THE INTERNAL PROBLEMS OF UPPER SECONDARY EDUCATION BASED ON THE APPLICATION OF A PROGRAM CALLED "ECOLOGICAL SYSTEMS OF DR. MARCOS COLÍN

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#### ABSTRACT

Today there is a problem in the life of high school students, failure rates, poor school performance, poor behavior, lack of motivation and school dropout become greater, and hardly implemented strategies do not reflect optimal results, however, every day students are more vulnerable to situations of risk. In the present investigation we will present some existing problems within a baccalaureate and the strategies that have to be implemented to reduce the failure rates, low academic performance, bad behavior and lack of motivation. We will focus on the student and the surrounding environment, the learning environments and the positive relationship of implementing an educational intervention strategy in the reduction of the problems described above.

#### INTRODUCTION

The development of individuals has a place in the mind, and the key process is the activity that we as human beings have, develops cognitive, emotional, motivational and behavioral skills, however, it is not the whole of human development, although it is true, which begins with the cognition of emotional motivation, it is also true that all these things involve, in particular, content there, about something in context with their environmental learning. From the genetic perspective, more and more research indicates that genes not only determine our state of health, but also determine our behavior. But, not only genetics influences our behavior, but the environment also plays an important role. On the other hand, the geneticist professor Nathan Gillespie (2001) mentions "... Genes need an adequate environment to express themselves, so that, if these conditions are prevented, genetics can be prevented from fulfilling its mission [...]" Which stipulates that many traits are from a genetic inheritance even those of behavioral type, and even those harmful behaviors (violence, addictions, psychological). That is, the environment is made up of two factors: One of them is the shared environment, that is, everything that absorbs from their family life and that people have in common with their siblings. Another is the non-shared environment, derived from individual experiences, which is the aspect that really 'makes us different', as the researcher pointed out. For Gillespie, genetics will always be, at most, 'a predisposition of the

individual to manifest certain personality traits', so that the environment 'will be decisive to favor that such features emerge or not'. Hence the importance of teaching, within educational institutions to what we call "educational microsystem", strive to generate learning in students, in order to participate in this external environment of the individual, generating changes in the way to conduct yourself in life. Education plays an important role in human development along with those that interact with each other with the same purpose, we call this the mesosystem of the individual, which we will explain later in detail in the present study. As part of my experience in the educational field and what to do as a researcher I postulate the following definition of education. Dr. Marcos Colín (2018) "Education is the instrument used by human beings to transmit the knowledge that will allow the individual to develop wisdom in their integration within a society, generating skills that help them face the historical and contemporary challenges of everyday life Trained for participation in the world of work, autonomy of thought and decorum of their moral conduct in order to exercise their freedom." Education will always play the most important role in the formation of human beings, as long as the individual learns and those around him strive to learn from it. Returning to the concept of learning we could postulate two definitions of Jeanne Ellis Ormrod (2005) under two theories of learning, first a behavioral definition and then a cognitivist:

- Learning is a relatively permanent change in behavior as a result of experience.
- Learning is a relatively permanent change in associations or mental representations as a result of experience.

The first definition refers to a change in behavior, an external change that we can observe and reflects the perspective of a

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group of theories known as behaviorism. Behavioral theories focus on the learning of tangible and observable behaviors, called responses, such as tying one's shoes, correctly solving an arithmetic problem or becoming ill so as not to go to school. On the contrary, the second definition focuses on a change in mental representations or associations, an internal change that we cannot see, which reflects the perspective of a group of theories known as cognitivism. Cognitive theories do not focus on behavior but on thought processes (sometimes called mental events) involved in human learning. Through this learning process the internal development becomes external and the external one modifies the internal process through the environment or ecology of the human being. Talking about ecology is different from the environment. The environment does not care who lives there. Ecology says that there are living beings there and the environment is related to them and they are related to that environment. Ecology. It is called like this the science that studies the relationships between living beings and the environment that surrounds them. Environment It is known as a system formed by natural and artificial elements that are interrelated, and that can be modified through human intervention. Now within the development of individuals the stage of adolescence itself is usually a difficult stage, it is a stage full of changes and adaptation in which undoubtedly must increase the presence of all those who are part of education of adolescents with the purpose of being able to guide them or lead them under certain habits that lead them to obtain benefits in their development and learning. The lack of affectivity in childhood is usually a fundamental aspect of adolescent development since it can determine their current behavior and a future in adulthood.

**Human ecology and ecological systems:** Urie Bronfenbrenner (2009), The ecology of human development includes the scientific study of the progressive mutual accommodation between an active, developing human being, and the changing properties of the immediate environments in which the developing person lives, as this process It is affected by the relationships established between these environments, and by the larger contexts in which the environments are included. When considering the development of adolescents, their behavior and learning, Dr. Urie Bronfenbrenner (2009) offers us a theory called Ecological Systems, through which he postulates that the context or environment should be considered, since it can affect direct way the conduction of a favorable result with respect to these three previously written variables (development, behavior, learning). The ecological systems of Bronfenbrenner can be understood in a better way if we position ourselves visually as a set of concentric circles, with the individual in the center. For purposes of research, we will mention in broad terms what each of the systems consist of since in the present work each of them will be addressed.

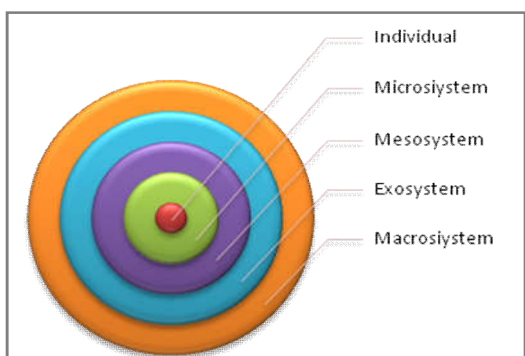


Illustration 1 Bronfenbrenner Ecological Systems



At the end of the semester the results were significant as shown in table 1.1

	Decrease percentage	
	Group A	Group B
Behavior		
Dropout	100%	90%
High failure rate / low academic performance	100%	70%
Behavior problems in the classroom	90%	60%
Low school motivation	100%	60%

**Microsystem:** it makes reference to us in the immediate contexts that are part of the individual, that have direct interaction. Example: parents, siblings, friends, teachers, school environments and extracurricular programs.

**Mesosystem:** the interactions and relationships between the different individuals and configurations found in the microsystem; these do not directly include the child. Example: relationships between parents and teachers, the interrelation between family and work, or social life and school. That is to say, the mesosystem represents the connections and the continuity that can exist in the microsystems of an individual.

**Exosystem:** refers to the contexts that directly influence the child, includes the child in impacting individuals in their microsystems.

**Example:** when a parent's workplace establishes a new schedule and prevents him from reading to children at night, which affects the student's literacy skills. In this case, the workplace is part of the exosystem.

**Macrosystem:** this level consists of political systems, social policy, culture, economic trends and other factors that have a wide influence on the society in which the student lives and whose impact can eventually spill over and affect the student; Cultural practices and belief systems are also part of this level. Example: the Macrosystem is the reform of social assistance, immigration policy and cultural values of a country or region. Finally, a fifth element, not included in illustration 1; but, no less important that I would like to mention.

**Chronosystem:** represents time, both in the individual sense (childhood, adolescence, etc.) and in the historical context.

**DEVELOPING:** The content of this work focuses on an investigation within a campus in the city of Reynosa, Tamaulipas, Center for Industrial Technology and Services Baccalaureate No. 7 "José María Morelos y Pavón", was the educational institution that adopted our plan strategic called Ecological Systems of Dr. Marcos Colín "to solve the problems within the educational institution in question, this strategy is a scientific theory" ecological systems of Urie B. "conditioned to real environments and under the needs of the institution and the social context that is lived in our geographical region. Mr. Alfredo Jaime Rodríguez Rodríguez, director of the educational institution; the C.P. Melva Ventura Martínez Peña, academic assistant director; Lic. Irene Monserrat Torres Rodríguez, Head of the school services department Evening shift; Lic. Carlos Zavala Ramírez, Head of the afternoon shift teaching services department. Authorities of the educational staff who undoubtedly form an integral part of the success of this project, for authorization, resource management, implementation, and internal and external communication. and thanks for the support to the director of the Center for Industrial Technology and Services Baccalaureate No. 220 Mr. *Jorge Luis Saldaña* Echavarría.

## METHODOLOGY

Diagnosis. Taking into account the start of our research, we reviewed the internal statistics of Center for Industrial Technology and Services Baccalaureate No. 7, before the implementation of the strategic program, we obtained that the main problems that the institution faces are the following:

- School desertion
- High failure rates / Low academic performance
- Behavioral problems
- Low school motivation

Taking into account the theory of ecological systems of Bronfenbrenner, we elaborated our strategic plan based on the internal needs of the educational establishment to involve those who are part of the microsystem of the adolescent. It is necessary to involve the teachers who will be part of the success of their students, motivate them and make them see that we are sowing a seed and that in the medium term we will obtain favorable results. The teachers involved in the project are not indifferent to the problems, however, a first problem is that they do not have the training to be able to undertake a possible solution, and only their integration and relationship with the parents is very shallow, so Therefore, the first strategy will be based on the training and integration of teachers.

**Teacher training and integration:** Within our program we have an advantage, which is the knowledge in the institution, of the existence of the aforementioned problems; the relationship between teachers is good, their communication and the search for alternatives is a voice of help and everyone from the director to the last member of the baccalaureate look favorably on the implementation of a strategic plan. The first task is persuasion, to convince each of the teachers to get involved, that if everyone is part of this program, we will certainly succeed, through meetings, they were told about the existing problems, the internal crisis, the increase a gradual increase in more incidents of crime, the failure rate, low academic performance, and that if not addressed in time, would generate a greater problem. Our objective with the

training focuses on the fact that the teachers are the main agents to involve the parents of this project, how they should look for the relationship, transmit the message and the opportunity to take the adolescents, as a whole, to create a favorable learning environment.

### At the end of the training, teachers must have the following skills

Transmit the diagnosis of the current problems of the baccalaureate, the concern of the institution and the solution through the implementation of a program called "Ecological Systems Dr. Marcos Colín" whose objective will be to counteract these problems of behavior and use academic.

- Strengthen communication links between parents and gain their trust.
- Persuade parents how they will participate in the student success of their children.
- Strengthen the bonds between the families of the students and share experiences to generate good expectation and commitment.

**Application of a technology that facilitates communication of the individual's mesosystem:** Returning to the ecological system of the individual we will focus on the mesosystem as this will help us determine the technology that we will apply to solve the good integration and communication of the student's microsystems: family community (parents, relatives, tutors) - educational community (teachers, tutors, managers, school authorities). Because, as we mentioned before, it is one that includes the relationships of two or more environments in which the individual participates actively. Specifically, it refers to the feedback between microsystems described above. In this way, the mesosystem is understood as a system of microsystems that is formed or extended when the person enters a new environment. The main elements that determine the mesosystem are:

**Information flow:** The mesosystem involves a wide flow of information between microsystems. That is, the individual develops the role of communicator between people who are interrelated by himself. For example, a child establishes a certain type of communication with the teacher (microsystem school) and with his parents (microsystem family). The fluctuation of the communications developed in each of the associated microsystems will determine the relationship between these and the development of the individual in each of them.

**Empowerment of behaviors:** The mesosystem presents one of the elements that has a greater capacity to influence the personal development of individuals. This element deals with the empowerment of behaviors. That is, of aspects learned and reinforced in two different microsystems. For example, if a child is taught to eat with his mouth closed at home and at school, this learning will present twice the potential, as it is reinforced by two different microsystems.

**Establishment of moral and social support:** Finally, the mesosystem establishes the degree of social and moral support that a person possesses. Depending on the interrelation and the complementation of the microsystems, an individual will see or will not be satisfied with their support needs.

A subject can present a very good family support but not have friends. Or you can have many friendships but present deficiencies in your family environment. There are students who have problems of motivation or orientation and this can be detected and attended by those who make up the mesosystem. Microsystems in isolation do not have the capacity to establish the social and moral support of an individual since they specify the functioning in a given environment. However, the mesosystem allows analyzing the personal relationships of the subject from an integrating point of view, as well as the motivation that this presents in the classroom or in the home. Once we have made clear our theoretical position, now we need to postulate the implementation of a technology that addresses these needs to be solved, therefore, the selected instrument is through a program - software that helps us integrate and flow of information between school - home.

**The instrument:** The selection of our instrument consisted of designing an application that can be objective in the information, that is, that responds to our needs raised in the investigation. The software is an application of easy access and management, taking into account that at present, it is already common use, in any home there is at least one cell phone, so we will look for the flow of information through this platform. The application is designed so that any parent can download it from the internet and thus be able to monitor the educational process of their child, to observe directly and in real time the behavior of the student. Which allows us the integration of parents to the educational success of their child. The name of our application will be called "SEMC System" and the description of its design, use and general characteristics will be placed in our ANNEX 1. (see annex 1)

**Hypothesis raised:** Human beings reduce a criminal or antisocial incidence while they are observed, therefore, communication between parents and teachers will determine the predisposition of each student to know the good communication between them.

**Example one:** it is easy for the student not to arrive to class, because there is no one to accuse him if he arrived or not to the classroom, however, with our system, the student will know that if he does not arrive to class, his father, in real time, will know who left him or sent him to study and he never came, simply knowing that his father will know immediately, the student will enter a dilemma, which will inhibit the desire to miss his class.

**Example two:** based on the most common problem, the use of social networks in adolescents; when a student does not pay attention to the class because they are using the cell phone; at the end of the class, the teacher sends the message to the parent communicating the situation; When the young man arrives home, he is questioned and, probably, sanctioned by his parents, provoking in this way, that in the subsequent, the student avoids the use of the cell phone in class, and even, shows some other type of indiscipline.

**Involvement of families:** Once we obtained the training of the teachers, the next step is to involve the families of the students, the challenge for the educational authorities will be the convening and persuasion power of the parents. This step, although we think it will be difficult, because of the parents' ability to make a space in their work to attend the training meetings, we believe that outside of this will not reflect a problem of non-acceptance, part of this is that the parents

themselves argued that they were willing. Parents will receive instruction at the same time that adolescents will receive, communication is vital, we all must follow the same line and towards the same goal.

#### Parent training consists of the following specific points

- Positive relationships; creating positive families is to let parents know the kind of environment they want to form with respect to their children, as an attitude can make a difference in their family relationships, a happy child is a happy student and consequently a student with optimal learning skills.
- Take sessions of School for parents; Many parents expressed their interest in their children, however, they recognized their inability to solve various problems they faced with their children, which is why we decided to integrate them into the training. Know the various changes that a teen goes through and how to help them, guide them in their development.
- Attention and channeling of social problems (divorce in family, addiction, abuse ...); within the problems included some that will not be in our scope to address them directly, so they will be channeled with the authorities or persons concerned, we are clear about our limitations, but not our reach through other instances of government or non-governmental organizations. governmental.
- Family participation: they will be instructed in at least 3 areas of participation with their children to generate a favorable learning environment, which will be; participation in extracurricular activities, participation in school, and effective communication.
- Participation in extracurricular activities; parents should generate an expectation in their children, that they see that their parents have become agents of change, concerned about them, helping them to their ability to establish schedules, activities outside the classroom (for example, cooperating in the elaboration of their tasks, it was important to mark not doing it for them only to provide them with the necessary tools, take them to a library, museum, workshop, etc., assigning cooperative roles in the home such as picking up trash, their bedroom, something that would allow them to develop the value of responsibility), follow up on some specific instruction from the teacher to regularize undesirable behavior.
- Participation in the school; parents should know that participation in the school is not only to carry lunch, at official meetings or appear in the grades, participation in the school assumes a responsibility for coordination between school, teacher, parent, the way to operate it will be, in having a visit to the classroom and through the teacher to know the academic performance of your child, to follow some direct instruction by the teacher, as well as in school events, this has as purpose to prevent all conatus of undesirable behaviors or school performances Low, the least observed adolescents feel, the greater probability of bad behavior or low academic performance usually have, while if they feel watched, undesirable behaviors are considerably reduced.
- Effective communication; The points described above are part of a line of communication between parents, teachers, managers of the institution, which allows prevent, rectify, solve problems. On the other hand,



communication between parents, the exchange of experiences would help the motivation of other parents for their integration into family participation.

- Use of the electronic application. And the recommended actions to reduce the incidence of crime or low academic performance. Once the parent receives notification of the performance of their child throughout their class, you should consult our guide of action plans that seek to extinguish undesirable behavior.

**Moral education for students:** Our main work will focus on the individual, in this case the adolescents of CBTis 7, to achieve the success of our program it will be advisable to operate directly on the morality of the students, change an undesirable behavior, so we designed a teaching program that will address the following topics:

- Conduct
- Character
- Values
- Reasoning
- Emotions
- Spirituality

Through our strategy we seek to persuade them to build their future, the importance of education, the benefits of studying, training, living a life with decorum, respect and values. It will also serve as an example to present cases of other people who did not have the opportunity to study and the deficiencies in which they currently live, to mention the path that they would like to take. Through coordinated sessions the teachers will give their space for the visit of government agencies and civil society for the induction of these topics.

**Impacting society in general:** Finally, through the application of a strategic plan based on a theory applied in different cities such as Boston, Usa. We know that it is a plan that in itself generates optimal results, the challenges of the researcher, school, parents will undoubtedly be the good coordination and training that this program demands. It is worth mentioning that it will be a pioneering program, with a scientific methodology, measurable in the registry of its results, that if favorable in real terms, would be the starting point for the application of a pioneering program in the state of Tamaulipas that goes through situations of difficulty due to the wave of violence that is experienced in our city of application, will be a light in the shadows for the education and training of individuals who are part of a society. Given the possible results, society in general can be involved and invite other institutions to implement a program such as ours.

**Pilot Application**

For the application of our strategic program, we selected two groups in the afternoon shift with problems similar to those written in this study, in group A the implementation of the program was carried out, in group B it was left to carry its traditional method. At the end of the semester the results were significant as shown in table 1.1:

**Conclusion**

The research is based on addressing the causes systematically, based on the theory of ecological systems based on a program appropriate to the needs of the institution, we can focus on

environmental areas that allow the development of the individual and how when they are served time the risk of some problem is diminished, as well as in corrective actions. It consequently influences in the changes, development of cognitive, moral and rational abilities. Through family participation we see how it is strongly linked to the academic success of students, and when fundamental aspects such as effective communication, training, the integration of society, government or others are complied with, contribute to the good development of the individual.

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Figure 1.

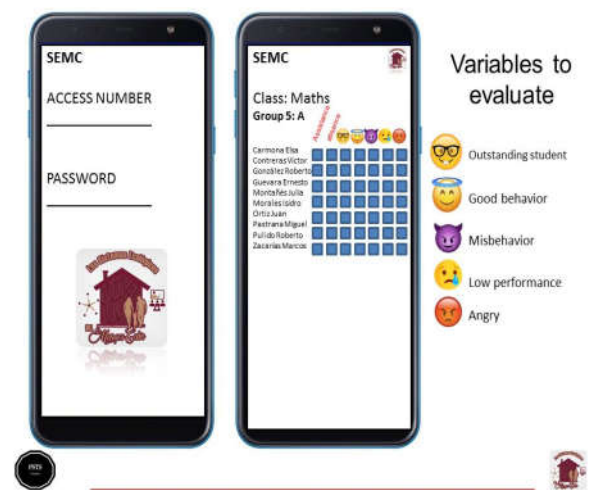
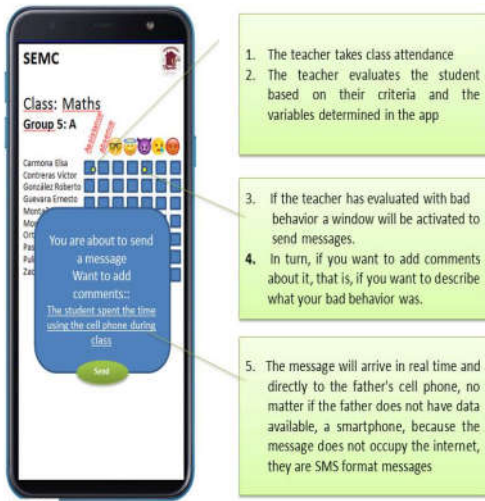
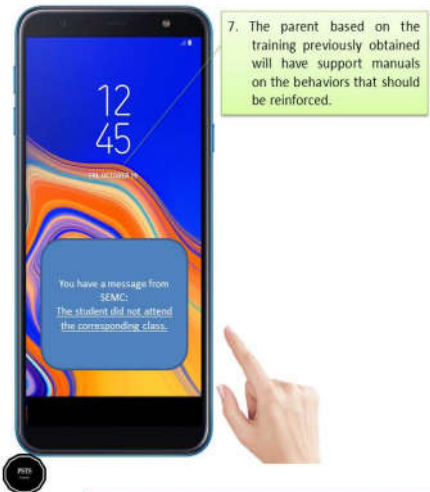


Figure 02.



1. The teacher takes class attendance
2. The teacher evaluates the student based on their criteria and the variables determined in the app
3. If the teacher has evaluated with bad behavior a window will be activated to send messages.
4. In turn, if you want to add comments about it, that is, if you want to describe what your bad behavior was.
5. The message will arrive in real time and directly to the father's cell phone, no matter if the father does not have data available, a smartphone, because the message does not occupy the internet, they are SMS format messages

Figure 03.



7. The parent based on the training previously obtained will have support manuals on the behaviors that should be reinforced.

Parents

Figure 06.

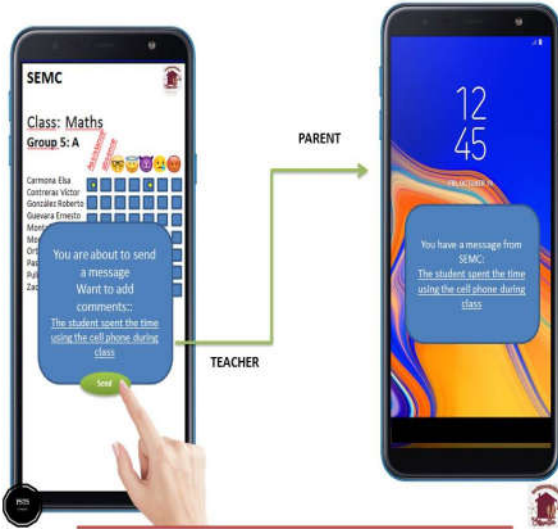


Figure 04.



Figure 07.

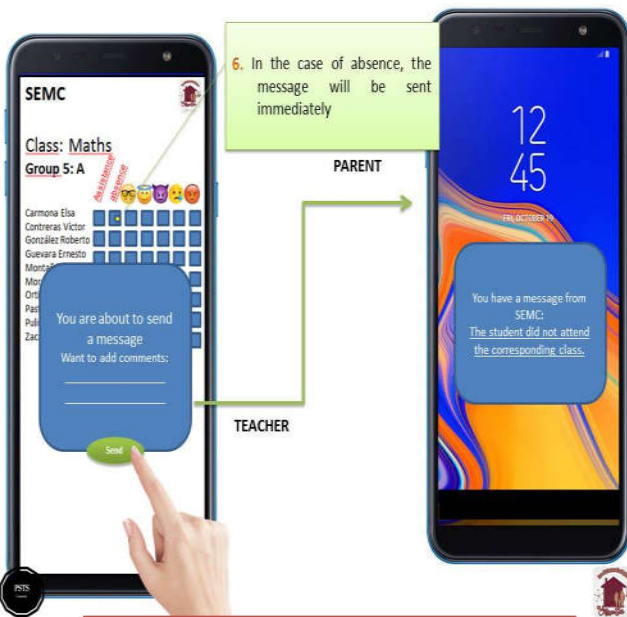


Figure 05.



Figure 08.

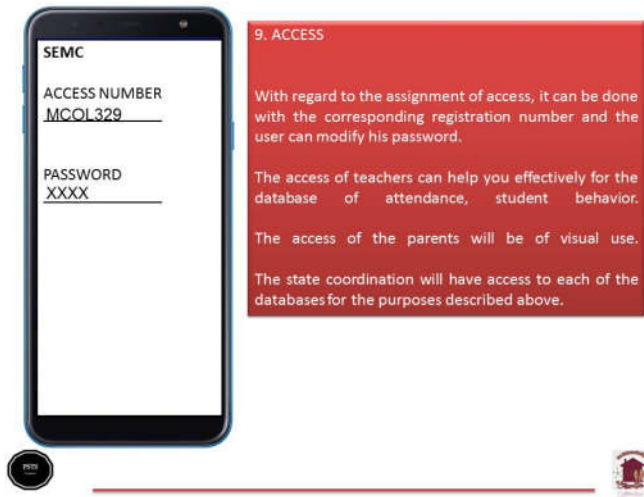


Figure 10.



Ecological Systems of Dr. Marcos Colín

Figure 11.

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