Особенности познавательной деятельности современных детей, подростков и молодежи в контексте проблем образования

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Article

Triggering emotions as a tool to increase involvement of students and foster learning and development*

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Abstract
Introduction. We are often faced with students who do not apply what they learn at university in their practice. Our team worked on a teaching design in order to use emotions as cornerstone of students' involvement in their studies and, most importantly, in the investment of the acquired knowledge in their praxis. Although they play fundamental role in human development, emotions are seldom used as a starting point in education.
Material and Methods. The research led us to conceive a training method based on pictures to provoke emotions. In turn, these emotions trigger a response from students, leading them to be eager to learn, persevere and try to implement new knowledge in their field of activity. We present parts of our theoretical framework that underpin our training method. We describe some challenges that we faced during its implementation. Finally, we give an example of using this method in a classroom of agricultural trainers. We applied our method to the training of farmers about the ways to counter the effects of climate change.
Results. The trainers reacted strongly to the pictures and showed high involvement in the workshop. After applying these methods in teaching farmers, they reported a higher motivation and willingness of farmers to implement new knowledge.
Conclusion. The emotions triggered by pictures seem to be able to form the cornerstone of an effective approach to teaching and learning. This method holds promise for the practical application of knowledge gained in the classroom. It may also drive long-lasting changes in the students' approach to teaching. This calls for more research on the possible use of emotions and art to foster learning at different levels of schooling.

Keywords: emotions, triggering emotions, learning, learning effectiveness, methods of improving the effectiveness of learning

* This paper is a slightly adapted version from a keynote presentation at Herzen University Conference on Psychology in Education 2022, therefore, it does not totally follow the traditional standards of scientific writing.

Научная статья

Активация эмоций как инструмент повышения вовлеченности учащихся и содействия обучению и развитию

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Аннотация

Введение. Мы часто сталкиваемся со студентами, которые не применяют на практике знания, полученные в университете. Наша команда работала над дизайном обучения, чтобы использовать эмоции в качестве краеугольного камня вовлеченности студентов в учебу и, самое главное, в использование полученных знаний в практической деятельности. Хотя эмоции играют фундаментальную роль в развитии человека, они довольно редко используются в качестве отправной точки в образовании.

Материалы и методы. Исследование привело нас к разработке метода обучения, основанного на картинках, вызывающих эмоции. В свою очередь, эти эмоции вызывают ответную реакцию у студентов, побуждая их стремиться учиться, проявлять настойчивость и пытаться внедрять знания в своей сфере деятельности. Мы представляем фрагменты нашей теоретической базы, которые подводят нас к разработке метода обучения. Мы описываем некоторые проблемы, с которыми столкнулись при попытке реализации нашего метода. Наконец, приводим пример нашей работы по обучению инструкторов в области сельского хозяйства этому новому методу. Мы применили наш метод для обучения фермеров способам противодействия последствиям изменения климата.

Результаты. Инструкторы бурно отреагировали на фотографии и проявили высокую вовлеченность в семинар. После применения этих методов в работе с фермерами они сообщили о более высокой мотивации и высокой эффективности внедрения метода, отмеченной фермерами.

Заключение. Эмоции, вызываемые картинками, по-видимому, способны стать краеугольным камнем нового подхода к преподаванию, способствующего повышению качества усвоения знаний. Этот метод обучения также обладает потенциалом для содействия применению на практике и долгосрочным изменениям в подходе студентов. Требуется проведение дополнительных исследований о возможном использовании эмоций и искусства для содействия обучению и развитию на различных уровнях школьного образования.

Ключевые слова: эмоции, активация эмоций, обучение, эффективность обучения, методы повышения эффективности обучения

Introduction

It is obvious to any observer that our emotions are being triggered constantly, whether it is by information media, social media or marketing. These emotions are purposefully triggered in order to make us pay attention, mobilize our resources, adhere to an opinion, watch content, and, obviously, buy products and services. The informational and commercial businesses have very well studied our behavior and can make us think in a certain way and engage in an activity based on our emotions. One could state that, to a certain extent, we all are victims of our own feelings which bring us to act where and when we might have not if we had been receiving the same inputs without emotions. More and more, politicians have used emotions to get their message through and to make us feel like voting for them

or adhere to their views. As adults, we are expected to make rational choices. However, it has been widely proven that our decision-making process happens prior to our awareness of this process. It has also been clearly stated that emotions, among which the emotional link to the subject or the teacher, are foremost in the child's involvement in learning and, in general, in the child's development. It seems odd that we seldom encounter teaching methods that take into account the feelings of students. It might be because we think it is the opposite of good teaching, the opposite of rationality.

More recent studies tend to show otherwise: emotions are not only the trigger of most of our involvement, but also play a large role in our reasoning process itself.

The main aim of our research has since then been: how could we use emotions during teaching to provoke reasoning, to get a continuous involvement of students? Can we bring our students to build a pertinent theoretical reasoning on their emotions to implement actions and increase their involvement in an activity?

We know, more or less, what we teach — more or less, because there is always a hidden curriculum —, and we are very aware of what we want students to understand, of which skills we want them to deploy in real life. But we are faced with the facts: students, while they pretend that they understand what we teach, do not apply this knowledge in real life, neither do they use the full potential of what has been taught in their field of practice. This seems to be true for most training or theoretical teaching whether at a university level or beyond. The evidence is well-documented in teacher training and other fields of professional training. It seems to us that something is missing to favor the practical implementation of knowledge.

Our question then becomes: could we use emotions to bridge the gap between theory and practice? We all know that theory is beautiful, but practice is something different, at least that is what students, or recently graduated professionals, tell us. For quite a few years now we have been trying to answer the following questions: How to use emotions to trigger learning? How to use emotions to implement actions and increase involvement in the activity? How to use emotions to bridge the gap between theory and practice? And, as far as tools are concerned: Can pictures trigger enough emotions to foster learning?

Theoretical framework

In such a vast context, we based our research on theoretical background, ranging from fundamentals about emotions (Dewey 1894; 1895; James 1884; James, Lange 1922; Vygotski 1998; 2003), to the importance of dynamic regulations (Buysse 2015; Iran-Nejad, Chissom 1992; Iran-Nejad, Zengaro 2013), elements of the activity theory (Leont'ev 1978) and neurology (Damasio 2005; Eich et al. 2000; Frijda 2003; Koenig 2003), including the direct links between the neocortex and the limbic system.

Let us just insist on the link between emotions and our ability to reason. For a long time, we were told that our brain was constructed by layers of different systems that would hardly connect to each other. The general idea was that the systems were separated and sort of built on each other. However, more recently, it has become clear that, from the neurobiological point of view, the neural circuits that underpin the functioning of emotions seem not only to be located in the limbic system but also in other parts of the prefrontal cortex, as well as in the regions of the brain where signals from the body are integrated (Houdé 2003).

It is good to remember that emotions are, fundamentally, a signal linked to the perception of a physiological change or to the perception of an internal cognitive state. These signals help us survive. They either provoke an immediate reaction or get processed and result in feelings and thought over actions to try to suppress the signal. That explains why emotions are at the origin of adaptive processes, learning and psychological development as a whole.

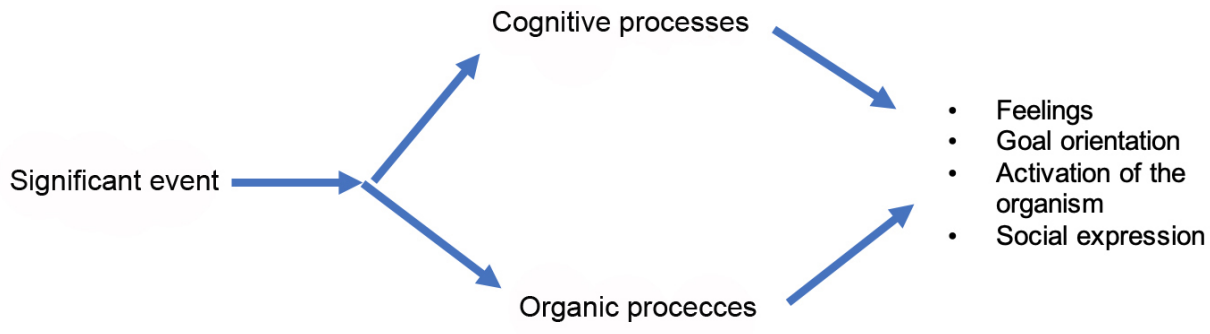

Fig. 1. Origin of emotions and feelings (adapted from (Reeve 2012))

Emotions, however, retain their quality of warning that can produce unexpected effects: they are, among other things, the expression of a deviation of a personal norm. We should remember that they are a high priority warning linked to 1) a physiological effect (a rush of adrenaline, the tension of muscles, the wish to run) as an immediate physical response to facilitate survival or, at least, 2) intensity (physical pain, tears, sweat) to ensure that we are aware of the existence of a challenge. When trying to mobilize emotions in teaching, we should not forget that they are meant to be the highest level of arousal and surpass any purely cognitive message. When we use emotions we signal the need for change, the need to learn and to engage in an activity, but it might come with side effects that are difficult to manage if we are not able to help solve the problem. Emotions are strong enough "to bind us and to blind us". Here, I am talking, for instance, about the first moments of a love affair or a very strong involvement in the social networks — but can we use emotions to open up our students' minds, to make them aware of the need to change?

1. Learning and emotions

There are extensive studies on the link between emotions, feelings, and learning as well as self-regulated learning (Boekaerts 1999; Li, Lerner 2013; Mega et al. 2014; Schunk, Zimmerman 2008; Suzic et al. 2013). Nevertheless, when we started analyzing the mobilization of emotions in the learning processes and not only around the notion of motivation, we started to encounter challenges. Indeed, the learning context is very often strict and not really adapted to the expression of emotions, nor to the use of emotions. Usually, teachers tend to bring students to distance themselves from their experience or to apply only formal logic. We also encountered some challenges linked to the fact that emotions also trigger fundamental, almost physiological, reactions. If we unwillingly used situations that engendered negative feelings or emotions that signaled danger, how would the students react? Would they pretend to be dead, run away or would there be a positive response — a fight to acquire knowledge?

We also found out that students are getting used to short reward circuits. This means that they seem to have a hard time enduring a long-lasting emotion without developing long-lasting negative feelings. They want a result, a reward, almost at once. When learning is involved, they tend to ask for solutions, for answers, instead of trying to solve the problems on their own, because it is faster. If we do not yield, they might develop negative feelings towards the subject matter and towards the learning process, which would further impair learning.

Then, we also had to take into account the status of error. We all know that if you have a positive status of error, meaning that your errors are seen as a possibility of progress, it enables you to study longer, to study better, and not to be afraid to make mistakes by trying. However, the status of error in our school system tends to be negative — even if the teacher does not stigmatize failures, the errors will eventually show in reports and grades. This, in turn, engenders a fear of failing.

Of course, there is always a possibility for someone to persevere thanks to coping and resilience. However, in our schooling system we do not spend much time on teaching coping strategies. How do you cope with emotions as a student? How do you cope with all that can happen while you are learning? Or fail to learn? What is the value of effort and perseverance, of coping with your own feelings?

Moreover, any action during teaching, if significant, will be considered an event. And a significant event provokes a cognitive process and an organic process that both (taken together) allow for feelings, i. e., cognitively processed emotions, goal orientation, activation of the organism and social expression as a result (Reeve 2012).

Using emotions is a complex issue. While your are teaching, you have to be aware of the interconnection of emotions, orientation of the activity, possible reactions of students, socially acceptable expressions of feelings. On top of it, you have to decide which significant event you are going to use to trigger the students into learning, because it can really unfold in several directions.

Significant events produce emotions. Emotions, in turn, engender:

1) feelings, once the emotions are perceived and processed cognitively (also influenced by goal orientation and the immediate response of the organism). Feelings influence the subjectiveness of the experience, awareness and cognition;
2) goal orientation (also influenced by feelings and the social expression) which includes the adaptation of the objective; a motivational state in relation to the objective; planning of actions;
3) activation of the organism (also influenced by the social expression and feelings), that will trigger motor functions; readiness for action; physiological activation (inducing non-verbal communication);
4) social expression (also influenced by the activation of the organism and goal orientation) that includes social communication

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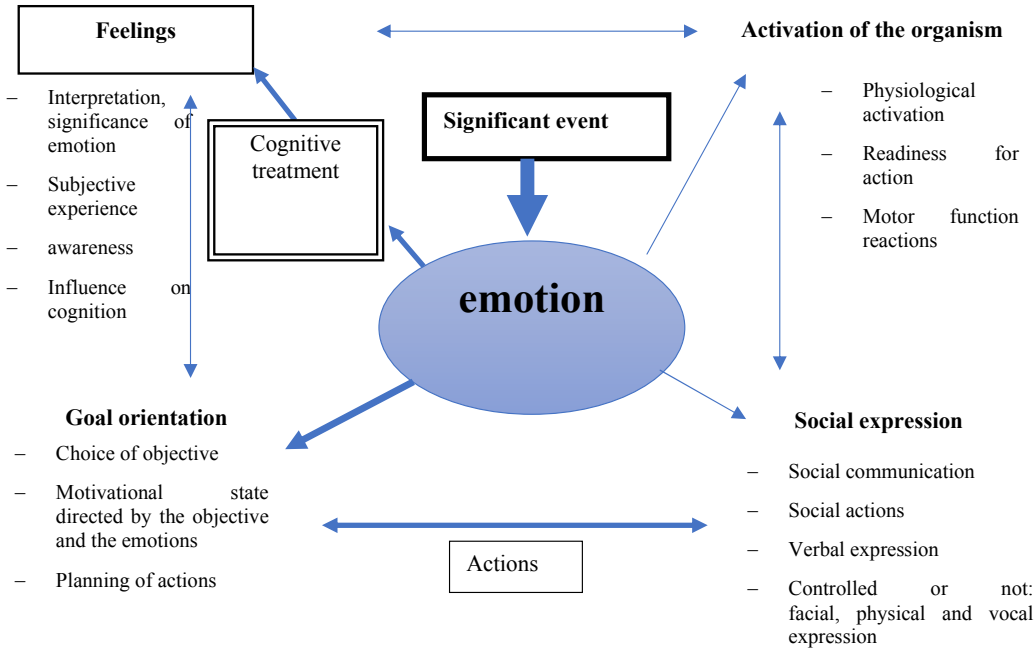

Fig. 2. Significant event and emotion (adapted from (Reeve 2012))

(willingly or not) under the form of social actions, non-verbal expression, and verbal expression.

How was all this going to play out in the classroom or in the training facility? Is it also something we should be aware of before introducing emotions as a cornerstone of the learning process?

2. Hypothesis

Our postulate was that actions in an activity will always engender a certain level of emotions. On top of that, the activity can also have an influence on feelings, i. e., on the identification of emotions and their verbalization. If the required actions are carefully planned, they could have an influence on the way emotions are taken into account and develop into feelings that influence reasoning and further actions that will be taken.

We also took into consideration that, unlike during formal learning, a lot of our decisions are not rational. This effect is very powerful when studying a theoretical passage through practical activity, for instance, with farmers or teachers. You notice that the person's irrational side can suddenly take the lead over their rational side.

So, our main postulates were that a certain design of activity could influence:

- identification of emotions and verbalization
- taking emotions into account while reasoning
- taking into account human rationality or irrationality
- tolerance to different point of views
- emotional coping and perseverance

We also aimed to show that all these elements taken together would help change practice.

From there, we tried to develop a method of training based on an emotional trigger. Our hypothesis was that pictures of real events, presumably linked to the students' core activity and illustrating consequences of a lack of agency, would provoke an urgency to act if the training sequence put them in a position of agency.

3. The use of emotions to change practice: A case study

In order to illustrate our work, we will briefly describe a training method we developed in 2019 when we cooperated with Universidad de Ciego de Avila in Cuba. Our common aim was to find new ways to make farmers aware of how to cope with climate change and make sure they would implement new practices. We were asked to conduct a workshop for trainers, mostly graduates from the University, who were tasked with organizing workshops and conferences for farmers in order to have them change their practices*.

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3.1. Context

Most of us do not realize that in Cuba climate change has enormous effects on agricultural production: severe droughts, underwater reserves contaminated by saline water, changing average temperatures that alter growth patterns. The negative impact appears in certain areas only and not in all of them simultaneously. The urgency is that farmers should adapt before the changes happen to their land. They have to completely change their patterns before the land is affected. However, farmers, in general, are hard to convince to change their practices. Our colleagues in Cuba made us aware of the training methods the farmers were expecting: top-down transmission where they are being told what they should do. They are also used to the fact the all the necessary means are provided by the state. Alas, the lasting embargo makes it hard for them to get the necessary means and once they return to their fields, they do not necessarily do what they have been told. This is, of course, common to most professional training: habits prevail over new methods.

Some farmers also seem to have developed a very passive attitude towards climate change that could be described as: "I know nature; I'm a farmer; weather always changes; you cannot trust people who are not farmers; we will cope; nature is nature and we just follow it". So, they are not willing to anticipate radical climate changes ahead that call for a structural change in their habits, and they absolutely lack agency. They do not try to do anything to live and work in a better environment. There is also a little clash here because they still follow certain ideas of communism, where the farmers are used to being told what to do and to get everything to do what they have been told to do. So, if they are told to use more chemicals on their fields, they wait till these are delivered, because it is the responsibility of the state. But the current situation is new. It is a climate change. At the same time, Cuba is more and more deprived of the means to provide their farmers with all what they need. Policy changes are trying to bring farmers to a certain level of autonomy in their production. The farmers, however, are not used to it at all: a lack of material input, climate change and policy change require them to be autonomous, while they are not trained to act that way.

To help change this, we were asked to propose a training method to the trainers who are actually teaching the farmers. We decided to act with the trainers — who are very connected or involved in agricultural practices — the same way we would with farmers if we were to train them directly. This way the trainers would experience the effect of the training method firsthand. Of course, we were going to explain each step afterwards and provide some theory as well.

3.2. Our training method

To experiment with the new training method, we decided to use pictures. We wanted to know if pictures could trigger enough emotions to get students to engage deeply in the learning process. This would lead to the acquisition of solutions through reflexivity, encourage agency and a strong willingness to implement the solutions in real-life activities.

The idea was to allow emotions provoked by pictures as a primary trigger to motivate the farmers to find a solution on their own. This involves problem solving and creativity and ensures that, being professionals, they will know how they can apply these solutions in their own estates. This, in turn, would encourage agency and an enduring feeling of empowerment.

We asked the trainers to join a role play and assume the role of farmers. To this end, we asked them to talk about their personal or their family's farming experience or some farming practices they had encountered touring the countryside. This brought back memories about the challenges of farming. This was followed by a logical situation where trainers were put in the same situation as a farmer with a certain plot of land and cattle to raise (if they wanted, they could also choose crops). It was assumed that during training the students would act as experts in their field.

This was followed by the introduction of a training procedure that we recommended them to use in training real farmers they would soon meet:

1) show pictures: real catastrophic events related to weather and climate change, e. g., cracked earth with withering crops due to draught; almost dried up rivers with starving cows trying to lap the last drops of water from the river stones; starved to death cows on a dried-up pasture, etc.*;
2) let them comment (subjective);
3) have each (individual or team) choose the picture that moves them the most (subjective);
4) talk about what they feel looking at the picture (subjective);

* These pictures were mostly chosen from pictures provided by the University and related to draughts in other parts of Cuba or South America, since it was important for them to be able to relate to the geographical and climatological context.

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5) talk about the possible reasons leading to this result with, if appropriate, input from the expert (objectivation);
6) express their reality linked to these feelings, express their challenges (subjective);
7) provide pencils and paper and ask them to reflect alone about possible solutions for their land;
8) after some time ask them to form teams (three to five individuals) and work on possible solutions for their land;
9) discuss their first drafts of solutions (externalization-objectivation);
10) provide concepts possibly related to the solutions and theoretical information about the causes, without providing the practical solutions themselves (objectivation);
11) hand out construction blocks (Lego or other) to be able to manipulate concrete material (externalization);
12) have them work in teams to propose practical solutions adapted to their land and create an illustration of their solutions using the concrete material provided (usually a new design for their land and production areas, tree plantations, water reserve, etc.);
13) present and debate their solutions with inputs from the specialists (objectivation);
14) show pictures of positive outcomes related to the implemented solution (reinforcement);
15) have them plan an implementation and chose a picture of what they want to achieve and a picture of what could happen if they do not put the solutions into practice (transfer to practice).

As described hereabove, the first thing you have to do is to let the 'learner' choose what moves them the most. That already puts them in a position of agency, even if it is minimal. In this case, being used to traditional teaching, they were surprised and quite delighted to have a choice and to get to talk about how they feel, which they are not usually supposed to do, either. In this particular case, when they saw the pictures, a lot of them were very emotional, although they are very aware of the subject and were the ones who were supposed to train the farmers about this. That is because we intervened in an area of Cuba that had not experienced drought dramatically yet. So, when they saw what awaited them, they realized what it was really about and how it could affect their animals or their fields.

Then they had time to try to find a solution on their own. After that, we made them talk together to try to find a solution. This was followed by providing the concepts. Of course, in this particular case, we were not specialists in agriculture, but we used advanced knowledge from other university colleagues to provide them with the concepts and the theoretical information to be able to deal with the problems they could encounter. But under no circumstance would we give them a practical solution. After that, the trainers worked in teams to create solutions adapted to their situation. Then, they presented and discussed their solutions. At this point we showed them pictures of positive outcomes or asked them to draw positive outcomes. In other words, what will they achieve if they do what they have invented as a solution? What is a possible result? We had prepared pictures of successful farming in difficult weather conditions, showing, for instance, the difference between a well-organized farm land with a water reserve and trees and one with traditional intensive farming without a pond or any shade provided by vegetal cover.

Thus, our key idea was to use image-induced negative emotions to provoke the subjectivation of the need to act. They had an image of what could happen if they failed to act. Then, they had to externalize that emotion, enabling the start of a reflexive problem-solving process. To support this, we provided very concrete tools in the form of building blocks, since abstract problem solving is not the most common approach for farmers. Finally, we used positive images of possible results to allow for an association between the concepts they used, the methods they developed, and the positive emotion that could result from it.

Results

We recorded two types of results. First, those obtained during the workshop; second, following the implementation of the method by the trainers when working with farmers.

We noticed a strong involvement of the attendees. Obviously, it was due to the emotions and feelings they had. During the workshops, emotion seemed to have been central to the thinking process and gave way to structured reasoning instead of the blocking formal reasoning. Even the trainers were proud of the solutions they found. From follow-ups we can affirm that the trainers used this method themselves in their workshops with farmers. From their reports four months later, the method proved to have positive results and created a strong involvement of farmers who seemed to be on the way to implement it. Some of the people we trained had other involvements in the communities. They successfully used the method in other situations requiring social action.

We had the following feedback from four workshops by the trainers who used our method:

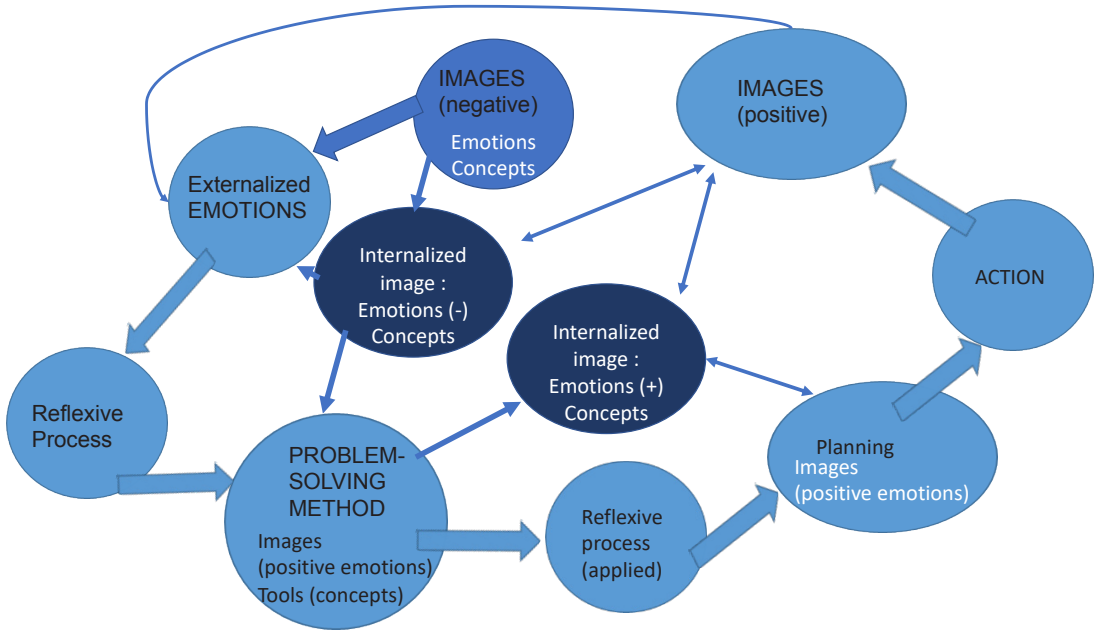

Fig. 3. Processes involved in teaching with the use of emotional triggers induced by pictures

— involvement induced by emotions;
— emotions became central to the thinking process;
— farmers or other trainees felt empowered;
— they had a feeling they had found solutions themselves;
— they seemed to be eager to implement these solutions although they had rejected them in the past when they were presented by engineers;
— they believed they would be able to have control over the situations which they did not seem to have before.

Another article reporting on the effectiveness of our method will describe how one of the trainers used the method to develop a sense of agency in a community that was plagued by teenage misbehavior. The community successfully developed activities to influence the misdemeanor of the youth. The method involves the people and brings them to change their practices.

Conclusions

We could conclude that emotions can really be generated by images. Of course, if they are chosen by the students and become the central point of deliberation of thoughts, the emotions can be recalled, opposed to the new ones and become a central point of the gratification of the action. And obviously, from the reports we have, the internalization of the images increases the urge and the recall, hence, the change in activity and the duration of this change.

According to us, it is feasible to design a twofold double stimulation in order to scaffold changes in activity:

1) negative emotional trigger;
2) awareness and definition of the problem;
3) tools and reflexivity;
4) negative emotional recall and trigger of positive emotions.

That could lead to taking into account different principles that are often neglected like the power of art in education, the need to direct teaching towards developing a feeling of agency in our students based on a contact with their emotions.

To conclude, we think our research shows that there is a place for emotions and for art, as a support for emotions, in our teaching system. Emotions also help to build a feeling of agency in students. I have to say that presently I am still working on the power of art. The reason is that we can heal with art, we can heal with emotions, and we see no reason why art and emotions find such a limited application in our schooling systems.

Conflict of Interest

The author declares that there is no conflict of interest, either existing or potential.

Ethics Approval

The author declares that the study complies with all ethical principles applicable to human and animal research.

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