

Experience on the use of activities for personal development and hard sciences in higher education students

Experiencia sobre el empleo de actividades para el desarrollo personal y ciencias duras, en los estudiantes de educación superior

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Abstract

Objective: To carry out activities called "awakening" in which students are intended to make students aware of their thoughts and their emotions derived from them to make decisions more assertively and not only by imitation or by mere automation. Methodology: They were provided with life reflections in the first 15 days of class for no more than 15 minutes at a time and later, a WhatsApp group was formed with volunteer students, in which they received small reflections and a daily exercise, for 21 days to realize their thoughts and control them for the benefit of their peace and tranquility. Contribution: As a result, more than 70% of both groups considered these activities to be beneficial and useful for their lives. Subsequently, more than 50% of both groups continued in mental diet activity receiving messages and a small exercise, daily for 21 days. In the classroom, there was better at-the-way behavior between them and the teacher during class development compared to previous semesters where this activity was not present.

Resumen

Objetivo: Realizar actividades denominadas "despertar" en las que se pretende hacer a los alumnos conscientes de sus pensamientos y sus emociones derivadas de estos para que tomaran decisiones de manera más asertiva y no solo por imitación o por mera automatización. Metodología: Se les proporcionaron reflexiones de vida en los primeros 15 días de clase durante no más de 15 minutos por vez y posteriormente, se conformó un grupo de WhatsApp con alumnos voluntarios, en el recibieron pequeñas reflexiones y un ejercicio diario, durante 21 días para percatarse de sus pensamientos y los controlaran en beneficio de su paz y tranquilidad. Contribución: Como resultado más del 70% de ambos grupos consideró estas actividades como benéficas y útiles para sus vidas. Posteriormente, más del 50% de ambos grupos continuaron en la actividad de dieta mental recibiendo mensajes y un pequeño ejercicio, diariamente durante 21 días. En aula se tuvo una mejor conducta actitudinal entre ellos y con el maestro durante el desarrollo de las clases comparado con semestres anteriores donde esta actividad no se encontraba presente.

Mental diet, Personal development, Emotions

Dieta mental, Desarrollo personal, Emociones

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Introduction

Society changes, the political, social, commercial system is transformed and current needs require that education also move, evolve and change, this implies having other effective tools that allow strengthening the teaching-learning process.

In my experience as a science teacher of the hard calls, I have noticed how students study and "learn" without learning. They mechanize, memorize, pass the course but there is no meaningful learning. I have noticed that although the students actually attend and enroll in an educational program to be an engineer, lawyer, doctor, among others, not all have the intention of "learning", some attend and pass the subjects but do not learn, nor do they can apply the knowledge.

Throughout history it has been observed that the fundamental element in the development of humanity is education. The behavioral school limits the student to unintentional "comply". Learners need to think on their own, hence teachers must wake them up from their lethargy, so that they realize that they are thinking beings, with dreams and thoughts of their own.

Guichot (2006), affirms that, unlike in the 19th and first half of the 20th centuries, at present, the history of education is written in a global way, a new meaning is given to the global / local and is not limited only to "think globally and act locally" and the double pair is proposed: "think global / act local and think local / act global" (Morin *et al.*, 2003).

In modernity, the human being is increasingly moving away from nature, but that modernity even distances the individual from his basic primary being, such as dreams and needs. Suddenly individuals are immersed in meeting the expectations of others, doing, feeling or thinking in relation to the people around them, therefore, they forget about them. Later, there are thoughts that haunt the minds, that bother, because inside they do not agree with all that they do and as a result stress, anxiety and illness occur.

Guichot (2006) explains that Freire, one of the most transcendent pedagogues of our time, justifies education as a process that occurs because of man's need to continue growing as a person. In this sense, one should not lose the perspective that in the classrooms not only is taught in a disciplinary way, people are also trained. Therefore, the development of human values must be encouraged, such as responsibility, discipline, respect, among others. At the same time, encourage the development of autonomy and include activities so that students discover that they are thinking individuals capable of interacting with their environment, their conditions and their own contexts. The role of teachers is to generate meaningful learning, understood as "learning with understanding, with meaning, with transfer capacity, which starts from previous knowledge and allows the construction of new ones, in addition to the predisposition to learn (Moreira, 2012).

In addition, it is important that teachers support the student to achieve self-knowledge and self-regulation, where motivation allows the subject to recognize which factors they can have control over and which they cannot, which facilitates learning. And for this to happen, students have to be convinced that they want to study because it suits them, because they like it and because they want to be agents of change. Not because they were told that way, because that is what a professional does or because it should be that way for people their age. Teachers can encourage them to fall in love with what they do and become passionate about what they do and motivate.

Education is a means of transmission of social rules, all this makes up the culture of the society to which these individuals belong. Education evolves with history and this evolution gives rise to new ways of relating, not only between individuals, but also with oneself and with everything that surrounds it, animate and inanimate.

Previously, almost until the middle of the last century, researchers assumed that a large part of human actions were caused by physiological, biological or hereditary factors. It is not until the 1960s that psychologists began to study more frequently the impact of the environment on the character of people, and it began to be verified that this has even more effect on people than heredity itself.

At the end of the eighties, educational psychology emerged, whose task is to study and define the field of study of the teaching-learning process and the relationship that exists between psychology and education. Today's educational psychology began with the efforts of physicians, psychologists, and teachers who were interested in how they could promote better learning in the classroom, what strategies worked best, and how humans learned.

Howard Gardner, an American psychologist broke the classic paradigms of the beginning of the last century, which only contemplated logical-mathematical and verbal intelligence, measured in the tests of C.I. (Intelligence quotient). This psychologist broke into the eighties, stating that the human being does not have a single intelligence, but has a set of these and that they are useful to solve problems. The intelligences contemplated by Gardner are: spatial / visual, musical, kinesthetic, interpersonal, intrapersonal, linguistic, logical-mathematical and naturalistic. They can all develop and express themselves creatively. Teachers based on multiple intelligences can make students aware so that they contribute with their own creations and stop making copies of what they learned in the classrooms, that they begin with their transformation by becoming responsible and being active. In addition to focusing on solving problems and finding solutions, on making changes that lead them to develop their thinking skills, that allow them to make their personal wishes and needs come true, always betting on their creativity.

Due to the aforementioned, it is necessary for teachers to guide the student to develop intellectual and socio-affective capacities that allow him to become aware of himself and be able to work with others. Therefore, the role of teachers has been transformed by requiring that they make use of pedagogical and humanistic strategies that support them so that students acquire efficient, comprehensive and effective learning. Learning as a process should focus not only on the development of cognitive skills, but it is also necessary to include socio-affective skills, all with the aim that students can "learn to learn" and self-regulate their learning (Crispin *et al.*, 2011, Fernández Berrocal and Ruiz, 2008)

Another concept comes into play in these times, Emotional Intelligence (EI), which implies using two key emotional competencies: The first is the individual's ability to recognize their own and other people's emotions; while the second is the ability of human beings to use information to resolve conflicts and improve interactions with other people (Goleman, 1996). Therefore, if the student obtains socio-emotional competencies, she will be able to broaden her horizons and experiences, will be motivated and encouraged to find her own way of learning and developing her university career.

The objective of this work was to qualitatively analyze the impact of personal development activities (short talks on personal reflection and mental diet) offered to first-semester students who are taking the Biomathematics subject taught in the undergraduate of Biology, of the University Center of Biological and Agricultural Sciences, of the University of Guadalajara, during the 2019A and 2019B school cycles

Developing

Two actions were developed in class during the teaching of the Biomathematics subject, for students of the first semester of the Biology career at the University of Guadalajara, during the 2019A and 2019 B school cycles. One was short talks of personal reflection directed towards the students. thoughts and their effects. The second action consisted in offering students extra-class support related to what was called "mental diet", consisting of a series of short writings, which included an exercise for each day, in order to reinforce the content of the writings and they can discover the best of them. With the purpose of getting the information to the interested parties and due to the frequent use of the cell phone among them, WhatsApp was used. The "mental diet" was administered for 21 days in order to create new neural pathways (habits of thought). Furthermore, participation in the "mental diet" was voluntary.

Short talks

Each day before starting the class for 15 days, 15 minutes of what is called here the “awakening” process were included. This included reflections to make the students aware of their thoughts... what do you think? Your thoughts define your feelings and living conditions... Topics such as “we are what we think”, “difference between I AM and I AM”, “positive words”, “Time we dedicate to reproduce and transmit tragedy and discontent”, “news and its toxicity”, etc.

Each class began with a sentence, a very brief development was made with examples and ended with motivating questions.

The topics of the sentences that were developed in class were the following:

- We are what we think.
- What do I dedicate my thoughts to every day.
- Thoughts and illness.
- Difference between I AM and I am.
- What happens outside are our interpretations.
- I do not understand what happens outside.
- I do not judge, I do not criticize.
- Wishes.
- Destiny and life plan.
- I am what I can or I am what I want.
- Enjoy the road not the destination.
- Here and now.
- More surprise less expectation.
- One day at a time.
- I can see things differently.

These exercises were carried out as a disruptive measure to move the students' comfort zone and change the concept of the way of teaching subjects as demanding as hard sciences, specifically in Biomathematics. This seemed an excellent way to make changes, with activities that forced the students to reflect, to externalize their thoughts, invited them to realize their own attitudes and thoughts. Likewise, they realized that making mistakes was learning, that allowed them to eliminate what contaminated them and they could be free to choose not to drink or not to think. Specifically, the aim was to develop emotional intelligence through these activities in order to create positive environments and increase the willingness of students to acquire new learning and skills that would lead them to mastery of the subject.

Each day a short and short topic was developed, allowing students to participate with comments and / or questions. Afterwards, the established planning of the Biomathematics subject continued.

At the end of the course, a questionnaire with open questions was applied, in order to know the degree of satisfaction of the strategy used. Responses were collected and analyzed later. In particular, the questions aimed at knowing what they had liked about the short talks and their impact on their person (Annex 2).

Mental diet

At the end of the 15 days of brief talks, what was called "Mental Diet" began, which was a dynamic of observation and mastery of thoughts by sending a daily reflection, accompanied by an activity through WhatsApp. The exercise included short explanations and a task for each day. (ANNEX 1), in the course of 21 days, in order to create a habit.

The students were invited and registered voluntarily, they participated by doing the exercises for each day, during the established time. This diet was based on the one developed by Neville Goddard, with slight modifications that allowed expanding the exercises and notes of Healing your life by Louis Hay, A Course in Miracles and the publication of endorphins: the hormones of happiness by José Miguel Gaona to abound in the subject.

At the end of the semester they were sent an online questionnaire to evaluate and find out the impact of this activity and its usefulness (Annex 2).

Results

The groups of the Biomathematics subject were made up of 52 students in the 2019A calendar and 42 students for the 2019B calendar. The course was taught three days a week, two hours each.

Talks

At the beginning of each class during the first 15 days except the first day in which the frame of the subject and the way of work and evaluation are explained. Each class developed a topic in a very compact way, it never exceeded 15 minutes of the class. The subject was taught and immediately afterwards asked what they knew about it.

For example, for the topic Difference between I AM and I am

Question What is the difference between I AM and I am?

The answers were very mechanical, definitions without context, without emotion, they only answered unanswered. "Being" they related to space, location and "I AM" they related to everything they were in relation to social data and academic degrees; I am Mexican, I am a woman, I am a student, etc. when what was really wanted is that they try to describe themselves in relation to their wishes and dreams, as human beings. The "I am" was developed as a temporality data of which they are seldom aware. I AM a dreamer who wants to live like this, I AM someone who likes to teach, I AM someone who likes to live and work. I am: "sick" "sitting" "tired" "studying". The objective was to make them aware of how they use words to describe or qualify themselves without thinking that it is not the best way to do it or that they do it without wanting this to be the case really, without intention. They are driven mechanically. For example, they say "I am stressed" they say it without thinking, they do not want to be stressed, but they declare it and this in turn pigeons them into "being stressed" and they do nothing else to move from that place and they remain stressed.

At the beginning of the class in which the aforementioned topics were included, the students' astonishment towards the topic was noted, they even had a hard time participating when they were asked questions, they answered with laughter and surprise, it seemed like a do with Biomathematics? " but they could quickly get their attention, they even showed more attention than other previous groups.

After 15 days, the subject stopped being developed, without prior notice. The students didn't say anything, the math class continued, then one of the students asked "Are you not going to see what you were giving us at the beginning of classes?", I replied, "I don't know, what Do you say? Is it necessary? They answered among others: "we don't have to reflect", "How do we know that we are doing well?", "No one gives us what we see there and it helps us to use our minds in another way", these are some of the responses received.

For the "start talks" for the 2019A group, the question was asked a week after they had stopped giving them and for the 2019B group immediately when the class did not start as usual they asked about the talks requesting more of them. The request was used to involve them in the second activity, "the mental diet" and the students were asked that those who were interested to register in the league that was provided to them in the WhatsApp of the "Biomate" group arranged for the group called "Mental Biomate Diet".

As a result of the exercises, the students emphasized the phrases or words that, in their perception, did not contribute to something positive from the work we did. They were more aware of the words they used and what they said was more thoughtful. Some even after having spoken, they said "if I was clear?" "Did I say it appropriately and with emotion? They were already more aware of what they were saying and how they expressed themselves. Maybe joke and joke at first, but then it was normal for the semester.

Some students were interested and asked for bibliographic references to continue their development on their own.

Regarding the question Did you like the strategy used?, The students of the 2019A calendar considered that they liked it by 70%, and those of the 2019B calendar liked it by 75%. For the question of whether they had reflected on their thoughts before in 2019A, 49% of students say that they had never reflected on what they think, while in 2019B 54% had not done it before.

In 2019A 2 students and in 2019B 2 students considered the activity useless and that it only took up effective time from the subject.

For the question, if they believe it necessary to include this type of activities in the classes, 70% of 2019A and 72% of 2019B consider that they should be included in the programs.

Mental diet

For the mental diet, 32 students from group 2019A (62%) and 27 students from group 2019B (64%) voluntarily signed up.

From the responses to the questionnaire, it was revealed that in 2019A only 32 were recorded and 10 that if they wanted to do it, they did not sign up because they forgot, 10 decided not to take it.

In 2019B, 27 signed up, 6 forgot to do so, and 9 decided not to participate.

Of the participants in the mental diet, 60% of 2019A consider that the activity contributed something to their lives, while in 2019B it was 80%. Among the contributions they mention that: "it improved their life", "it helped them to understand", "it gave them security" and "it gave them tools".

Contribution to the educational relationship and the learning process

This type of activities in my appreciation paid for more interaction with the students from as people. Suddenly talking about what we feel leads to better relationships and more trust in the teacher-student relationship. It is no longer just about what they "should do" what they "should learn" knowledge-assessment-qualification and distance between student and teacher.

In the daily deal there was more camaraderie and they remembered phrases and situations mentioned in the exercises and brought it to class. For example, when a student asked another for something in an inappropriate way, someone mentioned for example "it sounded like a demand, did I perceive that?" Immediately afterwards, the applicant student corrected the way he had done it and there were even apologies. Very interesting indeed. They are useful activities to start making better work environments. Create them by example, not just imposing or demanding. Many do not know how to do it any other way.

Recommendations to other academics

The times that are shared with the students are very important, you have a temporary relationship with them, very close, without realizing it, without becoming aware of the closeness with them, even for that short time and the teacher generally does not allows you to enjoy the activity of teaching and learning from each of the students, either inside or outside the classroom. In addition, students are educated and enjoy "going to school" in our hard science classes.

Annex 1. Content of the Mental Diet applied to Biomathematics students.

Day ONE We have no neutral thoughts

Day TWO Emotions and illness

DAY THREE Imagination

DAY FOUR Imagination and desire

DAY FIVE What you think determines the character of life

DAY SIX We are what we think

DAY SEVEN Reality and perception

DAY EIGHT Cause and effect

DAY NINE I don't make judgments

Day TEN Anticipate

DAY ELEVEN Only the good

DAY TWELVE Keep an eye on your internal conversations

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DAY THIRTEEN Thanks

DAY FOURTEEN Repent

DAY FIFTEEN Choose

Day SIXTEEN Move

Day SEVENTEEN Check

Day EIGHTEEN Live in the end

DAY NINETEEN Meditate

DAY TWENTY Assume

DAY TWENTY-ONE Persist, don't despair

Annex 2. Final evaluation questionnaire for students

Life Plan and SELF-REFLECTION Activity

During 15 days before starting the class, a few minutes of reflection were dedicated to the life plan with the topics: who am I? What wish from life? Understanding my thoughts and their relationship to emotions.

- 1- What was your perception of having worn it in class?
- 2- Did you like it? Yes / no explain
- 3- In your perception, was it useful or not? Please extend your answer beyond a simple YES or NO.
- 4- Do you think this type of activity is necessary in your professional training? Explain

On the other hand, a "Mental diet" group was formed on WhatsApp in which a brief explanation and a simple daily exercise were developed for each day for 21 days.

- 1- Were you part of this group?
- 2- Why did you or did you not include yourself in the group?
- 3- If you were part of the group, answer the following questions:

a) Did the activity add something to your life? Explain

b) What did it give you that you didn't have before?

c) Have you reflected before on the way you think? Explain

d) Did something change in your life?

Explain

e) What do you keep?

Conclusions

More than 50% of both groups perceived the reflections as positive and useful. Attitudinal change was perceived in the group during the work in the classroom and in the relationships between them during the activities. At least half of both groups mention that they have never reflected on their thoughts before and what they invest them on.

More than 50% of both groups signed up and participated in the mental diet shared by WhatsApp. Among the contributions that students mention to their lives, the ones that stand out the most by frequency are that: they improved their lives, gave them security and gave them personal tools.

References

Castillo Sarmiento, A. Y., Suárez Gélvez, J. H., & Mosquera Téllez, J. (2017). Naturaleza y sociedad: relaciones y tendencias desde un enfoque eurocéntrico. *Luna Azul*, (44), 348-371.

Crispín, M. L., Doria, M. D., Rivera, A., Garza, T., Carrillo, S., Guerrero, L., & Esquivel, M. (2011). *Aprendizaje autónomo: orientaciones para la docencia*. Ciudad de México: Universidad Iberoamericana.

Pablo Fernández-Berrocal, Desiree Ruiz Aranda (2008). *La Inteligencia emocional en la Educación*. Consultada en agosto 2019. http://www.investigacion-psicopedagogica.org/revista/articulos/15/espanol/Art_15_256.pdf

Gaona, José Miguel (2007). *Endorfinas las hormonas de la felicidad*. Ed. La esfera de los libros.

HERNÁNDEZ-TINOCO, Araceli & MORÁN-SALAS, María Cristina. Experience on the use of activities for personal development and hard sciences in higher education students. *Journal of Human Resources Training*. 2020

Gardner, R.C., Lalonde, R. N., Moorcroft, R.(1985). The role of attitudes and motivation in second language learning: correlational and experimental considerations. A journal os research in lenguaje Studies. Cunsultado en julio 2019.

<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-1770.1985.tb01025.x>

Goddard Neville (2016) Dietas mentales. Spanish edition. Editada y traducida por espanol.imaginationand faith.com

Goleman, Daniel; (1996). *La Inteligencia Emocional*, Editorial Kairos S.A. 1ª. Edición

Guichot (2006). *HISTORIA DE LA EDUCACIÓN: REFLEXIONES SOBRE SU HISTORIA DE LA EDUCACIÓN: REFLEXIONES SOBRE SU OBJETO, UBICACIÓN EPISTEMOLÓGICA, DEVENIR HISTÓRICO Y TENDENCIAS ACTUALES*. *Revista Latinoamericana de Estudios Educativos (Colombia)* Guichot Reina, Virginia vol. 2, núm. 1, enero-junio, 2006, pp. 11-51 Universidad de Caldas Manizales, Colombia. Consultado en julio 2019.

www.redalyc.org/pdf/1341/Resumenes/Abstract_134116859002_2.pdf

Louis Hay (1993) Usted puede salvar su vida. Ed. Diana.

Moreira, M. A. (2012). La teoría del aprendizaje significativo crítico: un referente para organizar la enseñanza contemporánea. *Revista iberoamericana de educación matemática*, 31, 9-20.

Morin, E., Ciurana, R., & Motta, D. (2003). Educar en la era planetaria. El pensamiento complejo como un método de aprendizaje en el error y la incertidumbre humana. España: Ed. UNESCO.

Fundación para la paz interior. (2019). Un curso de milagros, 2ª edición. Editorial Peace of God E.U.