

STEM+Emotions with KneoWorld: Learning for Life¹

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Abstract: The term STEM has taken much relevance in recent years at the educational level, and STEM is an educational approach that allows students to recognize and live active learning experiences, while integrating various areas of knowledge in order to promote educational skills and life skills by connecting to social reality. KneoWorld education seeks to complement and help teachers to advance in curricular flexibilization as a possibility to put in dialogue different teaching areas from a digital platform that promotes integrated work, context, inclusion, creativity, mathematics, reading and teamwork.

This article is configured in a STEM+E (science, technology, engineering, mathematics, and + Emotions) proposal, since KneoWorld considers the importance of an active and contextual learning in which emotional aspects are incorporated in the educational process. Understanding and stimulating emotions is one of the great secrets of education, it facilitates learning and teaching. We must understand that education and STEM must go beyond theories, they must focus on the human, there can be no education without emotions.

Keywords: STEM, STEM+E, Social-emotional education, Human pedagogy, Comics.

Listening, playing and comics: Some of the great secrets of KneoWorld education

"It is only with the heart that one can see well: The essential is invisible to the eye".
Antoine de Saint-Exupéry

Platón was not wrong when he stated approximately 2,200 years ago that the emotional disposition of children determines their ability to learn (quoted by Viloría, 2005). In this sense, the Chilean Humberto Maturana (1997, P. 24) was clear in pointing out that the emotion that founds the social as the emotion that constitutes the domain of actions in which the other is accepted as a legitimate other in coexistence, is love. In his words:

It is said that we are rational beings, but in reality we are emotional beings who can also reflect and choose what we do in the different circumstances in which we find ourselves. And there are no other living beings that can do it in a reflexive way, and that is possible because we exist in language. That is our great treasure: we can choose at every moment what we do.

Maturana reminded us that "love is the only emotion capable of expanding intelligence". In KneoWorld we believe in what Dr. Maturana said, our education strengthens and prioritizes in a loving language, in creating learning environments in peace and coexistence with our students and families, we believe that there cannot be a meaningful learning if there is not a pleasant, respectful environment in which feelings, thoughts and emotions are expressed.

As a researcher and pedagogical advisor of KneoWorld, I believe that the best teaching and learning method is and will be to know how to listen. Today our educational systems need to learn about listening to the different learning rhythms that inhabit a classroom, it needs to read the human beyond numbers and competencies, it needs to understand children (Espinosa, 2020).

In the above sense, the KneoWorld educational method is designed to strengthen the teaching and learning process, it helps teachers and students to progress in all their creative and imaginative potential while having fun in a world full of adventures and pedagogical reflection. The KneoWorld method allows students to learn on their own, with the help of educators, and take charge of their own learning, gaining confidence, security and interest in learning.

How to create an environment of trust and security?

Kneoworld understands that, from birth to eight years old, children build the foundations on which the rest of learning can take place. This fundamental learning occurs through play (KneoWorld, 2022), this idea is

¹This article is part of a series of educational reflections proposed by the KneoWorld Education programme. Visit KneoWorld: <https://www.kneoworld.com/> and play our educational video <https://youtu.be/vzIkeT7hAt4>

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supported by studies and reflections made by great pedagogical theorists such as Piaget, Groos, Vygotsky, Cuéllar, Tenreyo, Castellón, Tonucci among others. Learning while playing is experiential and immersive, motivates students to continue learning, stimulates curiosity to learn more and more. That is why the implementation of comic books are designed and developed according to the educational competencies and curricula, responding to the learning of each grade.

How does KneoWorld and STEM work? And what is KneoWorld STEM+E?

STEM Education is an educational method that brings together various disciplines (Science, Technology, Engineering, Engineering, and Mathematics) and develops deep scientific and mathematical thinking with a focus on innovation. It proposes learning based on problem solving and develops skills that are indispensable for access to the world of work in our societies.

In this way, the KneoWorld educational program together with STEM is configured in a complementary curriculum based on the United Nations Sustainable Development Goals (integrating science, mathematics, engineering, technology and more). This program is designed to provide Pre-K through 6th grade students with a tiered STEM experience using creativity, collaboration, communication and critical thinking to solve relevant real-world problems.

KneoWorld understands that STEM works best when you apply it to the real world, to the world of life, allowing you to reflect on your own context and face challenges. In this way, education must go beyond theory or a simple integration of disciplines, on the contrary, it must start from the reading and recognition of emotions.

The integration of disciplines in STEM would not make any sense if we do not first take into account the characteristics of the contexts, if we do not first understand our children, if we do not build a strong bond of work between family, children and teachers.

KneoWorld STEM+E

STEM+ E is to train students with critical thinking, creativity and sensitivity to respond to current issues, starting first of all in the strengthening of emotions in coexistence with others, animals and nature. This proposal invites us to recognize the role that emotions play in education and learning in our society. Emotions such as: love, friendship, care, solidarity, sensitivity, putting ourselves in the place of the Other, among other emotions.

Curriculum flexibilization: Learning from Diversity

Curricular flexibilisation makes possible a constant link with the social environment, as its flexible nature allows for the incorporation and modification of content in accordance with changes in reality. Rocío Roso (2000)

KneoWorld's education³ starts from the recognition of the students' context. In this way, it implements a flexible curriculum maintaining the same general objectives for all students, but allows different opportunities for access to this; that is, it designs and implements a teaching-learning process based on social diversity, a flexibility based on respect for the different cultures and learning styles of the students, and in this way providing equal opportunities to learn.

By making the curriculum more flexible, KneoWorld's teaching method promotes self-care and care in solidarity with others, but also focuses on transformation and research. The children learn to investigate while having fun, and play is a pedagogical strategy that makes this investigative process possible.

Professor Rocío Soto (2000) of the School of Education Sciences of the Autonomous University of Baja California considers that through the flexible curriculum, the student acquires an active participation in his or her formative process, allowing a greater appropriation of the study plan. In his words:

The flexible curriculum is based on the principle that education should focus on the learning of ways and methods of thinking and research, under a holistic approach that rescues and puts into practice the integral and autonomous formation of the student, with the direct and active participation of the student in the design of the study plan and in the formative processes, promoting research and interdisciplinary work as ideal didactic forms (Soto, p.3) .

KneoWorld understands the flexible curriculum as a dynamic process that pedagogically enhances students' education. At the same time, it implements an education focused on equity and excellence. This kind of

³Learn more about the KneoWorld methodology and its educational benefits.

<https://www.kneoworld.com/research/kneoworld-deyby-espinoza-gomez/>

curriculum demands recognition of the diversity of students and their families, each student is creative, thinking and active, for as curriculum expert Shirley Grundy (1991) points out, "the student is a creator along with the teacher" (Grundy, 1991, p.142).

Flexible Curriculum

At KneoWorld we think of a flexible curriculum



Creative and dynamic

Creative that seeks to improve pedagogically the learning of students. KneoWorld teaches how to take care of ourselves and living beings.



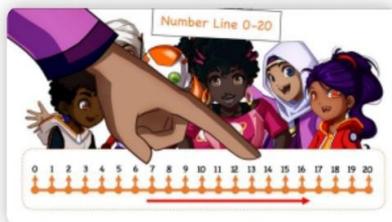
Includes competences

The programme integrates actions, objectives, content and methodologies for 21st century knowledge. It strengthens mathematics, reading, STEM, and socio-emotional skills.



Humanist

The learner is thinking and active. Its focus is on equity and human dignity. It promotes action, reflection, autonomy and responsibility.



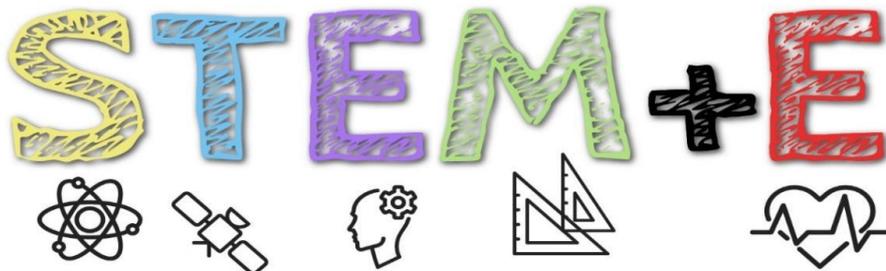
Contextual

It starts from the recognition of the diversity of learners and their social contexts. It understands the different ways of learning. The classroom becomes a laboratory for interaction and reflection with others.



Integrated

It allows work from different disciplines of knowledge to strengthen skills, competencies and content. Art, music, stories, mathematics and games are used.



“ Emotions help to promote learning, as they can stimulate the activity of neural networks. When the atmosphere in the classroom is positive, knowledge is learned more easily. ”

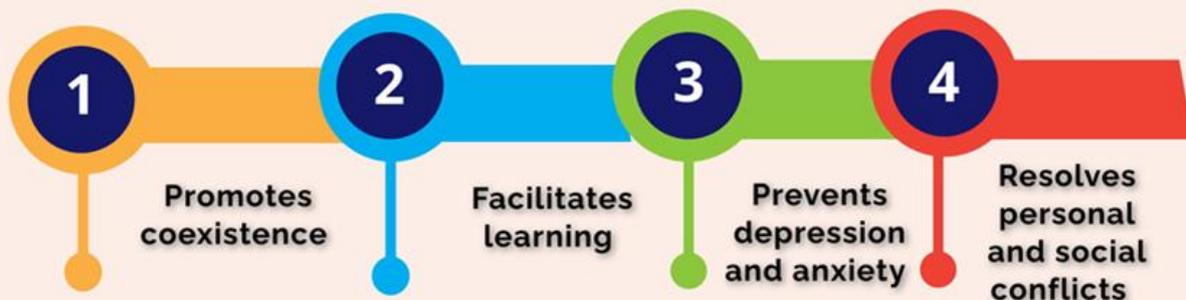


STEM + E

Promotes the opportunity to practice basic arithmetic skills, problem solving, creativity, collaboration, critical thinking; research and questioning skills, Strengthens emotions allowing for more regulated, autonomous and flexible thinking..



It involves learning and feeling with others. It promotes from an interdisciplinary learning the CARE OF LIFE. Through the KneoWorld comics, emotions are experienced that stimulate processes such as memory and attention. This methodology helps not only teachers and parents at the time of the classes, but also the students so that they know how they can influence their learning.





Thinking STEM+E is synonymous with mobilising our emotions to feel together. Mobilising our emotions helps to foster learning, as it can stimulate the activities of neural networks. Let's not forget that a classroom with a positive learning environment allows knowledge to be acquired more easily, and to last in the minds and hearts of students.

STEM is undoubtedly an educational approach that enhances scientific and technological competencies in line with 21st century skills. Likewise, KneoWorld considers that while responding to global educational demands, it is fundamental to stimulate and promote the learning of emotions, as this generates many benefits for students on an educational, social and personal level.

STEM+E is about forming citizens of context, it is about promoting doubt, questioning and curiosity in learning. It is to understand that STEM+E is lived at home, at school and in the city.

As mentioned above "STEM works best when you apply it to the real world" (KneoWorld, 2022) from baking, cleaning, shopping, family trips, school, neighbourhood, living together, etc.

STEM+E means understanding that an engineer's profession is just as important as an artist's profession, it means understanding that education should be synonymous with joy, because education allows for active and unique learning experiences in order to develop competences for life.



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Image. The KneoWorld team at work. The classroom becomes a learning laboratory through comics and games.