

Education 27 We have to be brave

Foreword by the author

The vision of the association I co-founded, Delta Cultura, is to eradicate poverty through education. All of us at Delta Cultura want a world in which every child is given the skills and requirements to lead a self-determined, free and dignified life. We want education that promotes critical thinking to bring much-needed change to the world. The educational concept described here is in the early stages of its implementation and will make a significant contribution towards realizing this vision.

The genesis of this initiative is extremely complex and, of course, it is due to various factors. However, I would like to highlight one particular trigger because it illustrates the structure, the past and future development of this initiative. The German philosopher Richard David Precht gave this impulse during a television broadcast. He said: “We should forget everything we know about school and think about how we can best prepare our children and young people for a future that we don’t even know exactly what it will look like. We should consult developmental psychologists, child psychologists, learning experts...” I mention this because *Education 27* implements exactly that.

Over a year ago, I decided to develop a project from the existing Education Center that would enable children and young people to avoid having to forcibly attend public schools. This also corresponds to the often-expressed wish of the children and young people we look after on a daily basis. Our goal is to become a publicly recognized educational institution. I consciously avoid using the terms “kindergarten” or “school” because they awaken associations for me and many other people that have nothing to do with this educational concept.

I used the past year to question my ideas about education and school and to deepen my knowledge of neurobiology, psychology and pedagogy. I visited various alternative schools in Austria, Germany and Switzerland and had countless conversations about education, including with students. In Switzerland, I got to know and appreciate the founder of the Zeit-Kind-Schule, Armin Fähndrich. Since then he has acted as a consultant and his school offers people from Delta Cultura training and further education.

However, even after these trips and the numerous conversations, to the chagrin of some of my fellow campaigners, I found myself unable to write a description of the planned educational concept. It was only by delving deeper into the subject of “emotions and learning” and knowing numerous scientific studies on this topic that I was able to put this educational concept down on paper. It was, so to speak, the last piece of the puzzle that was missing for me. It is now time to consult more experts.

I see Delta Cultura as a “link” between science and the practical implementation of the knowledge it acquires. Delta Cultura has 20 years of experience in financing and implementing projects. I would like to use this to get the *Education 27* project off the ground.

The second part of the headline is thanks to the neuroscientist Immordino-Yang, who has been researching emotions and learning for decades. In an interview with the neurobiologist Huberman, which is linked in this concept, she commented on educational concepts and said at the very beginning (and I like to repeat it): we have to be brave.

About this concept / this project description

The following project description is divided into two parts.

The first section describes the status of the educational concept. It shows the direction in which Delta Cultura's educational idea is developing.

The next steps, goals and activities are described in the second section.

Overall, this project description provides a comprehensive overview of the concept of education 27, the next planned steps and the resources required on the way to becoming a publicly recognized educational institution.

Historical background

Delta Cultura began its activities in Tarrafal in 2002 with a "football school" and a Batuco group. (Batuco is a drum-dance-singing tradition from the island of Santiago, performed only by women.)

Since the beginning, Delta Cultura has seen the football school as an educational activity, a tool for social change and not as a training facility for professional footballers.

In 2005, the construction of today's Delta Cultura Education Center was completed with the help of the German Association Arbeitersamariterbund and financing from the BMZ (German Ministry for Economic Cooperation).

Delta Cultura has been running the Education Center successfully since then. The offers of the Center have changed and expanded over the years. Football and Batuco are still important components, but have been supplemented by a kindergarten, artistic activities, music, IT and school support.

Details about the Delta Cultura Education Center can be found here:

- <https://deltacultura.org>
- <https://facebook.com/deltacultura>
- <https://instagram.com/deltacultura>

Short description

Education 27 builds on Delta Culturais' 18 years of experience in the educational sector. Scientific findings from the areas of neurobiology, psychology and pedagogy are already incorporated into the concept (sources are listed in each section), but must be deepened by experts in the various areas relevant to education. Contacting and involving these experts is part of the next planned steps.

The starting point of the educational initiative is the often-neglected importance of emotions in the learning process. Emotions here refer to complex processes in the nervous system that include feelings, physical reactions and thought processes.

To put it simply: Without emotion, there is no thinking, and without thinking, there is no chance of learning anything. This concept is initially about how emotions that are important for the learning process can be generated. This is where things like telling stories, asking questions, questioning values and creating challenges come into play. All of these things generate emotions and thus promote the natural curiosity of children and young people.

Another part of the project process is the further announcement of the existing Education Center and the communication of the educational concept to a broader public, both nationally (Cape Verde) and internationally. Therefore, an education forum is planned for the end of 2024 in Tarrafal, in which international and national education experts will be involved.

Another activity, which also aims to make the project better known, is to search for celebrities from a wide range of areas (music, art, sport, media, etc.) who are willing to commit themselves to the project.

On the history of school psychology, pedagogy and neurobiology

Since a look at history and development - regardless of areas - strengthens the understanding of what is today, this project description includes an outline of the history of schools, pedagogy, psychology and neurobiology. A timeline of the development of these areas can be found at the end of the project description.

The fact that the view on education is strongly Eurocentric is due to the western educational expansion (colonialism, missions, etc.). However, this description does not want to give the false impression that education, as we understand it today was influenced exclusively by Europe.

The development of schools as we know them today was a progressive process that was shaped by cultural, political, economic and pedagogical influences.

Here are a few important and interesting details about the development of education:

- The term "school" first appears in cuneiform writings from the Sumerians in 3400 BCE.
- In antiquity and the medieval - i.e. until around 1500 CE (up to 500 years ago) - education was mainly in the hands of religious institutions and was reserved for male elite.
- A major reason why education was made accessible to all during the Industrial Revolution (early 19th century - around 200 years ago) was the need for workers.
- Psychology has long been part of philosophy and was dominated by Greek philosophers and Christian theologians. Psychology as a separate science has only been around for around 80 years.
- The first universities were those in Bologna (1088 CE) and in Paris (1150 CE).
- Research into the nervous system has also long been influenced by philosophical and religious views.
- The discovery and research of neuroplasticity only began around 1960, around 60 years ago. The understanding of our nervous system has changed and developed rapidly since then.

The concept of education 27

Principles and basis

Some of the key principles of the educational idea of this concept are:

- Education leads people into their freedom.
- Education leads people into action.
- Educational institutions offer people safe spaces in which they are welcome and recognized for who they are.
- Education preserves people in their originality and individuality.

This educational concept can be represented in a simplified graphic as follows:



As emotions are key to learning success, this section will be covered first.

Emotions and learning

Without emotion, there is no thinking, and without thinking, there is no learning.

Emotions play a crucial role in the learning process. They influence how we absorb, process, store and access information.

For many people, the importance of emotions for learning becomes clear because emotional events are remembered much better.

What does science say?

The importance of social emotions for learning has already been extensively researched and proven. Advances in neuroscience in this field demonstrate the connection between cognitive and emotional processes in our nervous system.

Until the 1980s, the prevailing idea in neurobiology was that cognitive abilities such as reasoning, decision-making and processes responsible for areas such as language, reading and mathematics represented higher-level systems in the nervous system. Although it has been recognized that these systems are somehow influenced by emotions, the crucial role of emotions in controlling behaviour and especially rational thought has often been overlooked.

In research that focused on cognition, it became clear that the irrational behaviour of neurological patients who had suffered damages in a specific area of the frontal lobe could not be adequately explained by appeal to cognitive mechanisms alone.

Some relevant results of various studies and investigations can be summarized in key words as follows:

- Emotions and physical states are closely linked to the learning process.
- Knowledge remains theoretical when we are not emotionally involved.
- Irrational behaviour, incorrect assessments and conclusions do not depend on IQ, the amount of knowledge or logical thinking skills, but rather on emotions.
- The absence of emotions affected by disorders lead to:
 - Impaired social behaviour
 - Impossibility of learning from mistakes
 - Insensitivity to the emotions of others
 - Violating ethical rules and social conventions
- Emotional processes are necessary to be able to translate acquired knowledge into decision-making and actions in the real world, i.e. when and how this knowledge can be applied in life.
- The close connections between decision-making, emotions, and social functioning demonstrate that social influences of culture emotionally shape learning, thinking, and behaviour.
- Positive emotions can promote creative thinking and problem solving.
- Emotions are closely linked to adaptability. They help us to respond to new challenges and integrate new knowledge. Emotional resilience makes it possible to cope with difficult learning situations and overcome setbacks.
- Strong emotional connections to a topic can lead us to delve deeper into the topic and seek further knowledge. This intrinsic motivation can make learning more sustainable.
- Promoting emotional intelligence increases learners' self-confidence and social skills.

In general, scientists point out that separating emotion from cognition can be helpful in the study of learning, but at the same time, it obscures the fact that emotions include cognitive aspects and sensory processes.

As described above, emotion is at the beginning of all learning. It is therefore no coincidence that the area of emotions is the first area to be described in more details.

This also illustrates why the focus in this educational concept is always on creating the emotions necessary for learning. How this can be achieved is described in the following chapters.

Sources

Art	Editor	Publication	Keywords	Language	link
podcast	Andrew Huberman	06/05/23	Conversation between Andrew Huberman and Helena Mary Immordino-Yang about social emotions and learning.	English	https://tinyurl.com/v4dpy62k
interview	USC Rossier	06/15/23	Interview with Immordino-Yang (Professor of Education, Psychology and Neuroscience)	English	https://tinyurl.com/bdd8hkcz
Article	Dr. Claudia Kemper, Dr. Thorsten Logge	06.23	How do we move from knowledge to action?	German	https://tinyurl.com/2mwxs3c
Article	Immordino Yang and Antonio Damasio	2007	We feel and therefore we learn.	English	https://tinyurl.com/3hzzfev6

Importance of creating emotions for learning

The goal is to create emotions that generate positive feelings such as curiosity, joy, well-being and interest. This happens in an environment in which children and young people can develop their own motivation to learn. Therefore, it is not about motivating children and young people, but rather giving them the opportunity and space to intrinsically motivating themselves.

This can be achieved by using various "tools", which are described below. It is important to emphasize that knowledge of all the tools listed here and how to use them correctly still need to be deepened. Experts from the relevant areas are brought in, which is part of the next steps described in the next chapter.

Telling stories

“Storytelling” is a very complex aspect and is of great importance, both for creating emotions and for conveying knowledge.

Educational research has examined the use of stories as an educational tool. Studies show storytelling improves learning, promotes creativity and critical thinking.

Brain scans and other neuroscientific methods have been used to study how the brain responds to stories. This has provided insights into the neural basis of storytelling and emotional engagement. Here are some results:

- Listening or reading stories stimulates the production of hormones and neurotransmitters, which differs depending on the type of story.
- When listening to stories, the so-called neural coupling occurs, which means that the neurons in the listener's brain fire - with a delay - in the same way as those of the narrator.
- When listening or watching, areas of the brain that are responsible for predictive and anticipatory responses are being activated.
- Stories can influence social norms and prejudices. They can change attitudes towards social issues and can be used to promote social change.

Questioning

"The ability to ask questions is the greatest tool of the human mind." (Carl Sagan)

The importance of questions for learning is undisputed and complex. In general, it can be stated:

- Questions can trigger the personal relevance of learning content.
- The ability to ask questions is one of the most important lifelong learning skills people can acquire throughout their education.
- People who learn to ask their own questions are more motivated to take ownership of their learning and therefore demonstrate a better understanding of challenging content.

A special aspect of asking questions is questioning values. This ability is important for various areas of human development. It is important to emphasize that “questioning” is not the same as “throwing away”. Here is why it makes sense to question values:

- **Self-reflection:** Questioning one's own values allows a person to understand why he or she has certain beliefs and how these influence one's behaviour.
- **Growth:** Questioning values makes it possible to adapt to new life circumstances and experiences and to grow personally.
- **Critical thinking:** Questioning values enables a person not to simply blindly follow the traditional expectations of their family or society, but to examine their own beliefs and principles and adapt them if necessary.
- **Morality:** Questioning values helps create a solid foundation for moral decisions.
- **Interpersonal relationships:** Different people have different values. Questioning one's own values makes it possible to better understanding why other people have certain beliefs and can therefore improve communication and understanding in interpersonal relationships.
- **Social progress:** Questioning social values is important to drive positive change and progress.

Questioning values is therefore a key to personal development and social progress.

Challenges

The meaning of challenges overlaps in many ways with that of “questioning”. In this way, challenges can also achieve the goal of triggering the personal relevance of learning content, developing cognitive skills and thereby gaining a deeper understanding of the subject matter.

Other positive aspects of creating challenges:

- **Promote critical thinking and analytical skills:** A person faced with a challenge must critically examine the information available to them in order to develop solutions.
- **Promote motivation:** Facing a challenge can be motivating. It can stimulate learners' interest as they realize the importance of what they have learned when they apply it to solve real-world problems.
- **Transfer of Knowledge:** Challenges help transfer knowledge from abstract concepts into practical applications.
- **Promote self-directed learning:** Solving problems requires independent thinking. This supports self-directed learning and the development of problem-solving skills.
- **Promote interdisciplinary thinking:** Challenges often require knowledge from different areas. This promotes the networking of knowledge and the development of a holistic understanding.
- **Promoting problem-solving skills:** Everyone constantly encounters challenges throughout their lives. The ability to see this not as a threat but as an opportunity better prepares children and young people for their lives.

Sources

Art	editor	Publication	Keywords	Language	link
study	Journal of Problem-Based Learning	04/30/19	The effects of the <i>havruta</i> method	English	https://tinyurl.com/2ptfzr2j
TED talk	David JP Phillips	03/16/17	Science of storytelling	English	https://tinyurl.com/2r8brycr
Article	Neuro-Leadership Institute; Ted Bauer	09/30/21	The Neuroscience of Storytelling	English	https://tinyurl.com/yv8psteh
study	PubMed Greg Stephens, Lauren J Silbert, Uri Hasson	08/10/10	Speaker-listener neural coupling underlies successful communication	English	https://tinyurl.com/hma9kybr
Article	forbes.com Julia Brodsky	12/29/20	Why questions are the best learning method.	English	https://tinyurl.com/mvc2wmfv
Website	Betsy Smith, Dan Rothstein	1990	Many further links and ideas regarding the meaning of questions.	English	https://rightquestion.org/

Knowledge Transmission

If the measures described above have led to a child or young person discovering an interest in developing a skill or knowledge, it is then the task of an educational institution to impart these skills and/or this knowledge in a child- and age-appropriate manner.

Some aspects of knowledge transfer that are of great importance for this educational concept are described below.

Type of learning

The classification into “learning types” is nowadays scientifically controversial and is often described as an inadmissible simplification. Nevertheless, it can be helpful to know the different types of learning and to be aware that it is not possible for a person to exclusively prefer one of these learning styles, but rather to have a combination of different preferences. These preferences may also vary depending on the material being learned.

The most common ways people prefer to learn:

- **Visual Learners:** These people learn best through visual representations and presentations such as charts, graphs, pictures, maps, etc.
- **Auditory learning:** These people learn best when they hear information. They prefer lectures, discussions and podcasts. Hearing information allows them to process and understand it better.
- **Kinaesthetic or haptic learning:** These people learn best through physical activity and hands-on doing. They learn best when they can touch, manipulate, or gain hands-on experience.
- **Learning by Reading/Writing:** These people learn best by reading and writing information. They prefer studying books, notes and written materials. Writing down information can help them internalize it better.
- **Social Learning:** These people learn best in a social environment such as group work, discussions, or sharing ideas. Social exchange contributes to their learning process.
- **Autodidactic learning:** These people learn best independently and on their own responsibility. They create their own learning plans, research independently and set their goals.

Identifying preferred learning styles optimizes the learning process and is therefore an integral part of *Education 27*.

Principles of knowledge transfer

This educational concept promotes critical thinking, reflection and independent thinking. This is achieved through:

- Multi-perspective approaches: Different perspectives and interpretations of complex topics are presented and give learners the opportunity to question and compare.
- History and stories: In order to be able to question and view things critically, you need to understand how something has grown historically. This applies to all areas: religions, nations, laws, human rights, morals, ethics, etc. So to speak, everything that was invented by humans and packaged into emotional stories.
- Contextualization: Historical events and concepts are embedded in their historical and cultural context. This helps learners understand why certain events happened and how they impact the present.
- Active participation: Learners actively participate in the learning process. This can be achieved through discussions, project work, case studies, experiments and practical activities. Active participation promotes understanding and application of what has been learned.
- Exams and grading, in whatever form, are missing in this concept, because they only lead to motivation and emotion regarding the exam results and not, as desired, to motivation and emotion for learning content.
- Practical, experiential learning in which learners are actively involved in the learning process.
- Play the whole game: Teaching content is not taught in isolation from practical, real-world applications and results in everyday life. Connections are shown. This means that questions like “why do I have to learn this?” do not even come up.

Education 27 will implement all the facts mentioned in the previous chapters in everyday life. Classic schedules like those used in many schools cannot exist because every child has their own preferred way of learning, their own level of development and their own interests.

Schedules are used mainly for group activities where timetables are necessary to organize the logistics of their operations. For example, football training, or choirs.

Aids for better memorization capacity

From the field of neuroscience there is more and more understanding about how a person learns (neuroplasticity) and what happens in the nervous system. This knowledge provides practical opportunities that can improve learning and memorization.

Here are a few examples to illustrate how easily this knowledge can be integrated into practice:

- Tell stories: Information presented in the form of stories is retained better.
- Our nervous system hates being out of balance and responds immediately by releasing a “chemical soup” (dopamine, etc.). This is an ideal state for learning (“Let a person practice on a slackline for 10 minutes and then sit down to learn with them”).
- Five minutes of rest and relaxation after learning allows the brain to repeat what it has just learned. Repetition promotes learning.
- Sleep, diet and exercise greatly influence the ability to learn.

As in all other areas mentioned, the aim is to expand and deepen the knowledge of these tools. How this can be achieved is discussed in the next section, “The Next Steps”.

Sources

Art	editor	publication	Keywords	Language	link
Short lecture	David Perkins; Professor of Education (Harvard)	06/21/18	“Play the entire game”; Teach connections	English	https://tinyurl.com/yetx6a4p
Speech	Ed Deci	08/14/12	Motivation, performance and well-being	English	https://tinyurl.com/4p44m6p7
Article	www.apa.org	12/18/17	On Intrinsic Motivation: Richard Ryan and Edward Deci	English	https://tinyurl.com/yc5suaem
Podcast	Andrew Huberman; Professor of Neurobiology (Stanford)	02/15/21	Use mistakes, movement and balance for better learning.	English	https://tinyurl.com/kwyxaedj
Podcast	Andrew Huberman	05/17/21	Learn faster	English	https://tinyurl.com/2pyuj3xf

The next steps

Objectives

The goals relate, on the one hand, to the ongoing operation of the Education Center and, on the other hand, to the expansion of the Center in accordance with the educational concept described above.

These goals are:

- Adaptation of the activities of the Education Center to the described educational concept (i.e. optimize knowledge transfer)
- Scientifically support for the educational concept.
- Make the educational concept known nationally and internationally.
- Improve fundraising for the existing Education Center and its expansion.

Activities in the following year

The following activities will be carried out in the first year (start September 2023):

Gradually implement the educational initiatives described above

As the graphic in the description of the educational concept shows, the first step of the educational concept is to arouse emotions. As described, this can be achieved by telling stories, asking questions, questioning values and creating challenges.

These “activities” can already be incorporated into the current operation of the Education Center. Some of this has already happened in the past, but there can be increased focus on it. This allows experiences to be collected, documented and evaluated.

Get in touch with experts

All approaches described in this educational concept are based on the experiences of 18 years of the Education Center, as well as on intensive engagement with the topic of education.

Nevertheless, this concept cannot claim to be complete. Further scientific findings and opinions from experts should be incorporated into the concept.

This document therefore also serves to contact these experts and scientists and to persuade them for this project.

Announcement of the educational project

The successful integration of experts, the recognition of the educational concept, and the financing of the educational concept depend very much on the level of the public awareness of the existing Education Center and this educational concept. In order to achieve this level of awareness, two activities are planned to be implemented next year:

- Attract famous people from a wide range of areas to the project.
Contact personalities from the areas of sport, culture, art, media, education, etc. and persuade them to be ambassadors of the project.
- Preparation and implementation of an Education Forum in Tarrafal.
An Education Forum is planned for the end of 2024 in Tarrafal to which international experts, national education directors and the above-mentioned personalities from the various areas will be invited.

Building a global educational network

As described in the educational concept, an educational institution must be equipped to meet the desire of children and young people to acquire knowledge and skills. However, it is not possible to offer all related requests in a single place.

Therefore, national and international partners from all areas must be found: artisans, artists, educational institutions, sports clubs, institutions, organizations from all sectors that take in children and young people from the Education Center and support them in their educational development and professional future prospects.

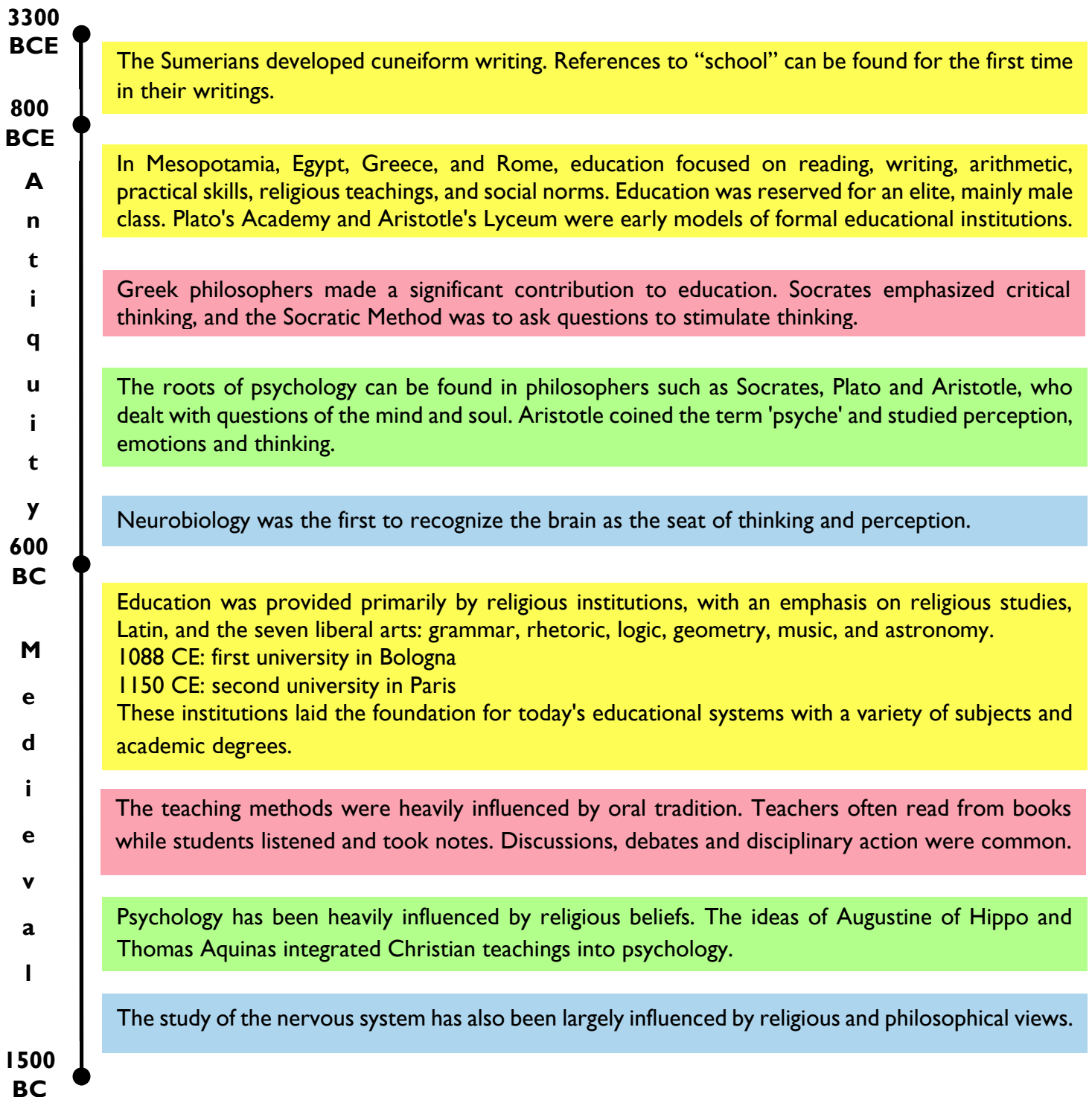
In return, the Education Center takes in children and young people from the partner organizations.

Financing two employees

In order to be able to carry out the activities described above, additional employees of the Education Center are required. Fundraising, contacting experts and celebrities from various areas and preparing the educational forum cannot be managed with the current employees in addition to the ongoing operation of the Education Center.

Education/School Timeline

This timeline provides a brief overview of the evolution of education from ancient times to the present day. It is divided into 4 areas: **School** **Pedagogy** **Psychology** **Neurobiology**
 The timeline does not claim to be complete.



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In the 16th century, schools and education systems in Europe were reformed and expanded. Humanistic schools and high schools emerged, which enabled a broader education for a larger student body. In some countries, compulsory education was introduced for the first time. Education changed towards humanism and was expanded to include subjects such as literature, art, science and mathematics.

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The pedagogical approaches of humanism laid the foundation for later developments in the field of education and influenced the understanding of education and learning until modern times. Features included an emphasis on the liberal arts and the promotion of individual education (Erasmus). Education for women began to emerge, but primarily with the aim of raising them to be good mothers and wives.

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Psychology has been heavily influenced by scientific and philosophical developments. Humanism, which focused on people and their abilities (Francesco Petrarca), gained in importance. The idea of personality traits began to take hold (Giambattista della Porta). Renaissance philosophers examined the nature of mind and thought, including René Descartes.

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Groundbreaking works such as the first anatomical textbook (Andreas Vesalius) began the modern anatomy of the nervous system and the systematic observation and study of the brain.

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Some educational institutions developed that had similarities to today's schools. In many cities there were so-called elementary schools, although school attendance was not yet compulsory. Education continued to be reserved for the elite. Education for women remained limited. It was only slowly that educators began to advocate for education for women.

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The pedagogy was strongly influenced by the ideas of ratio, critical thinking and individual freedom.

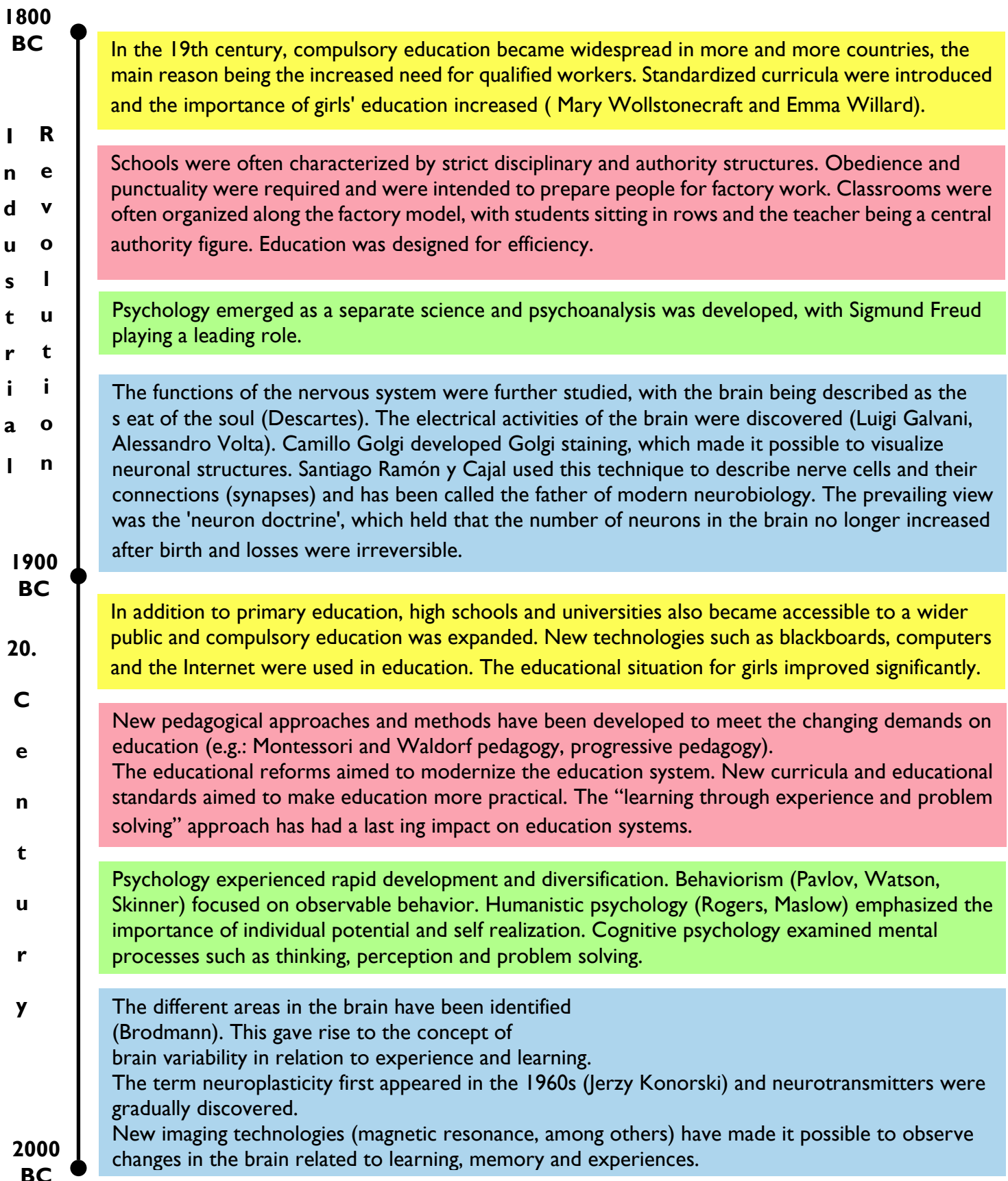
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Psychology focused on rationalism and empiricism while phenomenology developed. Enlightenment philosophers such as Jean-Jacques Rousseau and Immanuel Kant were deeply concerned with questions of morality and ethics, which led to the development of a psychological perspective on moral behavior and the reasons for ethical action. However, psychology as we know it today was not yet fully established at this time.

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The Enlightenment laid the foundation for a scientific study of the human mind, emphasizing empirical methods and reason as paths to knowledge. However, at that time, neurobiology as we know it today did not exist and there was no knowledge of the structures of the brain.

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Education systems have expanded worldwide and efforts have been made to promote equal access to education for all.

Education today is a dynamic and diverse field with a variety of educational philosophies and methods. Traditional schools, homeschooling, online education and alternative approaches coexist.

Digital technologies have changed pedagogy: online learning, educational software and interactive platforms have become an integral part of education.

Today, psychology is a diverse science, with numerous subfields that are important for education: developmental psychology, social psychology, neuropsychology, among others. Advances in neuroscience have expanded the understanding of brain functions and their connection to psychological processes.

Neuroscience is contributing more and more to understanding how our brain learns. The ever-improving understanding of neuroplasticity provides new approaches and tools to improve learning. The importance of emotions for learning is also being intensively researched. More and more studies show that grading and extrinsic motivation do not promote intrinsic motivation and learning ability (Edward L. Deci and Richard M. Ryan).