@NAVE 2

INNOVATIVE PEDAGOGICAL PRACTICES GUIDE

Organization: Carla Uller, Fábio Meireles, Fernanda Sarmento, Karina Trotta, Juliana Leonel, Roan Saraiva

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Innovative Pedagogical Practices Guide

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INNOVATIVE PEDAGOGICAL PRACTICES GUIDE

CREDITS

OI FUTURO

THE FUTURE WE BUILT TOGETHER

SUZANA SANTOS

PRESIDENT OF OI FUTURO AND DIRECTOR OF CORPORATE COMMUNICATION FOR OI

The current generation in schools is living the last frontier between what we knew about the market (and the world) and a new stage of the economy, marked by the accelerated adhesion of technologies in, until recently, essentially human jobs. According to a recent study by the World Economic Forum (WEF), by 2022, 42% of tasks in 12 industries will be performed by machines and 27% of the labor market will be formed by new roles. According to experts, today's children and adolescents have a high chance of working in careers that have not even been created. Education needs to be aware of this right now.

On the other hand, we also face the persistence of conflicts and inequalities in the world, which will require future adults to have skills and abilities beyond technical knowledge. As the WEF itself points out, complex problem solving, critical thinking, creativity, emotional intelligence, and cooperation are among the most valued capabilities in the near future.

In this challenging context, we believe that private initiative can contribute to the public power and work in a coordinated and productive way in the construction of new educational models, capable of offering ways for this society in transition and, especially, to make sense in the kids´ lives. Over the past 13 years, NAVE (Advanced Educational Center) has been matured in an environment conducive to creativity and innovation through practices and methodologies that combine the components of the regular and technical base, and articulate human potential with digital opportunities. Because the program is built by many hands in two state schools, it is aware of the reality and demands of public schools, making it accessible to many more managers and teachers across the country.

Beyond all the technological infrastructure of NAVE schools, the program's most unique feature is the daily dedication of educators to transform learning, with approaches that transcend the boundaries of subject areas and place students at the center of the process, valuing their trajectories and strengthening their self-esteem as leaders in the transformation of this new world.

With great pride, we present the result of the work of the faculty and manager of the two NAVE schools in Rio and Recife between 2017 and 2018, in this publication, contributing new ideas and solutions for a school day that makes sense for kids today and in the future.

Enjoy the read!

PERNAMBUCO STATE DEPARTMENT OF EDUCATION

CREATIVITY, HUMANIZATION AND INNOVATION

FRED AMANCIO

PERNAMBUCO STATE EDUCATION AND SPORTS SECRETARY

To think of Cícero Dias Technical High School/NAVE Recife is to think of innovation in many ways: since it was built, it was built aiming at a welcoming and modern school, renaming its spaces with new meanings - for example, no longer "library" but "knowledge access space"; the proposal of full-time education during full-time hours, ensuring students more time for school activities and offering, in addition to the regular curriculum, technical education focused on the production of games and digital media; culminating, in what is for us, the greatest challenge and reward: youth leadership - one of the basic premises of interdimensional education, which runs at all 412 schools of the integral and professional network of the state of Pernambuco.

All of this comes from a collective of partners, where the Oi Futuro Institute is inserted, which from the beginning, has believed that a school with this standard would make a difference in the lives of the kids. In Pernambuco, the partnership has already provided training and preparation for the job market, with a focus on creative and digital economics, for more than 1,500 thousand kids. We also have a partnership with the Recife Center for Advanced Studies and Systems [C.E.S.A.R.], which has invested heavily in the technological training of our teachers and students. It is through this partnership and the implementation of courses that address hard work, for example, that our kids have the possibility to deepen their knowledge. Other institutions are also important partners. Going further, Electives, Scientific Initiation, Robotics, Gender Study Center and Facing Violence Against Women, etc. are also experienced in the Life and Entrepreneurship Project, - topics of an innovative curriculum aligned with

the best international pedagogical trends and that the process of isomorphism in education point out, substantiated by solid theoretical framework, as indispensable experiences for the formation of kids responsible for solutions, are creative, engaged by the improvement of society and highly qualified for work.

Thinking about what will be left for future generations, we understand that experiences such as the Cícero Dias Technical High School/NAVE Recife radiate our wishes for the future in the present, that we are building the path of a quality education that is bold in pedagogical innovations while adhering to the most basic human needs; and demonstrates the incredible potential that comes from partners and management committed to transforming public education for the better.
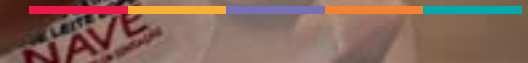
CÍCERO DIAS TECHNICAL HIGH SCHOOL/NAVE RECIFE

KNOWLEDGE IN MOTION

ALDINEIDE DE QUEIROZ

MANAGER

Continuity is an inherent feature of our school's pedagogical practice. We have developed the ability to systematize existing practices in our daily lives.

We have restructured the educational actions and are managing to organize our knowledge, facilitate access to all who show interest in getting to know our methodologies first hand.

With this culture of systematization and diffusion, we are able to influence Pernambuco´s state network positively when we propose to disseminate our practices in training as well as in publications.

I believe that when we take knowledge of innovative practices in multiple directions, we are providing new knowledge, new methodologies that will implement the pedagogical practice of education professionals that will directly influence the teaching-learning process of young students.

Therefore, we are increasingly motivated to continue the process of systematization and spreading our innovative practices.

RIO DE JANEIRO STATE DEPARTMENT OF EDUCATION

COLLABORATIVE CONSTRUCTION OF KNOWLEDGE

PEDRO FERNANDES

RIO DE JANEIRO STATE EDUCATION SECRETARY

Releasing a second publication like this is of great pride for the State Secretary of Education and for me, personally. It establishes a work of excellence within a very successful partnership!

The José Leite Lopes State High School/NAVE Rio provides students and teachers with a great laboratory for innovations in the teaching and learning process. In these pages, there is a collection of leadership, both with the kids and teachers. The systematization of practices by teachers allows the constructed knowledge to be propagated to other schools, and thus a great network of collaboration is established.

Working with new technologies with ethics and reflection makes the project even more innovative because it inserts the universe of the kids´, their social networks and experiences, their common interests and their desire to make themselves understood in this globalized world, into the classroom space.

Technical vocational education gains a lot from the activities in this book. It is not enough to be technical in Digital Game Programming or Multimedia, but there must be a humanized and conscious formation that can collaborate in the construction of young, cooperative and transformative entrepreneurship. There is a constantly evolving innovative market that can receive this public and thus broaden the horizons for the kids in Rio de Janeiro.

I very much hope that these practices can inspire other realities and that students and teachers can include technologies in their study and work contexts to ensure much more meaningful, autonomous and active learning.

JOSÉ LEITE LOPES STATE HIGH SCHOOL/NAVE RIO

PUSHING THE ENVELOPE

KARLA VERÔNICA
DIRECTOR

MARIA HELENA ROSO
JOINT MANAGING DIRECTOR

SILVANA ALMEIDA
JOINT MANAGING DIRECTOR

CARLOS TELES
JOINT MANAGING DIRECTOR

The NAVE program emerged from the proposal of the creation of a laboratory where innovative and humane educational practices could be developed, to be shared with the whole school system. In the 21st century, we can no longer see the teacher as the knowledge holder and sole person responsible for the learning process, but as the mediator for the kids to be leaders in their education. That they may share their experiences and acquire new knowledge by engaging in the creation of educational activities, becoming builders of their futures.

We cannot keep these methodologies within our school, because we understand that the diffusion of knowledge transforms and makes people rethink education. The objective of this publication is to encourage others to push the envelope, contributing to an innovative education in the face of the changes and needs of the contemporary world.

By choosing to develop collaborative methodologies, we will respect the different ways of learning of our students, providing an autonomous posture for society. The practices recorded here are part of the dynamics of our school, based on the creativity, autonomy and critical thinking of the students, characteristic of our institution.

C.E.S.A.R SCHOOL

INSPIRATIONAL JOURNEY FOR INNOVATIVE PEDAGOGICAL PRACTICES

WALQUIRIA CASTELO BRANCO LINS

CESAR SCHOOL EDUCATIONAL CONSULTANT

Since 2006, CESAR School has been contributing to Oi Futuro and the Education Departments of the States of Pernambuco and Rio de Janeiro for an innovative High School model. In this journey, many learning scenarios were created, experimented with, systematized and diffused through various media. This systematization path has enabled cycles of teacher planning improvements.

For the teacher, author of the practice, the process allows them to deepen reflections on the lessons learned, on the reasons for their didactic decisions, developing new skills. The spread of this repertoire nationwide inspires new approaches. Other educators can adapt the practices to other realities by creating new schemes for use in different contexts and subject areas. Thus, variations of the same practice and the original creation of others may arise. The faculty and students realize the advantages of using this resource in their learning spaces, engaging more and more in the planning and systematization of new experiences to be shared. It is a collective work and in-service training that values the teacher as a teacher, researcher and author and has the potential to foster new, more meaningful and innovative practices.

PLANETAPONTOCOM

INNOVATE, EXPERIMENT AND SPREAD

SILVANA GONTIJO
PLANETAPONTOCOM CEO

After twelve years of the NAVE program, this second publication consolidates a new level: the spread of successful new pedagogical practices, based on experiences developed in the schools in Recife and Rio.

For me and the planetapontocom team, who have assisted and participated from the very first steps of this initiative from Oi through the Oi Futuro Institute, being invited to write for this opening page is very exciting, a great responsibility and, above all, a honor.

Each year, methodological innovations culminated in transformative and effective experiences. Systematizing these practices to inspire other educators is the main purpose of this guide. The unexpected result was to increase the capacity of our teachers to plan their classes more and better, based on this systematization exercise. We are aware of this and invest more and more discretion in the education of our educators. The result is here and the content presented speaks for itself.

We know the challenges of redesigning the school and engaging our kids in the adventure of knowledge as opposed to the thousands of hyper-reality stimuli they are exposed to. The practices presented here can be validated by Merleau-Ponty, taking into account his work on the Phenomenology of Perception. "The perception that founds and inaugurates knowledge implies the meaning of the perceived, a condition of all associations apprehended as a whole."It is with this assertion that I would like to inspire every reader of this work in their quest for education that every child and every young Brazilian deserves: the one with the quality we dream of offering.
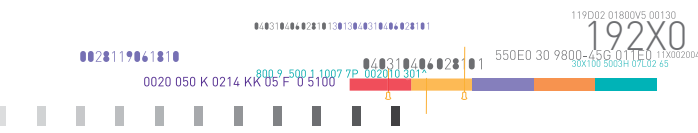
THE NAVE PROGRAM

An experimentation lab where educators and students find an environment and infrastructure that spurs innovation in the ways of teaching and learning. This is NAVE - Advanced Education Center, a high school program integrated with Vocational Education developed by Oi Futuro in partnership with the Pernambuco and Rio de Janeiro State Secretaries of Education.

The program was born in 2006 in Pernambuco with the Cícero Dias Technical High School and arrived in Rio in 2008 with the José Leite Lopes State High School. Its teachers create, experiment, validate and systematize pedagogical practices to inspire the construction of alternatives and learning models that relate to current challenges and demands, aligned with the guidelines of the new High School and the new Common National Core Curriculum.

To form leaders, autonomous and conscientious citizens capable of planning their life projects, the curriculum matrix is planned in an integrated, integral and global way, contributing so the students can experience an education that is in tune with their time.
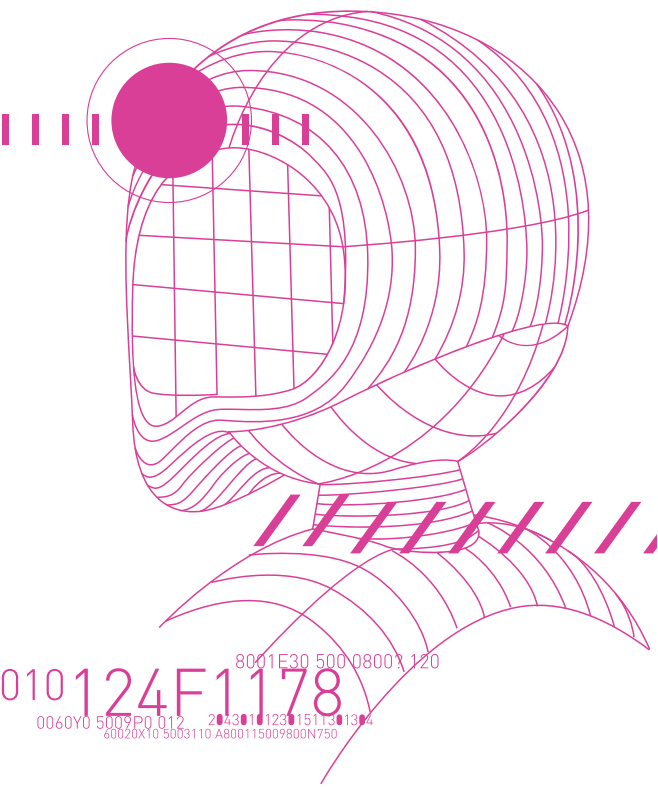
CURRICULAR MATRIX | NAVE Rio de Janeiro

COMMON NATIONAL CORE COMPONENTS

LANGUAGES AND THEIR TECHNOLOGIES
- PORTUGUESE LANGUAGE / LITERATURE
- ART
- PHYSICAL EDUCATION
- MANDATORY FOREIGN LANGUAGE
- OPTIONAL FOREIGN LANGUAGE

MATHEMATICS AND ITS TECHNOLOGIES
- MATHEMATICS

NATURAL SCIENCES AND THEIR TECHNOLOGIES
- BIOLOGY
- PHYSICS
- CHEMISTRY

HUMANITIES, SOCIAL SCIENCES AND THEIR TECHNOLOGIES
- HISTORY
- SOCIOLOGY
- GEOGRAPHY
- PHILOSOPHY

RELIGIOUS EDUCATION

	FIRST YEAR	SECOND YEAR	THIRD YEAR
PROGRAMMING COURSE	GAME CULTURE 1; PROGRAMMING LOGIC; INTEGRATED WORKSHOPS 1	GAME CULTURE 2; DIGITAL ARTIFACT PROGRAMMING 1; GAME-PROGRAMMING TECHNIQUES 1; INTEGRATED WORKSHOPS 2	DIGITAL ARTIFACT PROGRAMMING 2; GAME-PROGRAMMING TECHNIQUES 2; INTEGRATED WORKSHOPS 3
MULTIMEDIA COURSE	GAME CULTURE 1; INTRODUCTION TO DIGITAL MEDIA PRODUCTION; INTEGRATED WORKSHOPS 1	INTERACTION DESIGN; ANIMATION AND VIDEO PRODUCTION; INTEGRATED WORKSHOPS 2	INTERACTIVE MEDIA; 3D MEDIA PRODUCTION; INTEGRATED WORKSHOPS 3
SCREENWRITING COURSE	DIGITAL CULTURE; INTRODUCTION TO DIGITAL MEDIA; TEXT FOR NEW MEDIA; INTEGRATED WORKSHOPS 1	SCREENWRITING CREATION 1; DIGITAL NARRATIVES AND RESEARCH 1; VISUAL NARRATIVES; DESIGN AND PRODUCTION 1; INTEGRATED WORKSHOPS 2	CREATION OF SCRIPTS 2; DIGITAL NARRATIVES AND RESEARCH 2; MULTIMEDIA INTERFACES; CONTENT DESIGN; INTEGRATED WORKSHOPS 3

CURRICULAR MATRIX | NAVE Recife

COMMON NATIONAL CORE COMPONENTS

LANGUAGES AND THEIR TECHNOLOGIES

PORTUGUESE LANGUAGE

PHYSICAL EDUCATION

ART

MATHEMATICS AND ITS TECHNOLOGIES

MATHEMATICS

NATURAL SCIENCES AND THEIR TECHNOLOGIES

BIOLOGY

PHYSICS

CHEMISTRY

HUMANITIES, SOCIAL SCIENCES AND THEIR TECHNOLOGIES

SOCIOLOGY

GEOGRAPHY

PHILOSOPHY

ELECTIVES

ENGLISH

	FIRST YEAR				SECOND YEAR					THIRD YEAR				
PROGRAMMING COURSE	DIGITAL GAME CULTURE	DIGITAL WORLD CULTURE	PROGRAMMING LOGIC	INTEGRATING PROJECT 1	GAME-PROGRAMMING 1	DIGITAL ARTIFACT PROGRAMMING 1	ENTREPRENEURSHIP AND INNOVATION	ELECTIVE 1	INTEGRATOR PROJECT 2	GAME-PROGRAMMING 2	DIGITAL ARTIFACT PROGRAMMING 2	PROFESSIONAL ETHICS AND APPLIED LEGISLATION		INTEGRATOR PROJECT 3
MULTIMEDIA COURSE	DIGITAL GAME CULTURE	DIGITAL WORLD CULTURE	DIGITAL GAME ART	INTEGRATOR PROJECT 1	STATIC IMAGING PRODUCTION 1	MOTION IMAGING PRODUCTION 1	ENTREPRENEURSHIP AND INNOVATION	ELECTIVE 1	INTEGRATOR PROJECT 2	STATIC IMAGING PRODUCTION 2	MOTION IMAGING PRODUCTION 2	PROFESSIONAL ETHICS AND APPLIED LEGISLATION	ELECTIVE 1	INTEGRATOR PROJECT 3

SUMMARY

HOW TO USE IT

The first page of each teaching practice provides an overview of the activity, icons and keywords that help identify reading interests.

Identify activity related topics

Read an overview of the activity

CHAPTER 1 > A FAMILY BECOMES A TREE   45

A FAMILY BECOMES A TREE

KEYWORDS

#HEREDITY
#FAMILY
#GENEALOGY

AUTHOR
EDJA COSTA

WHAT IS IT?

Students create family trees from their families and investigate inherited diseases that span generations of their relatives. Contact with genetic ties brings kids closer to stories about life and the imaginary of their families, which enables the development of self-knowledge, the construction of identities and the appreciation of diversity.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

SELF-AWARENESS AND SELF-CARE

KNOWLEDGE

ARGUMENTATION

Identify Subject Areas and Curriculum components in which the activity was conducted

Identify audiences with which the activity can be performed

Identify BNCC skills that can be developed through the activity

ÁREAS DO CONHECIMENTO

LINGUAGENS E SUAS TECNOLOGIAS

CIENCIAS HUMANAS E SOCIAIS APLICADAS

MATEMÁTICA E SUAS TECNOLOGIAS

CIENCIAS DA NATUREZA E SUAS TECNOLOGIAS

COMPONENTES CURRICULARES

ABC

LÍNGUA PORTUGUESA

HISTÓRIA

MATEMÁTICA

FÍSICA

ARTE

SOCIOLOGIA

QUÍMICA

EDUCAÇÃO FÍSICA

GEOGRAFIA

BIOLOGIA

LÍNGUA ESTRANGEIRA

FILOSOFIA

MODALIDADE

EDUCAÇÃO PROFISSIONAL E TECNOLÓGICA

CURSOS

PROGRAMAÇÃO

MULTIMÍDIA

ROTEIRO

PÚBLICO-ALVO

ENSINO FUNDAMENTAL

ENSINO MÉDIO

EDUCAÇÃO DE JOVENS E ADULTOS

With these icons, it is possible to locate the **subject areas, curriculum components** and **courses** of the **Professional and Technological Education modality**, and the **audiences** in which the practice was or could be applied.

BNCC SKILLS

In each practice, we indicate three general skills of the Common National Core Curriculum that can be developed with this accomplishment.

KNOWLEDGE

Value and use knowledge about the physical, social, cultural and digital world to understand and explain reality.

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

Investigate causes, elaborate and test hypotheses, formulate and solve problems with criticality and creativity.

CULTURAL REPERTORY

value, enjoy and participate in various practices and artistic and cultural manifestations.

COMMUNICATION

Expressing and sharing information, feelings and producing meanings that lead to mutual understanding using different languages.

DIGITAL CULTURE

Understand, use and create digital technologies in a critical, meaningful and ethical way to play a leading role and authorship.

WORK AND LIFE PROJECT

Understanding the world of work and making choices aligned with citizenship and their life project with freedom and criticality.

ARGUMENTATION

Arguing on facts, data, and reliable information to formulate, negotiate, and defend common ideas, points of view, and decisions.

SELF-KNOWLEDGE AND SELF-CARE

To know each other, to understand each other in human diversity and to appreciate and recognize one's own emotions and those of others.

EMPATHY AND COOPERATION

Exercising empathy and cooperation, respecting and promoting respect for others and human rights without prejudice.

RESPONSIBILITY AND CITIZENSHIP

Act personally and collectively with autonomy, responsibility, resilience and based on principles of citizenship.

CHAPTER 1

SCHOOL IS LIFE

SCHOOL IS LIFE

From building your family tree to projecting your professional future, you are invited to reflect on your life as part of your complete learning and development process. With the challenge of forming critical and self-critical individuals, pedagogical practices combine young people's trajectories, identities and references with formal scientific and technical knowledge. In this chapter, among other ways, educators make room for the class to customize the lesson plan using their own context; using portraits to stimulate identity reflection; and encourage reading reports to evaluate professional possibilities.

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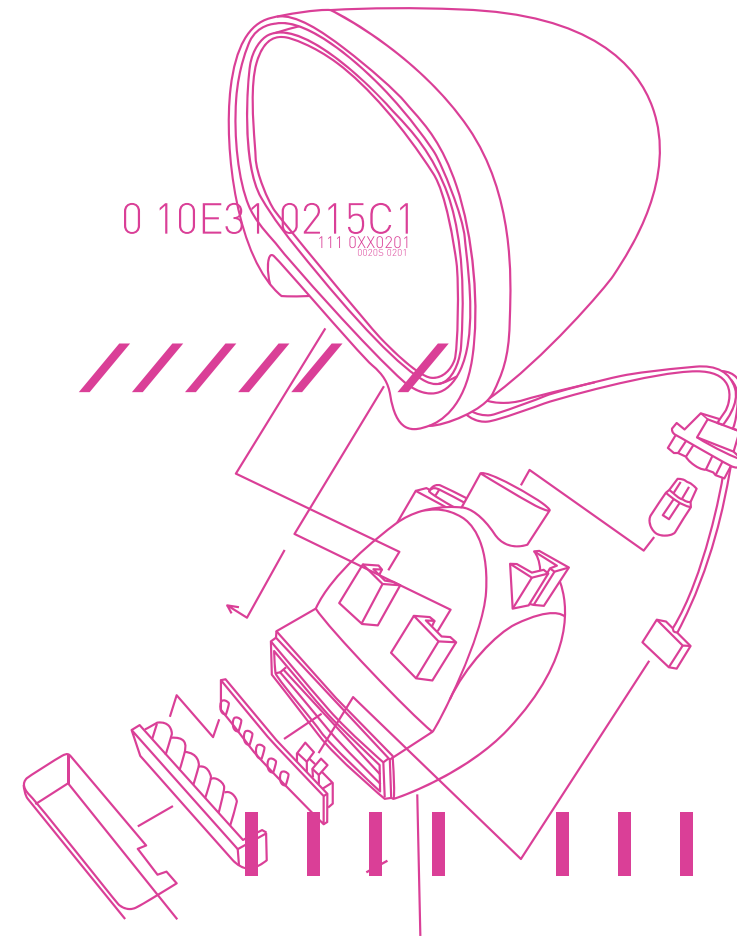
LIFEFLOW

KEYWORDS

#FLOWCHART
#PLANNING
#PROCESS

AUTHORS

JOSÉ AUGUSTO MENDES
BÁRBARA SOARES

WHAT IS IT?

Students are invited to reflect on their daily activities, seeking to identify projects, actions, routines or tasks that they wish to improve or organize better. These demands are transformed into flowcharts, enabling the development of various skills such as self-knowledge and self-management, communication and problem solving.

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

PROGRAMMING

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

COMMUNICATION

RESPONSIBILITY AND CITIZENSHIP

WHY DO IT?

The flowchart is a visual representation of processes involving a series of actions, used to facilitate task understanding and problem solving. By producing a flowchart, it is possible to identify bottlenecks, delays, inefficiencies and waste, which facilitates learning about the process represented, showing the responsibilities related to it. Although flowcharts are more common in companies and organizations, teachers can make comparisons that encourage this tool to be used by students to reflect on their school and personal life. In addition, it helps to stimulate thinking skills through images and not just words, promoting the expansion of kids' repertoire. The practice is adaptable to various subjects and school activities, such as the party organization and competitions.

✂ RESOURCES

- For manual flowcharts: cardstock, colored paper, pencils, erasers, colored pens, glue and scissors.
- For digital flowcharts: online tools like Lucidchart[1] or PowerPoint

🕐 CLASS TIME

- Three 50-minute classes

1. Lucidchart
[bit.ly/luchart]

HOW TO DO IT?

In the planning stage, it is necessary to think about the chain of activities, the time and gather the necessary materials and technical resources.

1 The activity begins with an explanation of what flowcharts are, how and why they are used. For kids to really understand what this is about, a very simple and traditional example can be used that represents the feeding process starting with the moment we begin to feel hungry. Teachers clarify that graphical representations should be well explored as information. And they demonstrate that, in the example of the hunger flowchart, the rectangles with rounded corners identify the beginning and end of the process; the diamond identifies the questions and alternatives; the arrows identify the path,

the direction of the flow; and the rectangles indicate the actions and activities that must be performed.

HUNGER

IS THERE ANY FOOD? — YES → NOT HUNGRY ANYMORE

NO

BUY FOOD

NOT HUNGRY ANYMORE
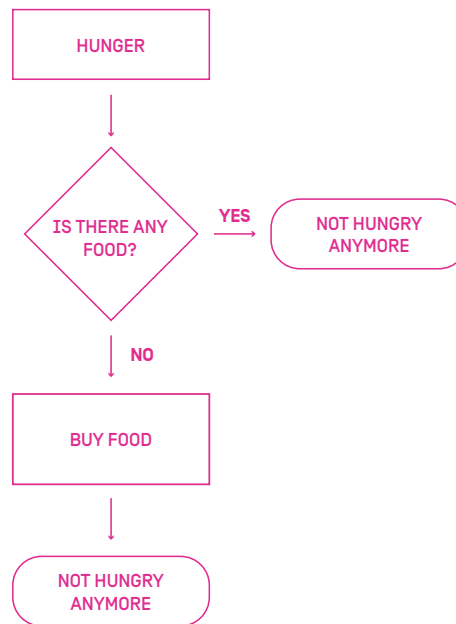
2 After the concept of the flowchart is understood in essence, teachers explore the various possibilities of organizing graphic representation with the students. The idea is to encourage them to glimpse the breadth of possibilities of visual creation. For this, you are invited to visit the site **Information is beautiful**[2], by English visual artist David McCandless.

3 For the next step, the kids are organized in pairs. Each pair will talk and seek to identify, academic or personal, projects they want to perform or routines and actions that they want to perform better in their life. Each student identifies their demand for process organization, but their colleague helps

them to reflect on their questions. During this stage, the teacher closely monitors, helping the pairs to explore all possibilities. Once everyone knows what everyday project or action they want to do (or improve self-management), they are invited to turn this demand into a flowchart.

4 Teachers guide the kids to begin creating their flowchart by detailing all aspects related to the accomplishment of the task or project. The idea is to record everything that comes to mind, creating a list of process steps and results. With this list in hand, students are invited to create a sketch of the flowchart on a sheet of paper, using as much of the information listed as possible. At this point,

the goal is to focus on creating the flow of actions. The interest is not in the graphic representation yet. It is a good idea to work on this sketch using pencils, as you may need to erase the sketches several times.

5 After sketching, teachers request that each student further develop their initial proposal, seeking to synthesize and improve the flow of actions. After this synthesis exercise, it is time to focus on the graphic representation. The kids are encouraged to be very creative, creating ludic and fun representations. Each can choose whether to make their flowchart digital or on paper. For those who choose the digital version, virtual tools are presented that can help with the task,

2. Information is beautiful
[bit.ly/infobeau]

such as the Canva tool. **Learn how to create flowcharts using it here**. Those who work on paper also need to invest in the aesthetic creation of graphic representations. Teachers monitor the work of the pairs and can suggest changes and propose solutions.

6 At the end, each kids presents their flowchart to the class. In addition to talking about their creation process, they also reveal what this production taught them about their academic or personal life, relating the activity to the development of self-knowledge and self-management. This final presentation is an important part of the activity as it allows the teacher to evaluate learning and skill development.

EVALUATION

In addition to evaluating the teachings of the creation and use of flowcharts, teachers can also analyze the development of transversal skills such as engagement, creative process, organization, argumentation, and communication.

RESULTS

Despite being a short activity, the result was very positive and significant. The kids were involved in the elaboration of flowcharts, understanding the functionalities of the tool and starting to use it in other contexts than just at school. Many have identified their difficulties in organizing tasks, thoughts, and projects. They reported that by creating flowcharts, they became more aware of the challenges related to time management, finding ways to overcome them and plan more efficiently. The students were very engaged in the production, collaborating with their colleagues in the pair work.

LEARN MORE

How to create flowcharts with the Canva tool
[http://bit.ly/canvaflu]
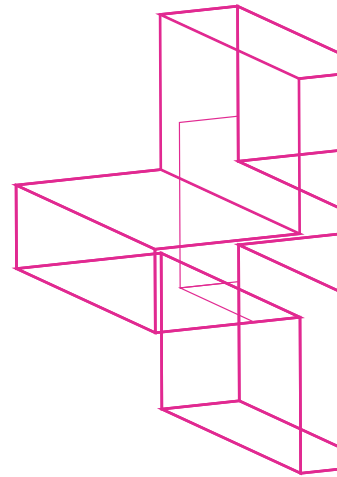
PHOTO BOOTH

KEYWORDS

#PHOTOGRAPHY
#TECHNOLOGY
#PORTRAIT

AUTHOR
PAULA SCARABELOT

WHAT IS IT?

An invitation to develop self-expression through photography. Students take their portraits with cell phone cameras using the aesthetics of an old instant photo booth. In this exercise, they are encouraged to work on visual creativity with different registration and editing concepts from those most common in their daily lives.

MODALITY

PROFESSIONAL AND
TECHNOLOGICAL
EDUCATIO

COURSE

MULTIMEDIA

TARGET AUDIENCE

HIGH SCHOOL

ADULT
LEARNING

SKILLS

CULTURAL
REPERTORY

DIGITAL
CULTURE

SELF-KNOWLEDGE
AND SELF-CARE

WHY DO IT?

The popularization of digital photography has been changing our relationship with the image and giving an immediate and disposable character to photographic production, often focused exclusively on social media publishing. By experiencing a different way of portraying themselves, paying attention to symbolic elements, the kids broaden their perceptions about photography, recognizing new meanings that can be transmitted. The experience strengthens students' sensitivity to their visual repertoire and allows them to take ownership of various techniques for working with images. In addition, it mobilizes reflections on identity, since photography editing itself triggers self-assessment and self-knowledge processes. The exercise also provides discussions about self-image and self-esteem. It is a versatile practice and can be adapted to various educational contexts.

RESOURCES

- Red curtain or fabric to simulate the environment of a booth
- Smartphones with a camera
- Computers with internet access (one computer for up to four students)
- Photopea[1] image editing software or alternative image editing software: Canva[2] virtual platform, Photoshop Mix mobile app, Autodesk Pixlr mobile app
- Multimedia projector

CLASS TIME

- Eight 50-minute classes

1. Photopea
[http://bit.ly/photope]

2. Canva
[http://bit.ly/canvv]

HOW TO DO IT?

1 At first, the teacher and the students discuss photography and its use in digital media. The kids are encouraged to think about what makes us take self-portraits - the famous *selfies* - how much they expose themselves through these social media images and how often they use their cell phone cameras in a day. They are then mobilized to reflect on the concept of a portrait before the portable digital camera. The teacher assists in this reflection by building a timeline in which features and information about the art of taking portraits are recorded, from painting to amateur cameras, to elements that

helped popularize portraits, such as afghan box camera photographers. At this point, the **photo booths** [3] and the instant photo cards they printed are presented, along with examples of people, including celebrities, who used this feature as a means of self-expression and fun decades ago. Concepts present in portrait photography techniques are also introduced.

2 In the second stage, students are stimulated to participate in a photo session in which each one will have portrait taken. For this, a booth simulation is set up, with a red curtain (or fabric) as a

3. Photo booths
(http://bit.ly/cabifot)

backdrop. Make sure to choose a location with good natural light or to provide special artificial lighting. The kids are encouraged to participate creatively and make portraits in pairs to capture the expression and feelings of their peers. They will have to generate three photo cards, two with sequences of three images and one with a sequence of four. The cards with sequences of three photos must be made with only one student in the scene, who should direct their colleague on how to produce the images. The sequences of four photos, in turn, must be produced in pairs, with both in the scene. And the two must reach consensus on the images. These sequences should be guided by themes that may relate to different feelings (such as reacting to a surprise test/starting vacation/class on Monday, for example). It is important to guide them by highlighting the elements

worked out in the previous class and the creative use of portrait techniques, as well as encouraging different experiences from their place of comfort.

3 In the next step, the students work on editing the photographs. They must edit their images in ways that manipulate expressive features, emphasizing the themes they have tried to express in that record - enhancing the look, changing the contrast of colors and light, or converting the image to black and white, among other possibilities. It is a good idea for the teacher to guide how certain manipulations in the image can convey different sensations. The use of black and white tones, for example, gives photography more drama, while pink and yellow tones refer to old things. After editing, the portraits are placed in a

standard template, similar to photo booth cards. This template can be created on the Canva website[4] (see **Tutorial**).

4 In the last step, all the cards with the sequences of images forming author narratives are shared with the class. A multimedia projector can be used, if available. The kids are invited to share their impressions and to comment on what they have tried to convey, both those who modeled and those who took the photographs. The teacher can support this mediation by asking questions to each pair: what are the intentions behind the photo presentations? Could they have been done another way? Did the environment and the

other students influence the portrait? What is the difference between this form of portrait and a selfie taken in everyday life? What emotions were conveyed in these images?

4. Tutorial
[http://bit.ly/tutorialcv]

EVALUATION

Throughout the process, the teacher analyzes the active participation of students in performing all stages and activities. The work of image editing is evaluated, taking into account criteria such as creativity, aesthetic and expressive elements. No specific aesthetic results were shown, to encourage experimentation.

RESULTS

The students became interested in deeper photography concepts when they understood their value. They were encouraged to learn more about how old cameras were used and their possibilities. This contact changed the relationship of some with the digital environment, allowing them to explore aesthetic and expressive resources more deeply. Upon learning about other photographic record references, the kids began to review their patterns of image consumption and their use of time. The activity really engaged the class. It was interesting to note how involvement was developing throughout the process. Some started out very shy and expressionless, almost avoiding participation. Throughout the progress, they opened up to the experience and interacted a lot. The exercise also engaged a resignification of self-image. Some sought to highlight distinctive features from those that are already striking in the classroom, while others reaffirmed, in their own way, their titles by which they are known among their peers. The narrative diversity produced from photographic cards created powerful reflections, contributing to self-knowledge.

LEARN MORE

Video photography tips: how to take simple and perfect self-portraits
[http://bit.ly/dicafot]

Video 7 tips for professional photos with your cellphone
[http://bit.ly/7dicafot]

Video Beauty photography tips with a cellphone camera
[http://bit.ly/fotbela]
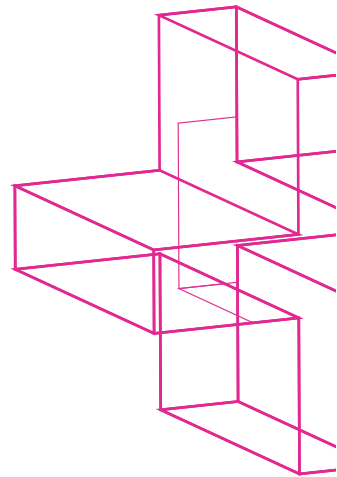
A FAMILY BECOMES A TREE

KEYWORDS

#HEREDITY
#FAMILY
#GENEALOGY

AUTHOR
EDJA COSTA

WHAT IS IT?

Students create family trees from their families and investigate inherited diseases that span generations of their relatives. Contact with genetic ties brings kids closer to stories about life and the imaginary of their families, which enables the development of self-knowledge, the construction of identities and the appreciation of diversity.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

SELF-AWARENESS AND SELF-CARE

KNOWLEDGE

ARGUMENTATION

WHY DO IT?

The genogram (family tree) is a traditional curriculum content in high school biology courses, but it does not always gain relevance and space in the classroom and is often superficially addressed. In general, students are unaware of kinship classification among individuals in the same family and have difficulty understanding the terms and types of associations that connect them. This activity ensures the appropriation of fundamental knowledge for deepening the theme of heredity and other biology contents that are based on this theme. By experiencing the construction of their own family trees in order to investigate the inherited diseases present in their families, the kids come into contact with this content in a contextualized way, starting from their realities. This is critical to achieving meaningful learning. The exercise also becomes an opportunity for everyone to learn more about their history, habits and genetic trends, engaging the class a great deal by enabling everyone to reflect on who they are and their own health.

RESOURCES

- Computer
- Multimedia projector
- Whiteboard
- A4 size legal paper
- Printer
- Pencils, rulers, scissors and tape
- Binding service

CLASS TIME

- 15 minutes of each class during two months

HOW TO DO IT?

1 The teacher starts with lectures on genetic, congenital and hereditary diseases, highlighting the importance of knowing the differences between them. Classes are followed by explanations of genealogy; Students learn about the international symbols and learn how to interpret them.

2 The next step is to invite the kids to map hereditary diseases with their families, guided by a document that relates the most common diseases with hereditary burdens. The mapping begins with maternal and paternal grandparents and ends with their own generation, or may even extend to the generation of their nephews or children, if they have them. During the process, students can discover manifestations of diseases not yet covered

in the reference document and should record as much information as possible related to their findings.

3 The mapping work goes on for approximately two consecutive weeks. During this period, the teacher reserves moments of individual monitoring, clarifying doubts and guiding the students.

4 With the research and records on both families, the second step of the activity begins: creating family trees and applying genetic knowledge in relation to the family data collected. Students are advised to create a family tree for their paternal family and another for their maternal family. Trees are built on one or more A4 sheets individually and, at the

SYMBOLISM USED IN CONSTRUCTING A GENOGRAM

= MAN

= WOMAN

= UNDEFINED SEX

= MARRIAGE

= CONSANGUINEOUS MARRIAGE

= PARENTS

= SIBLINGS

= FAMILY

= IDENTICAL TWINS

= FRATERNAL TWINS
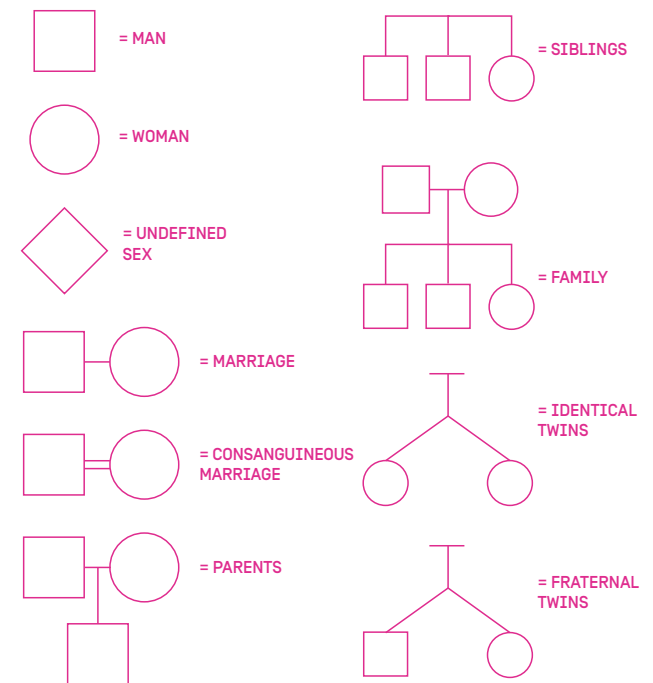
end, are **interconnected**[1]. It is important for the teacher to direct students to build their trees so that when they are joined, they become one. Thus, the design of the two must follow the same pattern, have the same size and consider the alignment between the parts. To help, the teacher can offer family tree models for reference.

5 This whole study is organized in a binder with a cover, index of the symbolism used, description of some hereditary diseases, the complete genogram and the table with hereditary factors of each family. Thus, the material

1. For details on creating genograms, visit [http://bit.ly/familiaarvore1]

becomes a production of student knowledge about their own family history.

6 At the end, the teacher checks with the class which were the five or six diseases most frequently found in the research. They should become themes for the kids to prepare a detailed presentation on each of them in groups, clarifying their characteristics and highlighting how they are associated with heredity and lifestyle. This is a time of appropriation of results, but also an opportunity to consolidate knowledge in genetics and congenital and hereditary diseases. The teacher also mobilizes students to reflect on the process and other outcomes of the experience, especially in relationships with their own family.

EVALUATION

The teacher collects data for evaluation throughout the process of building family trees. To grade, it takes the correctness of the data, the interest and the organization, as well as the aesthetics and presentation of each genogram into account.

RESULTS

In addition to learning about hereditary diseases in an applied and contextualized way, young people began to reflect on their prevention, in favor of a better quality of life and aging. This made them use their family trees as a relevant piece of data for changes in habit. Another very significant point was the development of self-knowledge from research on family members. The students' lack of information about their own family history when they started the process was noticeable. Along the way, however, they appropriated their genetic history and different generations of family members. This approach young people had with some family members, even, had a positive impact on their relationship. They reported that they came to respect the life history of some relatives more and identified with others they did not know so well. Finally, the significant development of collaboration between students from the same class and from different classes in sharing information and discoveries about genetics is worth highlighting.

LEARN MORE

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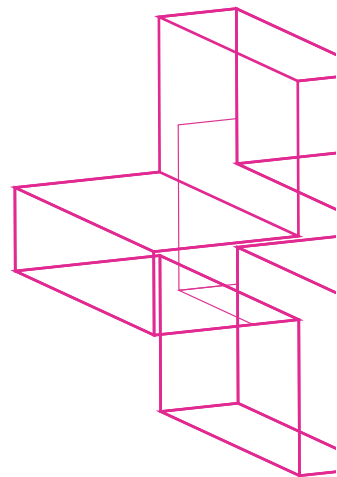
TALKING WITH THE FUTURE

KEYWORDS

#JOURNALISTIC_GENRES
#WORLD_OF_WORK
#LIFE_PROJECT

AUTHOR
MÔNICA D'ALMENERY

WHAT IS IT?

Kids study journalistic genres while learning about the world of work by identifying careers with which they have affinity. The activity enables students to develop their critical thinking, argumentation and self-knowledge, helping them in choosing their future choices.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE LANGUAGE

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

COMMUNICATION

WORK AND LIFE PROJECT

SELF-KNOWLEDGE AND SELF-CARE

WHY DO IT?

The initiative bets on the importance of creating spaces for students to research about their professional interests and the world of work since the beginning of High School. Lack of goals or clarity about their interests is a factor that often discourages young people from pursuing their studies. And knowing more about careers can help them give meaning to their school career. Written language is worked on throughout the process, focusing on acquiring a new vocabulary, especially because technical terms are used in constructing the interview. This activity was developed with the 1st year of high school, but can be applied in later years.

RESOURCES

- Computer with internet access
- Cellphone camera
- Paper and pens
- Dictionary
- Access to **Vocational Testing**[1] **website**

CLASS TIME

- 10 50-minute classes

1. Vocational Testing

[http://bit.ly/tesvoc]

HOW TO DO IT?

1 The activity begins with classes on the journalistic genre. The teacher presents characteristics of the various types of journalism texts, such as interview, reporting, chronicle, editorial, among others. In addition, the teacher may also provide reference materials on how to produce them.

2 Students are then invited to a first classroom exercise practice. They organize themselves into pairs and interview their colleague about the future. At the end, each one writes a report with the collected data. The teacher reads the reports and, when necessary, makes suggestions for improvement.

3 After this first experience, young people are invited to prepare for a second report, but this time the theme is the world of work. The process begins with the completion of a vocational test. For this, the teacher proposes that students access the **Vocational Testing**[2]. Students take this test, which is free, and in the end write down all the professions that come up as a result. The teacher follows and guides this work, but does not influence the answers.

4 In the next step, each student researches the areas and professions resulting from their vocational test and chooses the profession that interests them the most, deepening their research on it. In this search for information, they are oriented to record their doubts and/or relevant aspects about the profession.

5 With this study completed, each kids makes a special report about the chosen profession. For this, they will interview a professional from that area. The teacher orients the class to ask ten questions for the interview. The interview is videotaped using cellphones. Students record a more complete version using all prepared questions, but are then invited to edit the material, choosing only the most meaningful excerpts. The video report cannot exceed five minutes.

6 The teacher also asks the students to produce the video content in text form. This exercise makes it possible to verify if the abilities and skills of the journalistic genre were developed. The course is concluded with the exhibition of the videos and the delivery of written productions.
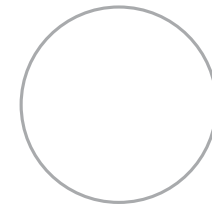
2. Vocational Testing
[http://bit.ly/tesvoc]

EVALUATION

The evaluation is performed during the course of classes. The teacher assigns grade by observing the participation and the evolution of each student´s learning about journalistic genres. They also take into account how the young people present video reports at the end of the journey.

RESULTS

During the course, some students who had difficulty communicating and socializing better integrated with the rest of the class and were able to express themselves more easily. Forming the questions was the most challenging aspect, mainly because it required the appropriation of journalistic techniques. But in general, the experience of interviewing professionals greatly stimulated young people; they even showed more openness to study other subject subjects. The activity met their interests because it allowed them to create their reports in a pleasurable, personalized way and respecting the expressive characteristics of each individual. The appropriation of the characteristics of the journalistic genre was total.

LEARN MORE

**Example of a student report
[http://bit.ly/exempvideo]**
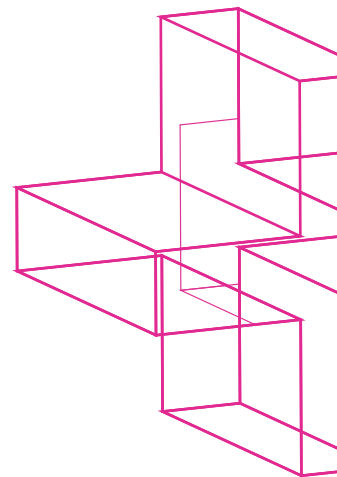
LIFE, VISUAL POETRY AND I

AUTHOR
RENATA BARCELLOS

WHAT IS IT?

An invitation to the creation of visual poems inspired by the work of writer and visual artist **Tchello d'Barros**. The exercise enables students to articulate their knowledge of the symbolist literary movement and the European avant-garde, while opening space for the expression of their subjectivities.

SUBJECT AREAS

LANGUAGES AND
THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE
LANGUAGE

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

CULTURAL
REPERTORY

COMMUNICATION

SELF-KNOWLEDGE
AND SELF-CARE

WHY DO IT?

According to Brazilian writer and poet Affonso Romano de Sant'Anna, poetry "sensitizes any human being. It is the speech of the soul, of feeling. And it needs to be cultivated". The didactic sequence is anchored in this understanding to propose that the reading, analysis and creation of poems mobilizes the student to establish an affective and intellectual relationship with the works. Contact with poetry, especially visual poetry, is a way of inviting the reader to the most varied possibilities of connection between thinking and feeling, inviting THEM to enjoy the text. This initiative uses reading and visual poetic creation to address curricular contents of the literature discipline and, at the same time, sharpen the creative senses of young people. Considering that education has the purpose of developing the individual in all its potentialities, the proposal also seeks to provide opportunities for students to express themselves and relate their artistic production with the experience of being young. Finally, it can also be said that the activity has the potential to broaden interest in reading and other aesthetic appreciation initiatives.

RESOURCES

- **Text**[1] with information and visual poetry from **Tchello d'Barros**[2]
- Smartphones with internet access
- Access to Facebook and WhatsApp (or similar apps)
- Legal size paper
- Pencils and pens
- Colored card stock and paperboard

CLASS TIME

- Six 50-minute classes

1. Text
[http://bit.ly/poesiavisu1]

2. Tchello d'Barros
[http://bit.ly/tchellob]

HOW TO DO IT?

Before you start working with students, you need to plan the time, provide all the resources, and create a private group for the class on Facebook and WhatsApp, or similar apps.

1 At the first meeting, the teacher gives a brief oral exposition about the Visual Poetry movement in Brazil and in the world. In this presentation, make correlations with the symbolist literary movement and European avant-garde, presenting its characteristics and a panorama since its inception. The teacher emphasizes the use of figures of sound, alliteration, assonance, onomatopoeia, puns, among other expressive resources. It also addresses its main themes: love, boredom, death, human spirituality... It also highlights some symbolist poets of the Portuguese Language, among them Eugênio de Castro (1869-1944) and Cruz e Souza (1861-1898) and literary movements such as Concretism.

2 Later, the class is taken to the school library and organized in pairs. The teacher asks everyone to join the previously created private group on the social network Facebook and WhatsApp. At this point, the educator posts the text with information and copies of the work of the poet Tchello d'Barros in the group (see Resources). Young people are invited to read the text and each pair chooses one of several visual poems presented

in the document. If the teacher does not have internet access or the ability to ask students to use their cell phones, they can share the printed text.

3 In the next step, the pairs analyze the chosen visual poem. Students should make a written record, relating the poem to the characteristics of the works of the literary movement of Symbolism (if they are from 2nd grade) and European avant-garde (if they are from 3rd grade). After textual production, the pairs are challenged to create their own visual poem. This authorial creation must dialogue with the analyzed poem and the author's work.

4 After producing the poem, students are invited to photograph it and share it in the private group on Facebook and WhatsApp. The teacher gives everyone time to see their colleagues' creations and freely comment. The idea is to create an exciting atmosphere among young people, encouraged to talk about the work and also about themselves, what they felt and how the author's poems affected them. This is where the course culminates, as one of the main objectives of the activity is to make room for young people to get to know each other and reflect on their issues, in articulation with the curricular contents of the subject of Literature. Following these freer exchanges, the teacher encourages students to relate peer production to literary knowledge learned and to identify other learning with experience. In closing, everyone prepares frames for their visual poems, with card stock and paperboard, and set up an exhibition in the library.

> **FUN FACT**

During the experience, there was one more step after the exhibition was organized: the poet Tchello d'Barros visited the school to enjoy the students' production and talk with them. The artist described the poems produced in dialogue with his work as provocative, sensitive and creative. While talking with young people, the author offered to undertake new actions in partnership with them in the future.

EVALUATION

The teacher assigns grade, evaluating the participation and interaction of kids throughout the activity, in addition to the written record with the analysis of the author's work and the visual poem created.

RESULTS

Contact with the visual poetic works positively surprised the kids. In the most part, it was the first time they had had contact with this kind of artistic manifestation and were delighted. The aesthetic appreciation of the works activity has already greatly enhanced the creative process of the students. And when the analysis exercise was deepened, they advanced in understanding the intrinsic characteristics of the symbolist works and European avant-garde and were motivated to identify the theme worked by the author in each one. The development of creativity can be highlighted as an effective result of the process of creating their poetic works. They produced inspiring readings. Thus, it can be said that the practice allows the literary study to be carried out in a pleasurable way and one that is connected with the life and experience of each student. In addition, the option of having the library experience encourages the appropriation of this space and the interaction with various books.

LEARN MORE

Tchello d'Barros's Facebook Profile
[http://bit.ly/tchellobf]

Poemas visuais de Tchello d'Barros e as releituras elaboradas pelos estudantes
[http://bit.ly/poesiavisu2]
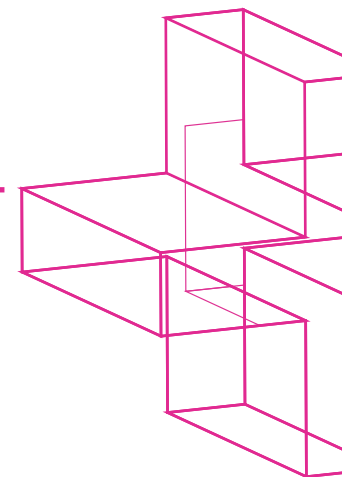
WHAT DO I WANT TO LEARN?

KEYWORDS

#AUTONOMY
#LEADING
#CURRICULUM_CUSTOMIZATION

AUTHOR
SARAH NERY

WHAT IS IT?

The possibility for students to present autonomous learning projects when the proposal made by the teacher does not fully address their interests. The kids can choose what they want to learn, how they would like to learn, and how they would evaluate this learning at the end of a cycle

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

SCREENWRITING

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

WORK AND LIFE PROJECT

RESPONSIBILITY AND CITIZENSHIP

WHY DO IT?

At some point, every educator is faced with students who show disinterest in a proposed educational path. Engaging the kids to learn certain content or to perform certain activities often becomes a problem. This initiative was developed to respond to this challenge. The ability to learn autonomously without the centrality of the teacher, following one's own interests and thinking about methods to achieve one's goals is a trend in 21st century education. Curriculum personalization, which can be done more or less openly, depending on each case, is a strategy that enables the school to contemplate the interest of students and educators for more lively and meaningful learning. The invitation to choose the content and the proposal of the learning method and the form of evaluation encourages kids to reflect on ways to study. It teaches "learning to learn" and encourages the kids to lead, as well as avoiding coercion and punishment for those who refuse to perform tasks. The student becomes responsible for their own learning, while the teacher acts as a mediator and encourages knowledge

RESOURCES

- **Online form**[1] (or text editor or even pen and paper) to development learning proposals
- Materials, tools and instruments needed for the projects, which will be provided by the students

CLASS TIME

- All subject class times in bimonthly cycles

1. Online form

[http://bit.ly/2Zfev6d]

HOW TO DO IT?

1 First, the teacher presents a didactic path to address the contents of the subject and evaluates the students' reaction - if they liked it, if they need to provide adjustments. From this initial dialogue, they seek to argue in favor of the curriculum proposal, even though it includes adaptations suggested by the students.

2 Clf there is no consensus, instead of imposing that activity on the whole class, the teacher encourages those who are resistant to create an alternative learning path. The opportunity for personalization is offered even if it is a small group or even a single student. Thus, while the class will continue with the program initiated by the teacher, these kids must think about activities that they can perform autonomously. To do so, they are instructed to fill out a form and, through it, build their own path. The **form²** asks them to present what they would like to learn, how they would do it (with a lesson-by-lesson plan) and what evaluation criteria would be considered at the end of the process. This information is recorded in a file, which may be paper or digital (in a text document or online form), for monitoring and final evaluation by the teacher. Thus, the student assumes the responsibility to choose not to

2. Form
[http://bit.ly/2WOl3tl]

do the proposal and, therefore, needs to know justify their own choices, plan their actions and consider evaluative aspects.

3 From the justifications and planning presented by kids, the teacher can speak, propose paths and give suggestions, avoiding a total veto to the proposal and encouraging, through dialogue, that autonomous learning is really significant.

4 During the two months, the teacher follows the program they planned and improved with the contributions of the class. And, to accompany the autonomous students, establish periodic meetings with them in which they present the progress of their projects, making themselves available to answer questions and guide them. The idea is to act as a mediator or mentor.

Aprendizagem autônoma

Fiz esse formulário para quem não quiser participar da proposta do 2o bimestre de Narrativas Digitais e Pesquisa 2 (NDP2). A professora seguirá com a proposta do bimestre e cada estudante pode propor uma atividade própria que será apenas acompanhada pela professora e validada com a ajuda do coordenador do curso de Roteiro. A ideia é trabalhar a autonomia e a liberdade para aprender.

Nome

Gustavo [?] Lima Santos

O que você gostaria de fazer/aprender durante os tempos de NDP2?

[handwritten] coisas relacionadas ao técnico, para cada ficar imerso mesmo universo

Como você pretende fazer/aprender [...]
bimestre? (inicialmente, pode falar [...]
solicitarei um plano aula a aula)

Como você gostaria de ser avaliada(o)?

Each teacher must consider the time they will devote to this monitoring, without prejudice to their bimonthly planning.

5 At the end of the two-month period, or to the extent agreed upon, the final delivery will be assessed on a shared basis. In a conversation with the student, the teacher rescues the initial project, evaluating the process and the results obtained: did the student achieve what he/she initially proposed? Did you follow the original planning? Are you satisfied with your final product? What were the biggest and smallest difficulties? Based on the criteria provided, a grade or concept is reached, according to the policy of each school.

EVALUATION

In addition to the evaluation criteria determined by the kids themselves, the teacher also establishes their own: did the student know how to present a clear and coherent proposal? Did they know how to plan for everything to be viable? Did they follow the planning and know how to manage their time? Did they reach the end of the process with the results they had expected at the beginning? If they had difficulties to do it, were they able to overcome them on their own or did they ask for help? These and other criteria should be clearly stated, as well as the value assigned to each of them. At the end of each cycle, it is also important to evaluate the instrument: did the form contribute and/or need improvement? Have your items facilitated student organization? Did your format meet the demand presented? How can this process become even more potent and meaningful to everyone involved? Is it possible to improve the process in any way?

RESULTS

In this autonomous learning experience, the first visible result is the end of the conflict between teachers and students. Undoubtedly, it is not simple or easy for teachers to give up their plans. Neither for students to take the reins of their learning. But we realize that this can be very potent in bringing out motivation for knowledge, as well as stimulating the development of several important competences: responsibility, creativity, autonomy, self-care. The expected results already obtained from the first experiences bring out the mutual trust between student and teacher, the emphasis on learning connected to life and also an increase of happiness in the school environment.

LEARN MORE

FREIRE, Paulo. Pedagogia da autonomia: saberes necessários à prática educativa. São Paulo: Paz e Terra, 1996.
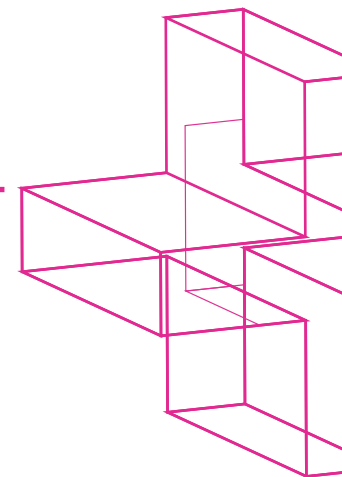
NO CLASS, PRODUCTION!

KEYWORDS

#EXPERIMENTING
#WORKING
#TEAM

AUTHORS
**ELIZABETH CALDAS
SARAH NERY
TIAGO DARDEAU**

WHAT IS IT?

Students and teachers become a team, working horizontally, simulating a content producer at school. Each school activity becomes an opportunity for the creation and realization of an authorial project, connecting the school with the interests of the kids.

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

SCREENWRITING

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

COMMUNICATION

WORK AND LIFE PROJECT

EMPATHY AND COOPERATION

WHY DO IT?

The contemporary world invites us to rethink the form and content of relations between teachers and students. Classroom space and time need other styles so that the knowledge process is alive, dynamic, practical and in tune with new ways of learning and open to the interests of the kids. From this point of view, the proposal to create a producer to replace the classes of the Screenwriting course promotes a series of changes in the relationship of the actors involved, as well as in the teaching-learning dynamic itself. Simulating the workspace within the school reality is a chance to unite the practices of a market that the kids will soon be part of. By adopting market methodologies - such as meeting agendas and minutes, client prospecting, alignment meetings, and project management - the classroom becomes a more horizontal space for collaboration that encourages students and fosters greater group engagement. For students it also opens the possibility of developing personal projects and related to social and cultural issues at school and out of it.

RESOURCES

- Computer with internet access

CLASS TIME

- Eight 50-minute classes

HOW TO DO IT?

1 The teacher begins by presenting the idea of exchanging the traditional classroom routine for a work routine, simulating the daily life of a multiplatform producer. At this point, they mobilize the kids to reflect and make choices about the method to be followed. And question: will we have leaders/bosses? Will we be one team or will we be divided by projects/roles? How are we going to get organized? Choices may vary according to the group profile, but it is important to maintain the principle that students and teachers will become co-workers from that point on.

2 With the initial proposal approved, all work together on the collective definition of the concept and format of the producer. Here, the teacher still needs to raise questions for the kids to formulate project guidelines: what is the mission and vision? What services do you offer? Which clients/projects would you like to serve? What are your internal procedures (meeting agendas and minutes, customer prospecting, reporting, etc.)? It is important at this stage to clearly define how registration will take place throughout the process. In this experience the multiplatform producer *Mais Conteúdo* was created. The idea of being multiplatform was to expand the possibilities of clients, as well as go to the Digital Media Screenwriting technical course meeting at the school.

3 The students decided that the producer could offer the following services:

- research - multiplatform content production and content production for digital media;
- planning - business plan and communication plan;
- content - audiovisual script, game script, application script, social media content and websites;
- production - of documentaries and video clips.

4 After conceptualization, the teacher and students work on the creation of the institutional materials necessary for the formalization of the production company, such as: name, visual identity, presentation and marketing texts.

5 The next step is to start the process of getting "clients" and/or create their own production initiatives. It is now time for the producer to being to act effectively. The teacher may work with students to design their own projects or the class may seek to identify demands for multimedia work around the school, in their neighborhoods or on their social networks. It is also possible to identify potential clients in the school itself, or propose some multimedia intervention project for the school community. It's time to open up to potential external and internal customers. In this case, we evaluate demands that have arrived and ideas that have emerged from the students themselves, teachers and direction.

6 The next step is focused on the definition of work routines and division of roles, organizing who is in the preproduction, production and postproduction tasks. The student and teacher team can be divided into fixed roles, always acting in the same roles, or can rotate through these roles as each new project begins. In the first model, the gain is in specialization in one area; In the second, young people can enjoy trying out different areas of production. At *Mais Conteúdo*, this division happened at the second stage of the path. The definitions of clients and projects accepted were collective, and from then on the class was divided

into projects and by pre-production, production and finalization tasks. Three work fronts were defined: the conclusion of a **documentary**[1] about the **Meeting of Favela - MOF**[2], annual graffiti event in Duque de Caxias; the finalization/assistance of various audiovisual productions and enrollment in the Rio Festival Generation 2018 Exhibition; and the conception and creation of a Memory Project for the Digital Media Screenwriting Course.

7 Once the work has been defined, the rest of the course is developed through periodic meetings to monitor and align projects. Ideally, they happen weekly, at the scheduled time for classes. The accountability and definition of roles and people is important in this stage, in a connection between the stages and teams. At these meetings, the teacher acts as a mediator, reminding students of the responsibilities of each role. The idea, however, is that, over time, students will advance in autonomy and each one will assume their responsibilities naturally.

8 In addition to this periodic follow-up, medium-term evaluation meetings are also held for correct answers and reordering pathways. These meetings may follow the school's bimonthly temporality or take place at the end of each project or project stage. A final report should be part of each completed work, containing all process steps and their documented and analyzed results. This step can be further complicated by the need to create a writing and reporting routine. The strategy in the case of *Mais Conteúdo* was a collective and shared minutes, completed at the time of each meeting, with project updates and their course of action.

1. Documentay about Meeting of Favela - MOF
[http://bit.ly/doctário]

2. Meeting of Favela
[http://bit.ly/mfavela]

EVALUATION

The evaluation is carried out continuously, in face-to-face meetings and during meetings. The teacher evaluates the bimonthly reports produced by the students, in which they present the activities performed and the results obtained. Aside from involvement, the development of responsibility, the technical quality and the adequacy to the formats of the productions performed are observed. The technical issues, in our case, are related to the skills that we want to be developed throughout the course, such as: appropriation of research processes, learning about the production stages and learning of script development. Analysis of student participation, project progress or completion, and customer feedback are also indicators that guide the evaluation of the initiative.

RESULTS

It was possible to get significant results throughout the experiment. The development of autonomy, creativity and problem-solving skills were very relevant. It is also important to highlight the strengthening of team collaboration, expressing mainly skills related to planning and the development of integrated tasks. The desire to undertake new projects was also strong at the end of the experience. During the creation and filming of the documentary about the Meeting of Favela - MOF graffiti event, the class faced numerous obstacles and practical and real difficulties. This opportunity to work outside the school walls has expanded the opportunities to relate more technical knowledge to cultural and social issues in the city. Three audiovisual productions of the students made through the production company *Mais Conteúdo* were selected for the Rio Festival Generation 2018 Exhibition.

LEARN MORE

Mostra Geração 2018
[http://bit.ly/mogera]

About student learning
with the producer
[http://bit.ly/aulaprodl]
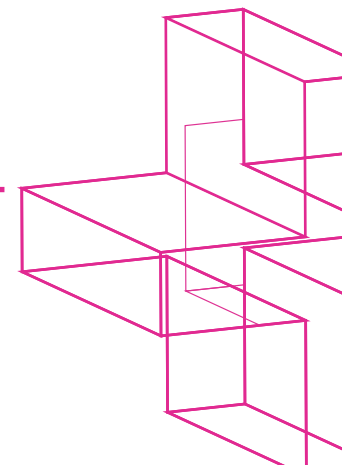
WELCOMING DAY

KEYWORDS

#WELCOME
#INTEGRATE
#KIDS_LEADING

AUTHORS
ROAN SARAIVA
SÂMARA CARVALHO

WHAT IS IT?

Welcoming initiative for the kids who first arrive at school. There are three days of creative activities focused on school presentation, information clarification, dream projection and integration among students. The welcoming course is planned and carried out by veteran students.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

APPLIED HUMANITIES AND SOCIAL SCIENCES

NATURAL SCIENCES AND THEIR TECHNOLOGIES

MATHEMATICS AND ITS TECHNOLOGIES

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

COMMUNICATION

RESPONSIBILITY AND CITIZENSHIP

EMPATHY AND COOPERATION

WHY DO IT?

The shift from Elementary School to High School itself is already a moment of transition in the life of any young person, which requires special attention from school teams. Upon entering the first year, students are exposed to a larger number of subjects and invited to act more autonomously in their studies. The full-time school needs strategies that ensure the best conditions for this adaptation. In the case of the NAVE Program, kids approach methodologies that encourage leading participation in their pedagogical trajectory, making them more integrated with school-related issues. Thus, investing in reception strategies generates fundamental results not only for this transition phase between schools, but for the three years of High School. Experiencing a welcoming moment in the early days will enable students to better understand how the school works, what is the guiding pedagogical project, what kind of learning is expected. When this welcoming is carried out by the kids already at school, the experience becomes even more engaging, increasing the sense of belonging of both the ones welcoming and the ones being welcomed.

RESOURCES

- Computers with internet access
- Multimedia projectors
- Speaker
- Stationery and office space decoration and as raw material for activities

CLASS TIME

- Three intensive days of activity

HOW TO DO IT?

1 At the end of the school year, a selection process is open for veteran students interested in acting as organizers to apply. There are 30 slots in total. It is a voluntary and interested parties are invited to submit their reasons for participating to welcome newcomers. This process usually creates a creative challenge for the presentation of one's interests. One year, for example, they were asked to record a short video of why they wanted to participate in organizing the event. Another, they synthesized their intentions in a photograph. In general, it is a well-contested selection. On average, two-thirds of students enroll and a team of five school staff, including teachers and managers, serves as the selection committee. This committee seeks to highlight a group that balances gender representation and diversity of skills among those enrolled. It also takes into account that it will be a time for them to have the opportunity to develop various skills; Thus, we seek to offer these vacancies to kids who have participated less in other school actions.

2 With the group of 30 volunteers selected, a collaborative planning process that lasts five days begins. The prep activity takes place over a few weeks of school holidays. The interval between meetings should be sufficient for the activities suggested by the group. This structuring path of planning experienced by the kids takes place according to the following steps:

- **Educating Guide[1]:** The planning exercise begins by reading the Educating Guide, a material that presents the school's concepts, values, guidelines, and rules. Alternatively, other school units

1. Education Guide
[http://bit.ly/acolh]

wishing to try the activity could propose reading excerpts from the Pedagogical Policy Project, or other similar documents. After reading, student volunteers are invited to start thinking about activities that can creatively and in a mobile way, translate content for kids going into their first year. A record of the first suggestions is made and the group commits to continue researching and seeking references for this planning until the next meeting. A closed group is created on a social network, so that young people can continue communicating, exchanging suggestions and materials.

- **Collaborative creation:** The next meeting is dedicated to sharing proposals for the welcoming event. Each kids who devised an activity introduces it and everyone collaborates, improving and testing the best way to perform it and the duration. At the end, everyone votes for the ones they find most interesting to integrate into the schedule. The day ends with the definition of the set of activities and a general theme for monitoring. The theme of the last issue was cartoons, but there have been others, such as sagas and games.

- **Defining the schedule:** the third day of planning is dedicated to finalizing the schedule of the three-day event. The volunteers first choose an integrative theme for the welcome. This theme guides all activities and is always related to concepts, values, methodologies and content that are common to

the school and of interest to kids. For example, one year, volunteers chose to approach technology as a theme. Others, they chose to talk about leading, games, series, sagas. Following the election of the event's overarching theme, students chronologically organize the entire schedule. This is the time to review the activities you have created, to order them, and to evaluate if there will be time for all of them.

- **Production:** the fourth day is dedicated to production. The volunteers think about the decoration of the school and list the material resources and equipment needed to carry out all the planned activities.

- **Organization of work teams:** These meetings are held a few days before the event, depending on what was planned and the type of decoration planned. Students are organized into teams, so that in each room there are four kids.

3 At the first meeting with the novice students, the organizing group proposes activities to introduce the school and its physical space and collect the expectations of those who are coming. On the second day, the activities invite beginners to think about the future, to dream, to make plans for the three years of high school. On the third day of reception, the activities are oriented for everyone to share stories and ideas and collaboratively create a final product that addresses some content from the Learner's Guide or the chosen text.

4 The welcome unfolds into other actions throughout high school, in partnership with the discipline of Philosophy (but can be partnered with other subjects). Upon arrival in the first year, young people are invited to see the school, introduce themselves and project their future. At the beginning of the second year, they start reflecting on where they are at. And in the third year, the invitation is to return to work on your life project, now reflecting where you want to go after High School is completed.

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EVALUATION

In the last hours of the third day of the event, a large circle is organized in which all kids are invited to talk and evaluate the experience, whose reflections can continue to be observed throughout the three years of High School.

RESULTS

The initiative to prepare a welcoming event for kids entering the first year of High School at the Cícero Dias Technical High School/NAVE Recife inspired several schools in the Pernambuco state school system. About 400 full-time schools currently host newcomers in the first three days of school. Each school customizes the initiative according to their interests, always prioritizing the participation of kids in leading the organization and conducting the event. At NAVE Recife, the results are very significant. The kids coming in feel valued and that their needs are supported. These three days are key to engaging and integrating new comers into the school routine. For students who volunteer to organize and host, the event also becomes an opportunity to develop various skills.
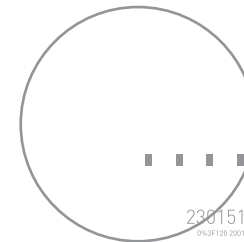
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CHAPTER 2

EXTRAORDINARY DIFFERENCES

EXTRAORDINARY DIFFERENCES

How to make the school more plural, embracing diversity and respecting the different ways and rhythms of learning? The activities gathered in this chapter demonstrate the pedagogical experimentation that moves teachers toward this objective. One proposes the use of design thinking tools to get the class to reflect on empathy. In another didactic sequence, the kids are inspired by prophet Gentileza [prophet of kindness] to develop transformative actions in the school community. These practices emphasize diversity based on recognizing differences; the perception of the extraordinary in what is customary, ratifying the role of students in building a truly inclusive school and society.

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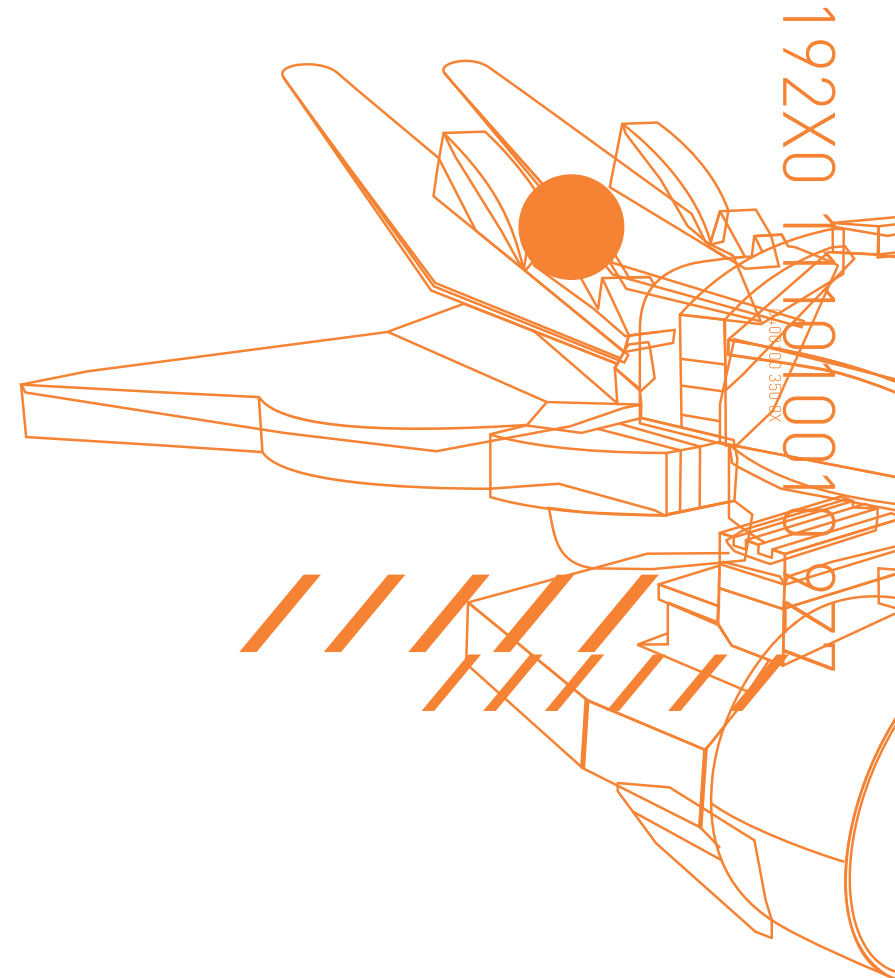
EMPATHY IN EVERYTHING

KEYWORDS

#EMPATHY
#COLLABORATION
#DESIGN_THINKING

AUTHOR
BÁRBARA SOARES

WHAT IS IT?

An activity that broadens the view of the concept of empathy from body experiments associated with the use of design thinking tools, stimulating a deeper reflection of the kids about the importance of exercising this skill in their lives.

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

COMMUNICATION

RESPONSIBILITY AND CITIZENSHIP

EMPATHY AND COOPERATION

WHY DO IT?

Empathy and cooperation are general skills proposed by the Common National Core Curriculum of Brazilian education. A didactic sequence that enables the kids to understand their importance for project design, at school and in other areas of life. The initiative invests in the understanding of the concept of empathy, to enable the development and application of these social and emotional skills by students. Through simple body exercises and the use of design thinking, they are led to discover what it means to put oneself in the other's place, the value of embracing, and valuing diversity as a human condition. The activity is primarily intended to enable the kids to understand how the development of empathy and cooperation can positively influence the quality of products and projects as they bring them closer to the public context for which the product or idea they are creating intended, especially influencing the conception and planning of creative actions or solutions.

RESOURCES

- Blindfolds
- Objects that can be used as obstacles
- Cardstock
- Adhesive notepads (such as Post-its)
- Empathy map[1] printed

CLASS TIME

- Four 50-minute classes

1. Empathy map
[http://bit.ly/emptia]

HOW TO DO IT?

1 The first activity is very similar to mime play and will enable students to experience difficulties similar to those of deaf and/or mute people to communicate. The proposal is as follows: with the class divided into pairs or threes, the teacher gives the name of a popular tale, a movie or a song. One of the team members has the mission to communicate the name of the work to others. However, for this, they cannot make any kind of sound with the mouth and the fists must be clenched.

2 The second experiment proposed is similar to the blind man´s buff game. This time, the class needs to be organized into threes. One kid is blindfolded and another hides an object and creates obstacles on the way, while the third is

responsible for guiding the blindfolded colleague only with their voice. The idea is that they experience the difficulty of a blind person to find objects or move through an unknown physical space.

3 The teacher must ensure that the students take turns between positions, until all have played all the functions proposed in each dynamic. At the end, they gather the whole group and propose a moment of dialogue and reflection about the experience. This conversation can be guided by questions such as: What were the difficulties encountered? How did you feel? What is it like to try to communicate without being able to use your voice or gesture? What is it like to be guided by someone else? Did they ever feel that the other made no effort to

understand? Did you ever feel that you could not trust your colleague's directions?

4 After hearing the first impressions of the kids in this conversation, the teacher should take a second step and enable them to reflect on the concept of empathy, based on what was experienced in the classroom. To support the understanding of this concept, the educator emphasizes the gesture of putting oneself in the other's place, encouraging the class to think about their difficulties and facilities, fears and anxieties, elements that can be left aside when we are left with our own beliefs, without trying to get close to the other's context. It is important to point out that empathy towards people with disabilities is fundamental, but that this view of the other must be expanded to any kind of difference, be it social, cultural or economic.

5 After this phase of freer reflection, the second phase of the formative journey begins. The kids are instructed to locate problem situations at school or in their lives. They are organized into work teams of approximately six members and each team elects problematic issues that can be positively impacted by an application.

6 Having defined the themes of the projects, the teacher invites the students to apply the concept of empathy. To do so, they introduce a design thinking tool called the Empathy Map (see **Learn more**), which aims to help understand the target audience for which a particular project or product is created. The kids should think about the people involved with the problem situation who want to impact the technology solution and seek to answer the following questions:

- **WHAT DO THEY SEE?**
  For example: What TV shows? Which social networks? Internet sites? Newspapers? People? What happens before their eyes?
- **WHAT DO THEY THINK?**
  For example: Are you happy? Are you sad? What do they think about life? Of the Future?
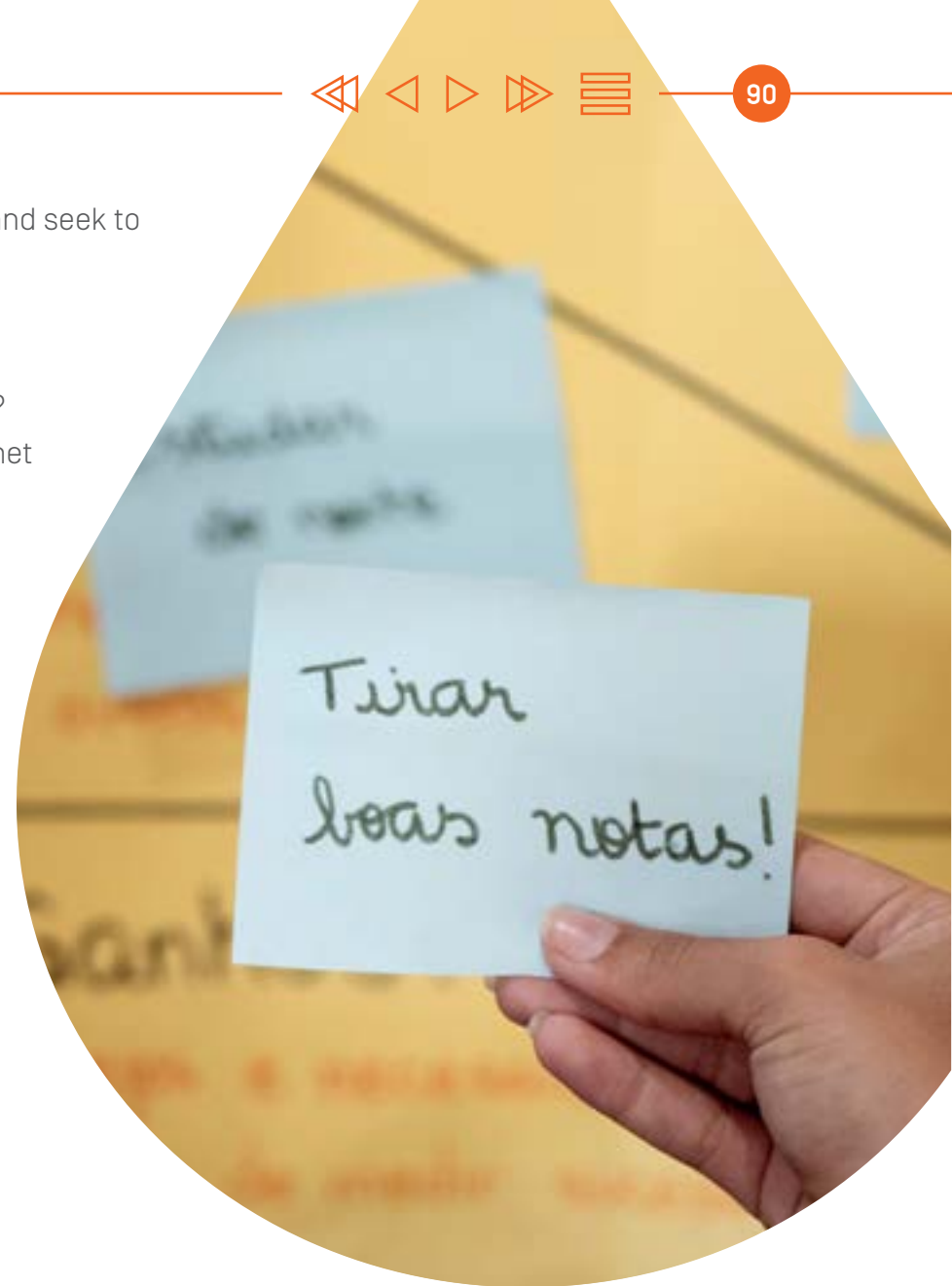
About the news?

- **WHAT DO THEY HEAR?**

  For example: What do people say to them? What do they hear on the radio? And in everyday life in general?

- **WHAT DO THEY SAY?**

  For example: What do they say to people? Do they do what they say? What subjects do they talk about?

- **WHAT DO THEY DO?**

  For example: What activities do they do? What do they do on a daily basis? What is their life like?

- **WHAT ARE THEIR PROBLEMS?**

  For example: What do they complain about? What problems do they have? What dissatisfactions and frustrations?

- **WHAT ARE THEIR NEEDS AND WISHES?**

For example: What do they want? What are their dreams? What is success for them? What makes them happy?

7 It is indicated that the map be made from cardboard[2] (see the **model**), to fill it up with Post-it notes, but can also be designed or made digitally. The teacher should show the map and answer any questions about the completion. You can even create a fictitious situation and demonstrate completing the map to exemplify.

8 After completing the Empathy Map, the class is again engaged in a discussion of how the tool can help better understand a project's target audience and, from that exercise, create better, more inclusive proposals and solutions, closer to the acceptance and place of the other. The teacher should also explore unexpected suggestions and highlight how this type of planning is important for identifying opportunities and evading predefined solutions.

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2. See the model
[http://bit.ly/empatiatd1]
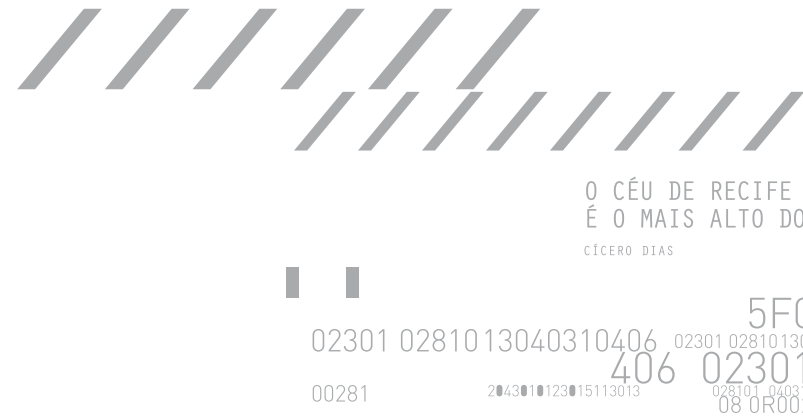
EVALUATION

This activity is not rated. The teacher can evaluate, taking into account the students' reflections on the concept of empathy and the ability to transpose this knowledge into the practical project design activity focusing on the persona created to represent the target audience.

RESULTS

This practice has been applied more than once in several series. Each time it was tried, some students participated in the experiences with great ease, while others showed more difficulty in blindfolding or performing mimes. However, the reflections that emerged enabled by these relatively simple activities were highly qualified and significant. The kids showed a deep understanding of the concept of empathy in their conversation and an awakening to the importance of putting it into practice in the creation of projects in the classroom, but especially in everyday school and life. In addition, they reported that experience made them realize the importance of critically thinking about society's practices and valuing social inclusion initiatives.

LEARN MORE

To understand design thinking
[http://bit.ly/desth]

Design thinking book free to download
[http://bit.ly/livrodt]
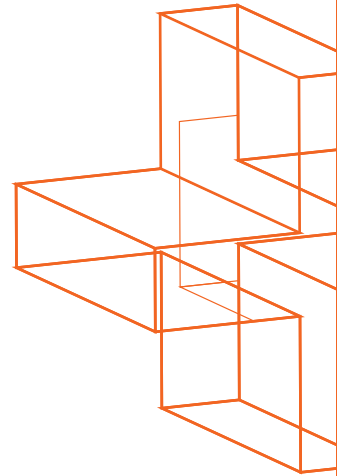
THE EXTRAORDINARY

KEYWORDS

#FEMINISM
#TEAMWORK
#HASHTAG_CREATION

AUTHOR
ERIKA PESSÔA

MODALITY

PROFESSIONAL AND
TECHNOLOGICAL
EDUCATION

COURSE

MULTIMEDIA

PROGRAMMING

TARGET AUDIENCE

HIGH
SCHOOL

ADULT
LEARNING

SKILLS

KNOWLEDGE

COMMUNICATION

RESPONSIBILITY
AND CITIZENSHIP

WHAT IS IT?

Activity that stimulates the study of biographies of Brazilian women who revolutionized our history and contributed to important advances in the human rights field of the country. The idea is that the kids have the opportunity to experience a different way of studying, systematizing and testing their learning by creating slogans and hashtags, and using the **Kahoot** tool.

WHY DO IT?

Although inscribed in legal texts of Brazilian education, such as the Law of Guidelines and Bases of National Education and the Common National Core Curriculum - BNCC, the themes related to equality, dignity, diversity and human rights are not always part of the practices developed in classrooms or formally integrate curricula. This is a short and easy-to-do activity, with an approach that enables contemporary and complex issues of utmost relevance, such as gender equality and feminism, to be guided and debated, offering opportunities for broadening one's repertoire and forming one's own opinion on the points discussed. The pedagogical sequence enables the creation of different strategies of study, while mobilizing the autonomous construction of knowledge.

RESOURCES

- Extraordinárias: mulheres que revolucionaram o Brasil [A book about Brazilian women that revolutionized Brazil] [see **Learn more**]
- Paper and pencil/pen
- Smartphones, tablets and/or computers with internet access for class use - one for every three people at most
- Computer connected to the internet
- Projector and speaker
- **Kahoot**[1] tool

CLASS TIME

- Three 50-minute classes

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1. Kahoot
[bit.ly/kahapp]

HOW TO DO IT?

1 The activity begins with a conversation circle, encouraging the class to name a scientist, a Brazilian scientist, a female scientist and a female Brazilian scientist. This exercise usually yields more answers with the names of male scientists, and it is important to make room for the group to understand the reasons for knowing so little about the work of female scientists. For example, in the school experience of about 180 students, Marie Curie was mentioned only once. It is important to mediate the discussion and end the class by explaining that the activity seeks to enable everyone to know more about the history of extraordinary female Brazilians.

2 The class is divided into teams, arranged in small work groups, with about nine students per team. Each group receives a copy of five separate texts from the book *Extraordinárias: mulheres que revolucionaram o Brasil*. Teams have 40 minutes to study this material, ensuring that each member can talk about women with greater knowledge. Further research should be avoided at this time. At the end of the study, a blank sheet is given to each group, which now has another 15 minutes to write three slogans and a hashtag about each of the five personalities. A slogan is a "catch phrase" that will represent what is considered most striking in that woman and give an idea of who she is/was. (See some **examples**

of slogans[2] and **how to create a creative slogan**[3].] Slogans and hashtags should be representative of the profile of each of the Brazilian women studied. It is important to clarify, before reading the texts, how much time each team will have available to study and produce the profiles. The purpose of this clear division of time is to understand how the team deals with respecting the rules initially set and the "pressure" of short time to perform an activity.

3 After studying, it's time to play the game in a ludic way. The class is reorganized according to the number of computers (or devices such as tablets and smartphones) available. Ideal for proper participation would be to subdivide teams so that you have a pair or three of them on each computer. The class proposal consists of an online quiz, previously configured with questions and answers about the women studied. The free Kahoot tool is used for the quiz. For the score, the tool counts not only the number of correct answers, but the speed with which the question is answered correctly and the sequence of right answers, which also generates extra points. All scoring rules are presented to the class before the game starts. The team with the most points wins, adding up the points of each pair or trio. The Kahoot website generates a spreadsheet and, with a simple sum, it is easy and possible to check the winning team at the end of the quiz.

4 After the points are scored, a very lively awards ceremony is created and the winning team is awarded. It also chooses one of the five women studied so that the defined profile – slogan and hashtag - is used to promote the female Brazilian on a social network, such as the school´s social network. A suggestion to broaden the scope of the activity is that the other teams also choose one of the other women, and thus five profiles are released, always using the slogans and hashtags created. In addition to spreading knowledge, expanding the reach to other people who did not participate in the practice. If the school does not have a social network, this can be done through other digital media such as websites.

2. Examples of slogans
(bit.ly/exslogan)

3. Creating slogans
(bit.ly/criaslogan)

Another possibility is the internal disclosure in the school´s space, using posters.

5 At the end of the meeting, it is essential to gather the students to deepen the reflection. The teacher should mediate a dialogue circle, identifying the learning about women who made history in the country. It is also important to talk to the class about each of the stages of the journey. The idea is to ask them to evaluate the experience, reflecting mainly on: the group strategies to optimize the study; the challenges and opportunities of teamwork; compliance with pre-established rules (of time and use of electronic equipment, for example, or the time of study and preparation of the profile); and the experience of competing in a school activity.

EVALUATION

The practice was evaluated in two ways: a more informal one, at the end of the course, and a more formal one, which was performed the day after its completion. The students individually answered a questionnaire containing objective questions, as well as a space for praise, criticism and suggestions. As it is an elective activity, there was no grade and the evaluation focused on collecting data on learning and subsidies for future planning of similar didactic sequences.

RESULTS

From the evaluation feedback, it was noticed that the students considered it important to know more about the women's history, their struggle and contribution to the achievements experienced today. Through this study, it was possible to enable reflections on the low female representation in various sectors of society, such as politics, leadership positions, science and technology, something that has been the object of study and research over the last years, and most recently, the subject of newspaper, magazine, and television programs. It was also possible to see how changing this scenario requires various and joint strategies, from public policies to discussions in the field of education, in all age groups. It has been shown that the interest in knowing what feminism is and who the women are that are fighting for gender equity is latent. The theme was the great mobilizer of this study activity. The young women mentioned women who were studied at other times and spaces of the school, revealing other learning. This practice also inspired and gave rise to an elective subject that is being offered to first year students on the theme Women and Social Movements.

LEARN MORE

Report on the book *Extraordinárias*
[bit.ly/livroextra]

UN and gender issues in education
[bit.ly/generonu]
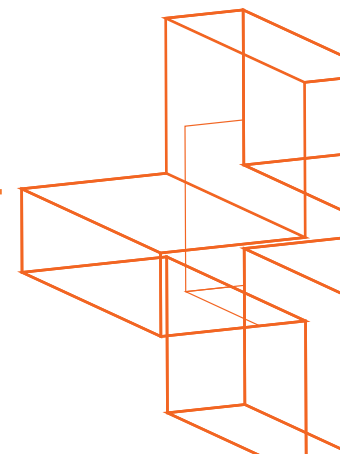
NEW PROPHETS OF KINDNESS

KEYWORDS

#HUMAN_RIGHTS
#ETHICS_AND_CITIZENSHIP
#VALUES

AUTHOR
JOSÉ GILBERTO DA SILVA

SUBJECT AREAS

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PHILOSOPHY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

RESPONSIBILITY AND CITIZENSHIP

EMPATHY AND COOPERATION

WHAT IS IT?

An invitation for students to carry out intervention projects at school or outside, starting with reflections on ethics and human rights and the life of **José Datrino**, the Prophet *Gentileza*. He was an urban personality from Rio de Janeiro who became known for making peculiar inscriptions on the pillars of the **Gasômetro Overpass**. "*Kindness leads to kindness*" is his most famous phrase.

WHY DO IT?

The initiative enables students to recognize, discuss and promote ethical attitudes in everyday situations. The course leads them to identify problematic situations and take an active role in transforming a given context. This broadens the kids´ critical thinking and their perception of their potential to influence other human beings and to change the world. By relating the actions performed with the curriculum contents in Philosophy, students recognize the role of culture in shaping values and perceive how these values are present in the construction of their identities.

RESOURCES

- Projector
- Computer with internet access
- Speaker
- The song *Gentileza*[1], by Marisa Monte
- **Video documentary**[2] about the Prophet *Gentileza*
- Slides with excerpts from the text Nicomachean Ethics (see **Learn more**)
- Cellphone camera
- Paper and pens
- Excerpts from ethics thinkers' texts, at the teacher's choice

CLASS TIME

- Nine 50-minute classes

1. Song *Gentileza*
   [http://bit.ly/mgent2]

2. Video documentary *Gentileza*
   [http://bit.ly/mgent]

HOW TO DO IT?

1 The teacher begins by presenting the music video of the song *Gentileza*, by Marisa Monte. After watching, they ask if the students have information about the making of the song. The teacher explains what was the inspiring source for the composition and investigates what the kids already know about the Prophet Gentileza. As they respond, the teacher adds new questions, piquing the curiosity of the class. Then, they show the video documentary that presents José Datrino's biography. To conclude the meeting, the kids are provoked to reflect on the idea of kindness and to seek to make relationships of this concept with their lives.

2 In the next step, the teacher gives an oral presentation, relating the attitude of the Prophet *Gentileza* with the thought of Aristotle addressed in the text *Ética a Nicômaco*. Students are invited to read excerpts of the text on slides and the teacher explores mainly a reflection on the attitudes that make us human. It also enables the class to articulate the concept of ethics as an art of doing good, leading to the understanding that being prudent and virtuous is not a gift, but a construction.

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3 The teacher goes a step further, calling on students to relate the concepts of ethics and virtue with their lives. The problematizations should lead them to think about their routine and to articulate their experience with the perception that the order of things enhances repetitive and "mechanized" everyday experiences. When this point of discussion is reached, the teacher goes back to the biography of the Prophet Gentileza, emphasizing his ability to leave a message of resignification in poetry painted on the walls. From there, students are invited to become the new prophets of kindness. The proposal is for the whole class to create an intervention that promotes kindness, in or out of school. To help with the conception, the teacher casts several thoughts: what or who would they like to value? What or who would like more visibility and attention? How to provoke

kindness through kind actions? The guiding idea is to create and perform an action that positively influences other human beings.

4 For the next four weeks, the teacher must substantiate contents related to the construction of the concepts of ethics and morals and how they were perceived by philosophy. The teacher can select texts from thinkers such as Aristotle, St. Augustine, Spinoza and Nietzsche, among others, to feed discussion and reflection. At the end of the class, time is reserved for the class to work on the conception and plan the intervention.

Although all students are involved in the development of a single action, it is ideal to organize themselves into teams. Institutional or logistical issues need to be considered and planned, such as: whether material resources will be needed and

how to make them viable, if action requires articulation with school management, whether permission from parents or guardians will be required in case of an activity off school grounds, among others. It is also important to organize a calendar.

5 On the appointed day, the kids will do the interventions they created. In addition to promoting the action, they also record it and organize a synthesis for a presentation. They can make photos, videos, record testimonials, write a logbook, among other ideas.

6 To conclude the course, the teacher gathers all the classes that performed the interventions in the same place. Each one exposes the problem identified and how it evaluates the result. In this moment of socialization, students are invited to present their testimonies, articulating with the

authors studied in the Philosophy subject. The educator rescues the reflection on the relationship with daily life, stimulating the suggestion of new solutions. Although this activity is focused on the discussion on ethics, citizenship and human rights, nothing prevents it from being associated with other themes of identity construction and recognition of the other.

EVALUATION

The teacher assigns a grade to the intervention performed, taking into consideration: student participation; the ability to plan, collaboratively execute and evaluate; and the skills of relating the action with the curricular contents worked.

RESULTS

In addition to promoting discussion on human rights, ethics and citizenship, the activity moved the entire school community, causing the reflection to leave the field of theory and materialize in attitudes. Attitudes, in turn, returned to the space of reflection, generating a movement of reflection-action-reflection. The interventions created and executed were amazing and spread to everyone, winning fans and generating a spontaneous multiplier movement. One class, for example, organized a flash mob in a square whose central action was to surprise passers-by with hugs. Another group decided to pay tribute to school staff such as cooks, doormen and doorwomen and cleaning staff. There was also an action that produced messages of encouragement and support for third year high school students, who experience tremendous pressure from the College entrance exam.

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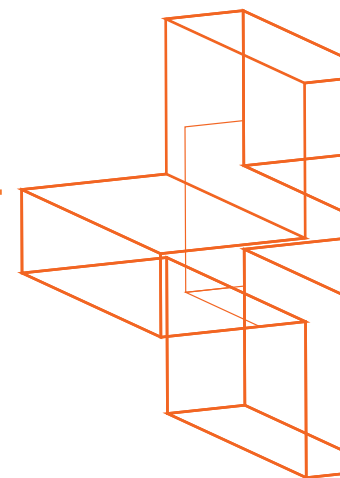
MULTIVERSE

AUTHOR
AGNES D'ALEGRIA

WHAT IS IT?

The use of Greek myths is the most traditional way for philosophy teachers to approach the subject in class. The activity innovates by proposing the study of indigenous and African myths, which influenced the formation of Brazil. Through the study, students discover that there is a rational and common ordering in the cosmogonies of different cultures.

SUBJECT AREAS

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PHILOSOPHY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

CULTURAL REPERTORY

WORK AND LIFE PROJECT

WHY DO IT?

Including myths from other peoples and cultures that influenced the formation of Brazil is a way of broadening the references about the knowledge of cosmogonies and cosmologies. It is also a way of addressing the recommendations of legislation that make it necessary to approach the history of Africa and indigenous peoples of Brazil in high school (see **Learn more about law 11.645**[1]). This path also enables the development of respect for the diversity of beliefs and ways of thinking. The practice enables the kids to reflect on how their personal "worlds" are organized and to articulate these reflections with common principles of human mythological narratives. It also allows them to think about their desires and expectations at the school and from the world, which enables them to learn about the organization and planning of their life projects with greater autonomy, without their being articulated to references and majority views. The concept of Multiverse, a word coined by the African Philosopher Ramose (see **Learn more**), is widespread and illustrates the existence of a plurality of conceptions of worlds and realities that can coexist without canceling each other out.

RESOURCES

- Characterization material: feathers, gouache paint for the skin, some hair clips and other props that the educator may wish to make available
- Party balloons (approximately three for each student)
- Atomic brush pens, one for each student
- Ball of string
- Printed copies of **texts**[2] selected about myths

CLASS TIME

- Two 50-minute classes

1. Law 11.645
[http://bit.ly/le11645]

2. Texts
[http://bit.ly/pluriversos1]

HOW TO DO IT?

1 The activity is divided into two steps. It starts with an invitation for the class to organize into groups of approximately five members. Each group receives printed copies of four separate texts. "Myths" are generally presented but little addressed in the classroom: a myth of the Amazon Dessana tribe; an excerpt from the gospel of John of the New Testament; an excerpt from Genesis from the Old Testament; an African myth of Orunmila (orixá linked to intelligence). The passages address the creation of the world and cosmological and cosmogonic views of each people. The four myths propose the ordering of the world and the creation of the primordial elements and of humanity from an intelligence.

- **Cosmology:** a branch of astronomy that studies the origin, structure and evolution of the universe through the application of scientific methods.
- **Cosmogony:** a term that covers the various legends and theories about the origins of the universe according to religions, mythologies and sciences throughout history.

2 Taking turns, students read the texts proposed by the teacher aloud. It is important to take this reading without haste, allowing the kids to comment freely at the end of each passage, sharing their impressions. It is also important to read the Dessana myth last. It is what causes the most impact and will be the reference for the next step of the activity. In general, this moment engages the kids a lot, as they do not usually have contact with similar indigenous or African narratives in their daily lives.

3 After reading, students will interpret the Dessana myth. Organized in groups, they will develop their version for the creation of the universe. Four members of the group must have a balloon and another, which must be a girl, receives the props - feathers, paints, etc. The kids with the balloon are invited to build their world on the surface of the object by drawing or writing elements that represent or what they wish on their own planet. The girl, in turn, in possession of the props, must be characterized as Dessana. She must incorporate, in her representation of goddess elements of her context and imaginary as well.

4 While students are involved in this creative moment, the teacher should encourage the class to reflect on their expectations of the school

and the world they intend to build for themselves. This discussion can be guided by the question: "What was cassava, pots, bowls and wooden benches for the Dessana Indians, what things are fundamental to you today?" This conversation should help to choose the ideas that will be represented in the balloons.

5 The second stage of the activity begins when students finish their creations. At this point, they must begin to organize the universe created with the set of balloons. The girl characterized as Dessana forms the cosmological system of the group, joining the balloons with circular strings (thinking about the elliptical shape of the solar systems, for example) and choosing the order of the balloons, which will represent the celestial stars. The kids should record these choices, following the

style of the Dessana myth. They note the characteristics of their group's "goddess", the main elements of each planet, and in what order she created each of the stars.

6 Subsequently, each of the "goddesses" must present their "universe" as a theatrical sketch, that is, the tale adapted by their group. At the end of all presentations, students are encouraged to compare these "universes," noting the common and distinct traits between them, reflecting on the points that unite them all, despite their differences and individual characteristics. At this point, it is interesting for the teacher to guide and provoke the kids to identify the similarities and differences between the myths read. Students are expected to especially identify:

- The opposition between shadow (nonexistence) and light (existence).

- The order established for the emergence of each element of nature (sky, sea, mountains, etc.)
- The presence of an ordering intelligence of creation (the Christian verb, the thought in the tale of Dessana, the figure of Orunmila in the African myth). This point will be essential to address the concept of "logos" in philosophy later with the class.

7 In the end, all the "universes" are united by the "goddesses", forming the multiverse of the class. At this point, the teacher should point out that, despite all the differences, there are common traits in all balloon groups. Similarly, there are common traits in the myths presented, which makes us observe that deep down neither is better or worse than the other. Students are then invited to evaluate and reflect on the lived path,

especially with regard to contact with myths of other traditions (black and indigenous). Dialogue should be oriented toward tolerance and acceptance of differences, emphasizing that just as with the creation of the class "multiverse" the number of ideas has increased, so is the world when we are willing to understand and accept the different ways of thinking of each culture.

EVALUATION

The activity can be evaluated as successful if it promotes engagement and if the class can spontaneously formulate good reflections, i.e. without the need for lecture by the teacher. The teacher does not assign a grade.

RESULTS

The activity was performed in two classes simultaneously and, in both, the identification of the elementary topics about the myths was quickly perceived, without the teacher having to induce. The process also made it possible for the kids to experience the ludic side of indigenous and African myths, sharpening students' perceptions of how the use of intelligence and thought to rule the world is not a European particularity, but of all peoples. The union of all balloons at the end of the activity helped them to understand how the plurality and diversity of ideas and ways of thinking that make up the world can broaden possibilities and perspectives for action. By creating representations of their personal worlds, imagining themselves as gods, students were able to reflect on their desires and dreams, the things they would like to improve in the world, and especially to think of ways that would make it possible. Another interesting point is that the recreation of the Dessana myth and its comparison with the other myths shows that it is possible to think about gender equality.

LEARN MORE

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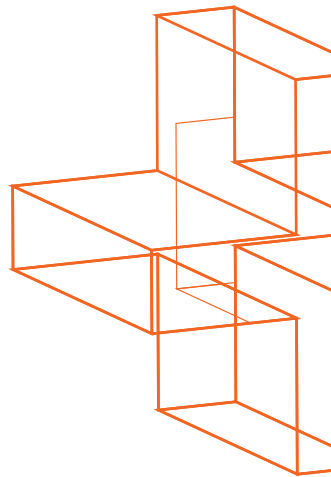
EXISTENTIAL AMAZEMENT

KEYWORDS

#HUMAN_CONDITION
#IDENTITY
#AESTHETICS

AUTHOR
JOSÉ GILBERTO DA SILVA

WHAT IS IT?

A series of observation exercises about reality and its aesthetic production, which culminate in an artistic exhibition at school. Along this route, reflections are stimulated about the need to see the unheard and the singular in what is every day and ordinary. The experience promotes the appreciation of human diversity and positively influences the construction of the kids´ identity.

SUBJECT AREAS

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PHILOSOPHY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

COMMUNICATION

SELF-KNOWLEDGE

WHY DO IT?

The routine, in terms of routine, removes the capacity of the spectacular, the unprecedented. Being in the present and observing it as unusual is rare, challenging, and often an experience unknown to students. On the other hand, the society we can classify as "of the spectacle" makes the human experience banal. Serial art production turns it into a product. Human beings too often enter the world as a product or consumer of them. This practice aims to offer a path that positively influences the kids´ experience of being and being in the world, enabling them to critically read the surrounding universe, to know each other in depth and to express their uniqueness. It is an initiative that exemplifies how the teaching of philosophy can contribute to self-knowledge, critical thinking, and the formation of identities and the appreciation of differences. In addition, the activity opens a space for the development of creativity and artistic expression of students, offering the possibility of the exercise of analysis and reflexive synthesis through other languages, aside from the verbal written record.

RESOURCES

- Computer, multimedia projector and speaker
- Smartphones or cameras for photography and audiovisual
- Chico Buarque's song **"Ciranda da bailarina[1]"**
- Picture of a ballerina with injured feet
- Poems from Alberto Caeiro's **O guardador de rebanhos**[2]
- Text "O universo das artes", by Marilena Chaui
- Text "A condição humana", by Hannah Arendt
- Selection of books, various texts, access to the library and the internet for research.
- Space for student exhibitions or artistic presentations

CLASS TIME

- Ten 50-minute classes

1. Ciranda da bailarina
{http://bit.ly/cirandab}

2. O guardador rebanhos
{http://bit.ly/guardreb}

HOW TO DO IT?

1 The teacher begins the process by playing the song *"Ciranda da bailarina"* and presents an image that depicts a ballerina with injured feet. After this appreciation, they some problematizations, to provoke the students to reflect on the necessity of the education of perception, on being aware of what seems to be invisible. After this first round of dialogue, the kids read the poetry from *O guardador de rebanhos*. Once again, the teacher seeks to inspire reflections on the importance of looking at things that do not look common, banal. In addition to these references, it is interesting that other diverse indications of artistic, visual and literary works are offered. It is also worth encouraging them to search autonomously. These references will be a source of inspiration for expressive and aesthetic work all along the way.

2 At the second meet, an exercise is proposed to the class. Everyone is invited to walk around spaces within the school that they usually go to or have never allowed themselves to go and to try to look more closely, looking for another angle or looking closer than they usually have. The teacher emphasizes that, aside from looking, it is important to hear and allow oneself to feel these places. The idea is to perceive and record the presence of each being in the observed environment, and then produce a record of the experience in text, photography, audio or video format.

3 In the third class, students socialize what they have experienced through their records. In the end, the teacher proposes that the kids redo the experience of seeing, hearing, feeling and registering in other

spaces of the city. They may choose to experiment at home, with family, with friends, in neighborhood places they normally go to, or in places they have never been. The idea is to observe people, their peculiarities and contexts, always casting this different look on reality and making their records. An interval of two weeks is suggested for this extracurricular activity.

4 At the next meet, the class shares their records and comments on the new experimentation. The teacher emphasizes similar experiences and records that bring a similar approach [this organization of proposals is fundamental for the next step of the course]. At this moment, the educator takes the opportunity to make bridges between the students' experiences and the theoretical contents of philosophy that guide the

understanding of concepts such as art, artist and work of art. Starting from theoretical texts, especially Marilena Chaui's *"O universo das artes"* and Hannah Arendt's *"A condição humana"*, the debate should establish a relationship with the historical process that defines the diverse understandings of art, work, and culture and the repercussion of these ideas on human relations. Points such as crafts, democratization and the purpose of art and the cultural industry need to be present in the reflections.

5 At the fifth meeting, the class begins the process of artistic production, starting from the previous records. Students are free to choose to work on this building individually or in groups. With the help of the educator, kids work on the concept of the show, discussing how the experience of feeling can be portrayed and what the best ways to make this concept tangible are. Everyone

also thinks about the space and materials needed. The teacher needs to articulate with the school's management, ensuring support for the action.

6 The exhibition usually uses all possible spaces of the school, contemplating the largest number of students in the exhibition. The idea is to arouse curiosity for learning and to share meanings between classes. One suggestion is to organize guided tours with kids from other classes, by pre-arranging the schedule with other teachers.

7 With the exposure mounted, the teacher performs a process of evaluation and appropriation of results in the classroom. The class socializes work, sharing learning and lived experiences.

EVALUATION

The course provides for a procedural evaluation, which takes place mainly in the following ways:
Self-evaluation: throughout the process, the teacher asks students to reflect on what the experience is enabling from learning about who they are, who they are, and issues in the world that affect each participant.
Dialogue during the results of the socializations: in teacher-mediated conversations, students are invited to asses and refine the process.
In working groups: the kids are encouraged to think about integrated work, evaluating collaboration in the group they are in and also between groups during the execution of the exhibition project.

RESULTS

In addition to developing a researching, reflective and critical spirit, the initiative promoted the approximation and/or strengthening of knowledge about art and the various fundamental languages for understanding the world. The process made the reflection on human nature possible, not as an absolute element, but from the formation of identity, generating a closer dialogue with the challenges of being and living with oneself and with the other. The change in students' posture regarding the perception of reality and the understanding that truths need to be verified was perceived. The kids have been having difficulty focusing, stopping to think, to see, to hear. It was amazing to see how the initiative enable them to overcome these difficulties. The artistic and aesthetic productions were also very potent. The performances, poetry, videos, paintings, drawings and images translated the richness of the experiences, the depth of the questions and the critical posture conquered by the class.

LEARN MORE

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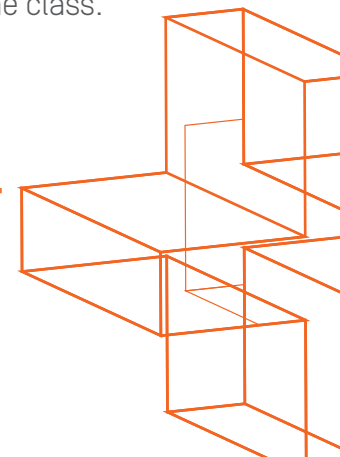
LETTERS AND BRAZILIAN SIGN LANGUAGE

KEYWORDS

#BRAZILIAN_SIGN_LANGUAGE
#LITERATURE
#MULTI_SPECIALIZATIONS

AUTHOR
ÂNGELA ESTEVES

WHAT IS IT?

It is a guessing game that assists in the visual literacy process of deaf and hearing students. Participants correlate images and words in Brazilian sign language and written Portuguese Language, learning both the meaning of signs in Brazilian Sign Language and the words in Portuguese Language in a ludic and collaborative way.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

PORTUGUESE LANGUAGE

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

RESPONSIBILITY AND AUTONOMY

EMPATHY AND COOPERATION

WHY DO IT?

Following the perspective of inclusive education, it is necessary to create activities and provide learning spaces that involve all students, so that differences are dealt with empathy and without generating exclusionary situations. This pedagogical sequence follows this premise, offering a moment of collective learning in two languages, without breaking the deaf in the teaching of Brazilian sign language. In addition, the initiative is a didactic resource for introducing and engaging youth groups in teaching Brazilian sign language. The game's dynamics provide participants with evidence that studying Brazilian sign language is similar to studying any other language, such as English, French or Spanish. Therefore, even if there are no deaf students in the room, this is an important learning experience that gives those involved a specific knowledge that few have.

RESOURCES

- Short literary text that is of interest to the class. This literary text in Brazilian sign language can also be a video narrative, with audio and subtitles written in Portuguese, in addition to narration in Brazilian sign language. **See an example**[1].
- Pictures from magazines, newspapers or photos of the center of the kids´ interest
- Brazilian sign language and Portuguese language alphabet, printed or handwritten
- Cardboard in sufficient quantity to support the alphabets and images
- Glue and scissors
- Wide tape or clear adhesive paper (contact) to cover images and alphabets
- A bag of TNT, tulle or reused from a gift

CLASS TIME

- Two 50-minute classes

1. Exemplo

[http://bit.ly/exlibra]

HOW TO DO IT?

1 The teacher chooses a short literary text. It is also necessary to select and organize two sets with 10 types of images. One can search the internet, produce photographs or crop illustrations that contribute to the comprehension of the text, covering its entire plot. Then it is time to look for images or photographs that are related to objects or items that are part of kids´ daily lives. Ideally, cut out all the images and paste each onto a piece of cardboard to make them firm and last longer.

2 The second step is the creation of a bilingual alphabet. On each piece of paper, the representation of a letter in Brazilian sign language and the corresponding one in Portuguese is presented. Both should be spelled side by side, in capital letters and cursive, upper and lower case letters. Then just paste the paper with each letter in cardboard and wrap with tape or clear adhesive paper around to cover it, which increases the durability of the pieces. If there are blind students in the class, the images must be audio-descriptive and, in addition to the letters in Brazilian sign language and Portuguese written, add the Braille alphabet. If there are kids´ who have difficulty holding the pieces, the suggestion is to stick them with Velcro adhesive so that, with the aid of a strung Velcro ring in their hand, they can choose and secure their piece. These cardboard letters with the letters in Brazilian sign language and in written Portuguese language should be kept in a sachet.

3 To start the activity with the class, the teacher presents the chosen text in Brazilian sign language. This is an important time for students to see how the Brazilian sign language works and to arouse curiosity in them about their learning. The idea is to tell the story in Brazilian sign language, with the opportunity for the kids to follow the text written in Portuguese simultaneously. While the text is narrated in Brazilian sign language, the selected images are used to aid in understanding the plot. After the end of the narrative, the teacher, still with the help of the images, asks questions in Brazilian sign language, to see if everyone understood the story.

4 After this moment of sensitization, the game is explained (in Brazilian sign language, with the help of the material to be used) and the class is organized in two teams (A and B). The images related to the narrated story are placed by the teacher on the table, face up. A representative of group A draws a letter from the bag. They should take it, without anyone seeing, an image named after the letter drawn. This student makes the sign in Brazilian sign language corresponding to that image for a colleague in group B, who will have to figure out what the image is and make its representation in **typology**[2] as well.

2. Typology
(http://bit.ly/letrlil)

Following, another student from group A writes the word in Portuguese. If someone has difficulty completing their own step, another colleague in their group can help, and if they still can't do it, they can ask the other group for help. At the end of this round, the sequence occurs in the same way, but in reverse (a representative from group B draws the letter and starts the dynamic). The game ends when all images are represented in signs, type and in written Portuguese language.

5 In order to obtain a written record of the steps of the activity, the teacher can print a sheet with two columns. On one side, the images with their initial letter in Portuguese language

and the corresponding sign in Brazilian sign language are placed. In the other column, the words in type and written Portuguese. After the game, students should be able to correlate the two columns.

EVALUATION

The kids´ participation is evaluated by directly observing their engagement, interaction, and interest in complying with the rules of the game, such as not speaking orally. An evaluation is also done of the acquired knowledge, with similar proposal to the final activity of the game: correlate images and words in type and Portuguese written language and the sign in Brazilian sign language.

RESULTS

The game provided a greater rapport among the students. They were encouraged to learn another language and developed more empathy for their deaf colleagues. The experience has also helped to realize that reading lips is not simple, as you need to know Portuguese words. It was still possible to recognize that gestures and mimes are different actions of signs in Brazilian sign language. In addition to learning about languages, the kids integrated more as a group, developing skills such as cooperation. In the activity experienced at NAVE Rio, letters in Braille were added to the letters, which was another learning experience. The group was surprised to find that Braille is a code and not a language, different from Brazilian sign language and the Portuguese language.

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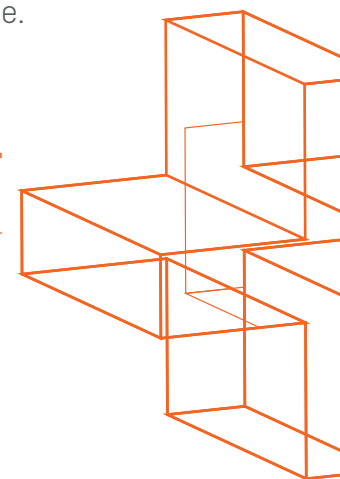
CHAPTER 3

IT IS BY PLAYING THAT ONE LEARNS

IT IS BY PLAYING THAT ONE LEARNS

A reward is not always a material prize; it can be a sense of well-being when we can overcome a challenge. Emotions like this can turn learning into a more enabling and pleasurable experience. In this chapter, teachers outline gamification strategies to motivate students' skills in school problem solving and in various subject areas. The experience of a RPG, for example, becomes an option to teach cytology and defense mechanisms of the human body.
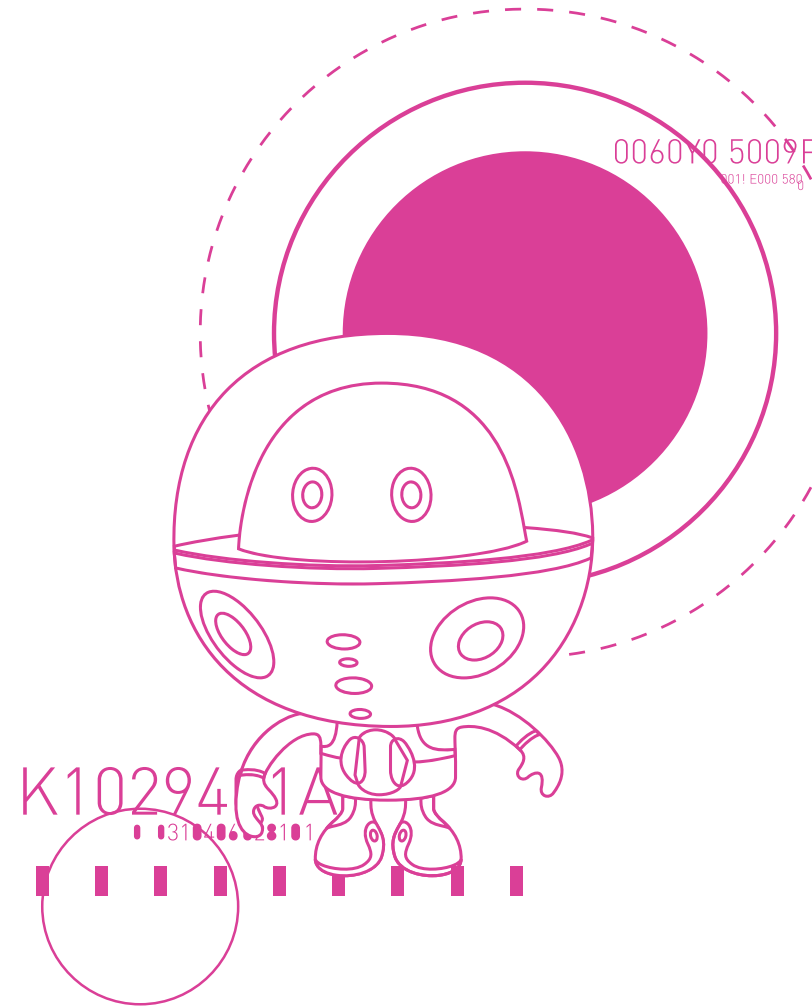
LUDOSCHOOL

KEYWORDS

#GAMIFICATION
#INTEGRATION
#PROBLEM SOLVING

AUTHORS
OBERDAN ALVES
DANIEL MARTINS

WHAT IS IT?

Students are encouraged to identify problems and opportunities in the school universe. They create interventions that use gamification techniques and processes to solve localized issues, positively influencing the daily reality of the school.

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

PROGRAMMING

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

DIGITAL CULTURE

WHY DO IT?

The school is a social environment and has A space of shared resources, some of them being underused or misused. In addition, in everyday school life, there are many issues that can be problematic, such as bullying, poor school performance and dropout, among others. This pedagogical sequence enables the student to develop a critical understanding about the school environment, understanding it as a social space in its complexity and identifying its possibilities for action. The kids develop gamified intervention proposals that positively influence this microcosm, engaging not only the class but the entire school community.

RESOURCES

- Computer
- Projector
- Pencil and paper
- Various materials that may be needed for interventions, such as: TNT fabric, EVA, paper, glue, recyclable bottles, plastic cups, among others.

CLASS TIME

- 12 50-minute classes

1 The activity begins with a question: "Why should everyone play?" Students can have many different types of answers, such as: "Because it's fun", "Because it makes me happy", "It makes time pass", among countless possibilities. Importantly, there is no correct answer, so the kids should be encouraged to ramble on, to arouse curiosity and to engage. The teacher then gives an oral presentation on the history of games and their applicability over time. They can tell that games have been around for thousands of years and that, at first, they were not created with a strict sense of fun or to "pass the time," but to deal with life (and death too). It should highlight research and theoretical lines that point out that the experience

of playing is rewarding precisely because it offers challenges by inviting the player to a kind of "hard work", boosting the development of creativity and establishing ways of socializing that help build new relationships. It can also be stressed that failure in the game is not negative, but a fuel for achieving success, which enhances the sense of accomplishment. There is a concern about addiction and violence, but the teacher must raise the question to conclude: "Can games be considered the villains or responsible?"

2 In the second class, the teacher gives a dialogued exposition, enabling the students to reflect on what is and what is not gamification. For this, they use a slideshow in which they share the reflections of some experts (see **Learn more**) about the subject. In this concept definition path, it is essential to highlight that it is not possible to reduce gamification to the simple act of giving points, awards or displaying a table with a ranking. The kids should understand that these isolated elements will not have a big impact, more than that is necessary: it is necessary to evaluate the context that will be gamified in order to have good results. Gamification presupposes the use of elements traditionally found in games in other generally non-ludic contexts and activities to promote engagement or some change in behavior. Elements such as narrative, points, prize, conflict, cooperation, competition, levels, trial and error, fun, interaction, interactivity, voluntary participation, feedback system, clear goals and rules, among others, are used in the process.

3 In the third meet, the teacher introduces **Octalysis**[1], a methodology developed by researcher Yu Kai-Chou that synthesizes basic elements of every game. After a brief explanation, the teacher plays the video Gamification to improve our world: Yu-kai Chou at TEDxLausanne, in which the author describes his methodology with examples. Only after the video is shown, **the eight elements of Octalysis**[2] [http://bit.ly/ludoescola2] are presented with greater

1. Octalysis
[http://bit.ly/ludoescola1]

2. The eight elements of Octalysis
[http://bit.ly/ludoescola2]

emphasis. The presentation should be done with slide support so that the class understands each of the elements well.

4 Next, videos are shown with **examples of gamification**[3], highlighting the game strategies used in each situation, the innovative aspect, which makes each of them interesting and how the dynamics engage people. It is important to ask the kids at the end of each video what elements of Octalysis can be observed in the examples. Also, take the time to promote a discussion about the limits of gamification and what it can bring about negative depending on how it is used.

5 In the next step, the teacher organizes the class in teams of five members and invites each team to investigate the school space. The idea is to find opportunities that can be solved/enhanced with a gamified intervention project. The teacher can organize a script for the students with guiding questions for the school trip. It is worth mentioning in this research script: people with whom the kids can talk to

3. Videos with examples of gamification
[http://bit.ly/ludoescola3]

(other kids, teachers, cooks, cleaning staff, librarian, and coordination, among others) and what questions can be asked to identify problematic issues.

6 After all groups have completed their investigation; each group is encouraged to create a gamified intervention proposal. The projects must start from the ideas raised during the school circulation and contain one or more elements of the Octalysis methodology. The teacher should talk to each team, relying on the application of this methodology and evaluating the feasibility of the proposal, especially regarding the resources and costs involved. It is important to be careful when talking to groups not to let them discard a good idea. Each project must be structured and detailed in a document, which must contain the name of the

proposers, a summary of the proposal, target audience, the indication of the problem that is being addressed, the presentation of the intervention proposal, deadline, materials needed, elements of the games that will be used and references.

7 The next step is dedicated to the implementation of the intervention by each group. At first, the teacher asks the teams to make a presentation of the proposals for the whole class, so that the others can get to know them. Later, the students develop the interventions from the available materials. Once created, the kids can propose campaigns or mobilization actions (during class breaks, for example) that disclose the proposal to the whole school and what problem it aims to solve, thus encouraging the participation of all.

8 To conclude the course, after all the projects performed, the teacher promotes a meeting for the evaluation and appropriation of results. It is a time for everyone to identify their learning.

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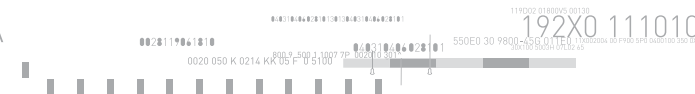
EVALUATION

The teacher assigns grade considering the following criteria: commitment, participation and meeting deadlines. At the time of submission of proposals, aspects of organization and clarity in the communication of ideas are evaluated. Consideration should also be given to whether the kids can actually implement and complete their interventions.

RESULTS

The whole course was marked by the creativity, dedication and enthusiasm of the students. One project, for example, proposed the installation of basketball hoops over the school dumpsters, a fun way to encourage the habit of throwing the trash in the right place. Although it seems like a simple action, it contributed to the care of common spaces. Another initiative created boxes to receive requests from the kids for advice. Anyone who has a problem can write anonymously about their anguish. Another student, who volunteers to be a counselor, responsible for reading and responding to the letter, adopts these reports. The more cards are answered; the more points the counselors earn. This score feeds a ranking and the top finishers receive prizes. The intervention provided a rapprochement among the kids, while helping the pedagogical team to meet personal challenges that are not always verbalized. The understanding of the school as a place that can be improved can positively transform students' relationship with the school environment, which has come to be seen as a space for the constant strengthening of actions aimed at the common good.

LEARN MORE

TEDX Talks Video | Gamification to improve our world: Yu-kai Chou [http://bit.ly/TEDgamification]

• MCGONIGAL, Jane. **A realidade em jogo: por que os games nos tornam melhores e como eles podem mudar o mundo**. Rio de Janeiro: Best Seller, 2012.

• ARAÚJO, Inês Cardoso; CARVALHO, Ana Amélia. **Gamificação: uma oportunidade para envolver alunos na aprendizagem**. A.A.A Carvalho, S. Cruz, C.G. Marques, A. Moura; I. Santos (eds.), vol.2, p.392-399, 2014.

• BURKE, Brian. **Gamificar: como a gamificação motiva as pessoas a fazerem coisas extraordinárias**. São Paulo: DVS Editora, 2015.
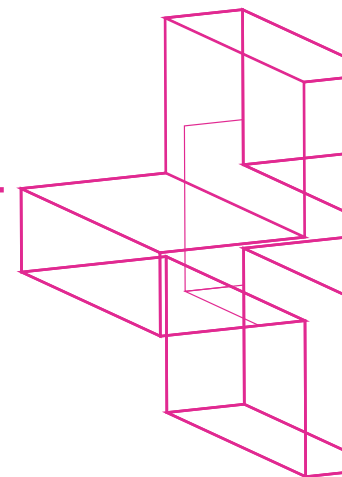
EDULARPBIO

KEYWORDS

#GAMES
#LARP
#CYTOLOGY

AUTHOR
FERNANDO OLIVEIRA

WHAT IS IT?

Students learn about cytology by developing role-playing games known as LARP, the term Live Action Roleplay. Each player takes on a role and experiences it, collectively plotting the course of the story. Despite the similarities to theater, there is no script. It is an immersive experience and not a presentation.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

COMMUNICATION

KNOWLEDGE

ARGUMENTATION

WHY DO IT?

The use of LARP in education is called EduLarp and has been tried with excellent results. It is an initiative that provides, above all, the appropriation of curriculum knowledge in a more profound way. It promotes ludic and active learning, allowing students to give meaning to disciplinary content. Above all, it stands out for its versatility and can be adapted to the different contexts and subjects in which the kids can research, assume and interpret roles involving history, biology, chemistry, Portuguese language, etc. In addition, the development of EduLarp creates possibilities for each student to be interested and more involved in their own learning and develop various skills, mainly related to communication and text interpretation.

RESOURCES

- Chips previously prepared for the draw
- Bags to draw from
- Biology textbooks and/or devices with internet access for research

CLASS TIME

- 20 minutes

HOW TO DO IT?

Prior to the start of the activity, it is important to plan the time and content to be used as the basis for the game, and to prepare the chips for the draw.

1 The teacher begins by presenting what is and what are the objectives of LARP. This explanation can count on a moment of exposition and another of trying some quick game, so that the kids understand what the dynamics are like. For the presentation, the teacher can also use the **LARP Practical Guide**[1], produced by the Live Action Roleplaying Research Core.

2 Subsequently, the oral presentation is made on the contents that will be the basis for the development of LARP. In this experiment, we opted for knowledge of cytology. Each teacher can choose the best way to present content to his or her class. The important thing is to ensure that the game is developed at the end of the class, so the knowledge approached can be expanded and deepened.

1. LARP Practical Guide

[http://bit.ly/guialarp]

3 To carry out the game, the teacher asks the class to organize themselves into groups. One member plays the role of a human body cell and the others represent foreign bodies, which can be enzymes, proteins, bacteria, viruses, among others. Each foreign body will have its specificity. In the draw chips, previously prepared by the teacher, the roles are indicated: the cell and the different foreign bodies. To make it more interesting, each group can have sets of foreign bodies completely distinct from each other. After the draw, only the cell reveals its identity and the other team members should keep a secret about who they are.

4 Before the start of the game, the teacher may allow everyone to spend five minutes researching the roles they have drawn. It is a time for each to remember the curriculum content and build their arguments. In order to understand the proposal, it is also interesting that the teacher simulates the dynamics of the activity with the help of a student, exemplifying how foreign bodies can communicate and how the cell decides which ones to encompass.

5 After this preparation, it's time to play. In each group, the student who plays the cell begins the dynamic. In this role, they do not know the identity of the other participants, who act as foreign bodies. The kid who plays the cell will interact with colleagues to try to identify the characters they play and thus decide whether or not they can be embraced by it. This decision must be made considering whether or not foreign bodies are harmful. Therefore, students who interpret foreign bodies should try to talk with the cell, informing some of its characteristics

without revealing their identities and persuading it to allow passage. The round ends when all the foreign bodies in the group have interacted with the cell and it has decided which ones to enter and the ones to leave outside. In the end, the foreign bodies reveal their identities and the students discuss what will happen to the cell. They can evaluate, for example, if the cell was damaged by any harmful foreign body that was able to enter.

6 Each round lasts, on average, 5 to 10 minutes. It is interesting that the participants change roles, making a new draw, so that they are encouraged to research more and to know different characteristics of the subject. The teacher should move around the room, observing the interaction of the groups. If any team takes too long to finish the round, they can intervene to speed up the process.

7 At the end of the 20 minutes, the groups are broken up and the whole class is reunited for a final discussion. In this debate, the teacher can encourage students to report what they think about the experience and what happened to the cells in their groups.

EVALUATION

The development of EduLarp is not assigned a grade. However, the teacher may invite students to self-evaluate after the experiment by asking them to reflect on their arguments during participation.
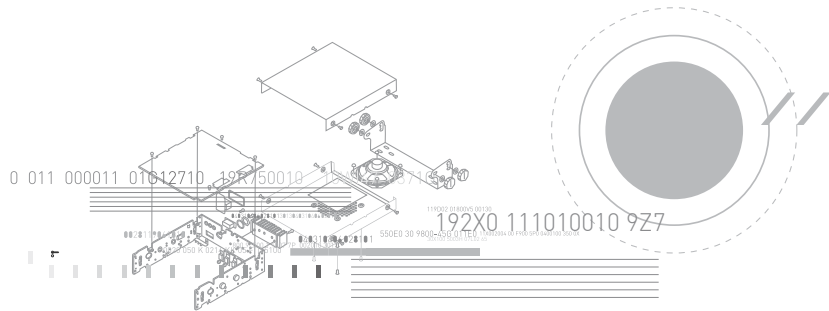
RESULTS

EduLarp's experimentation in articulation with biology content provided a significant increase in student collaboration. They engaged in deepening their knowledge of cytology in order to refine the arguments for beating colleagues in the game. This engagement was surprising, above all, because there was some fear from teachers that some strangeness might arise from the proposal to assume such different and unusual roles. However, the kids were fully involved in the activity, which also reflected positively on evaluations of the subject of biology, demonstrating that the curriculum contents were indeed appropriate in depth.

LEARN MORE

EDULARP - The Educational LARP
[http://bit.ly/edularpf]
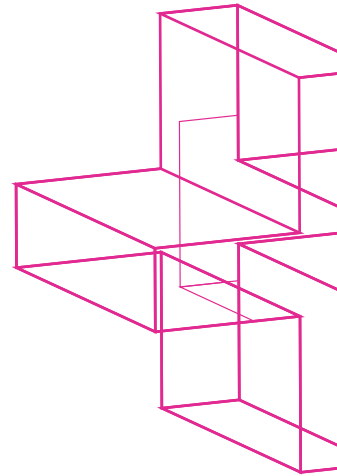
DEFENSE LEAGUE

KEYWORDS

#GAMIFICATION
#RPG
#BIOLOGY

AUTHORS
AMANDA YUMI
CARLOS BURGOS

WHAT IS IT?

A game inspired by the dynamics of Role Playing Game - RPG, proposed as a tool to support the understanding and appropriation of Biology contents. The didactic sequence was designed from the students' experience and interaction.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

EMPATHY AND COOPERATION

KNOWLEDGE

ARGUMENTATION

WHY DO IT?

It is a practice that uses the ludic methodology as a strategy to promote the meaning and the deepening of knowledge. According to US professor Donald Norman [2013] (see **Learn more**), user experience is related to how they feel when using a service, impacting their judgment and behavior. Based on this principle, the pedagogical game promotes the kids´ engagement and provides, from a learning experience different from the traditional classroom model, a tangential appropriation of content. The purpose is to make the student go further through research and the autonomous construction of knowledge. The activity can inspire activities tailored to multiple themes and subjects, as role-playing uses as its fundamental resources logical thinking, creativity and the ability to create solutions.

RESOURCES

- For card making: cardstock, A4 paper, printer and Contact paper
- For the practice: paper and pen, stopwatch, dice and the letters made
- For content introduction: video はたらく細胞 [**Hataraku Saibou**][1] series animation video

CLASS TIME

- **Two 50-minute classes**

1. Series animation video
[**http://bit.ly/serieHS**]

HOW TO DO IT?

1 The activity begins with a presentation about the Role Playing Game (RPG) and the proposal to use it for Biology learning. A previously prepared **document**[2] provides information on the rules and composition of characters - the main feature of this game genre. Then students begin character creation inspired by scientific knowledge in cytology and histology. The human body will be the context of role-playing and will act as a visual guide.

2. Document
[http://bit.ly/ligadefesa1]

2 The next step is the introduction of Biology content, by displaying an animation that talks about cells and their functions. The teacher follows the theoretical framework approach and, as they bring information, invites students to already take notes thinking about the game. This framework about how cells function is also crucial for kids to reflect on the characters and their possible interactions. The animation is called **はたらく細胞**, which in free translation means "Cells at work" (20 minutes).

3 On the day of the game, having already advanced in learning in Biology, the class is organized in groups of five members (it is essential to have at least four members to act as characters inspired by the characteristics of the cells and one more teacher). Each team is divided as follows: one of the students must be the master, who has the role of mediating the game and narrating the environment and the challenges along the way. The other players choose an archetype to incorporate during matches. Each archetype has unique characteristics and is associated with a human body defense cell, such as the Neutrophils and Eosinophils. It is a good idea for the teacher to have a list of defense cell characteristics to support and help the kids during the activity.

4 Each match takes place in five minutes (counted by the teacher, who must control the time, informing the masters and reinforcing details so that they do not forget what they should do). If the class lasts 50 minutes, it is possible to do 10 matches. During this time, players must solve the problem situations and solve the puzzles created by the master and presented along the way to advance the game and prevent the body where they live from collapsing. Each moment changes the dynamics of the game, making it agile and dynamic and encouraging players to make faster decisions representing their personas. They can also make use of "resources" received before the first match by rolling four dice. Each number 6 that comes out of the data gives the team a resource that can be used at any time. When employed, these features add extra dice to the current roll.

5 At the end of the game, the teacher organizes a debate round, provoking the students to evaluate the experienced path and to identify the learning gained.
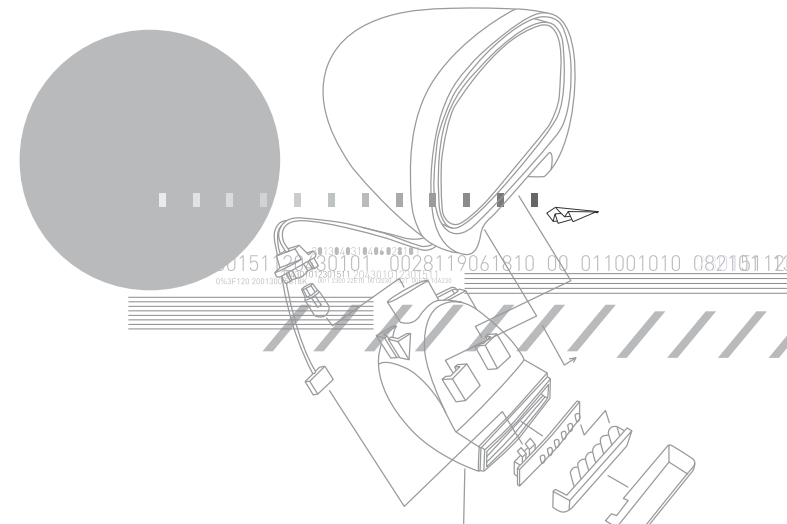
EVALUATION

Mastery and understanding of content, applicability of the game as a learning facilitator, and interdisciplinary integration are evaluated. To enable the kids to evaluate and experience, teachers can use generating questions, such as: "Was it possible to save the collapsed body?"; "What is the highlight strategy of each team?"; "Regarding the moves each team made, indicate a difficulty."

RESULTS

The integration of biology content with the ludic dynamics of RPG, from the perspective of Experiential Design, strengthened classroom learning and provided a different and innovative way to understand the functioning of the human body. The activity also encouraged teamwork and the development of skills such as creativity and argumentation. In addition to generating tangential learning triggered by the interest and need for research, held between the moment of the anime exhibition and the next class, when the game actually happens.
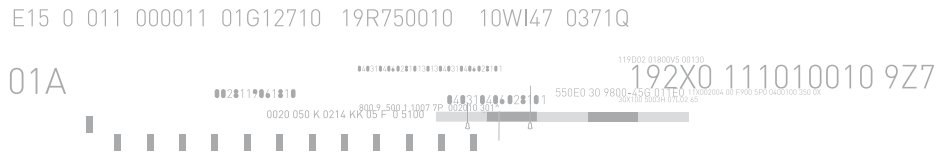
LEARN MORE

Article Exploring the Immune System
[http://bit.ly/eximunologico]

Shotgun Diaries game
[http://bit.ly/jogoSD]

- AMABIS, José Mariano; MARTHO, Gilberto Rodrigues. **Biologia das células**. São Paulo: Moderna, 1947. p.464.
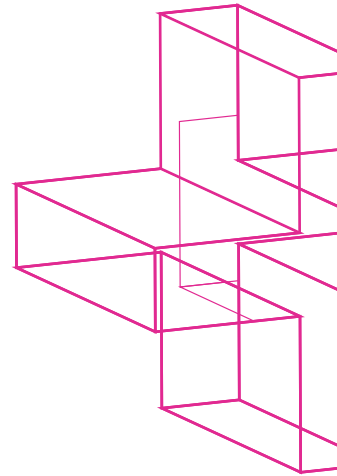
BAROQUE RPG

KEYWORDS

#GAMIFICATION
#RPG
#LITERATURE

AUTHORS

AMARO BEZERRA
SILVANA COCKLES

WHAT IS IT?

An activity that proposes the teaching of Brazilian Baroque literature through the application of the concepts and elements of Role Playing Game - RPG. Students take on roles of characters and create narratives, building fictional universes based on the Baroque literary style.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PORTUGUESE LANGUAGE

HISTORY

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

EMPATHY AND COOPERATION

KNOWLEDGE

CULTURAL REPERTORY

WHY DO IT?

The initiative invites students to research, read and debate the concepts studied about the Baroque to apply them in the creation of an RPG game. This exercise enables the application of knowledge in literature and integrates students. It also enables the development of skills such as creativity, collaboration, reasoning, leadership and rapid problem solving. RPG is extremely versatile and applicable in any situation regardless of available resources as it relies on imagination and logical thinking as its main tools. Therefore, it can be used in different subjects with different subjects and audiences.

RESOURCES

- Multimedia projector
- Computers with internet access
- Paper, pencil and eraser
- Two six-sided dice called in the game "d6"
- Character sheets[1] printed

CLASS TIME

- 10 50-minute classes

1. Character sheets
[http://bit.ly/rpgbarroco2]

REFLITA

Quais são as profissões dos pais dos seus alunos?

Quais delas não existiam 10 anos atrás?

HOW TO DO IT?

Students divide this activity into four parts: lectures on Baroque literature, collaborative study on the subject, creation of RPG and application of the game.

Role-Playing Game, also known as RPG, is a type of game in which players take on roles of characters and collaboratively create narratives. The progress of a game takes place according to a predetermined system of rules within which players can freely improvise. Player choices determine the direction the game will take.

1 The teacher begins by giving an oral presentation about the Baroque period. They also use movies and other references (see **Learn more**) to enable students to understand this historical context well.

2 In the second moment, the teacher gives the students a script with information and questions about Baroque literature. The class is divided into groups of five, who should collectively study and discuss the answers to each question presented in the material. After this guided study, the groups present in plenary the result of their work. The teacher presents a question and each representative of a team shares their answer. In this exchange, the kids and the teacher clarify doubts, complement information, thus all build, and deepen their knowledge on the subject.

3 After an immersion in the Baroque style, the educator proposes the third stage of this didactic sequence to the kids: the creation of a game based on the Role-Playing Game - RPG. The teacher explains what RPG is and how the Baroque concepts will be used in the creation of the game universe. They then deliver a **document**[3] with a main mission proposal (objectives), narrative, and characters. These initial guidelines will enable all groups to play based on a common starting point. Students remain organized in the same groups as in the previous activity and are invited to read the guidelines and construct game details from the main mission and other pre-defined elements. At this stage, it is important for the teacher to closely monitor each group. In the creative process, the kids may often want to mistake the characteristics of the Baroque style, so it is necessary to guide to avoid misinterpretation of the concepts of the time.

4 After the development of the games, the teacher proposes that the teams exchange the stories created with each other, so that they play with narratives they do not know. In each group, a student is chosen as a teacher and should read the narrative that will be played in detail to learn how to guide the classmates. The others choose their characters. It is a good idea that they indicate how they imagine these characters in pictures, to illustrate well the characteristics of their avatars.

5 The master presents the narrative universe and the main mission. The other members of the group tell a little about their stories and skills. From there, the game unfolds with everyone's improvisation. Players can research information for their moves, as they must be consistent with the context of the 16th to 19th centuries, Baroque period. At the end of the class, students should note the point at which they stopped the game to resume it at the next subject class.

3. Document
[http://bit.ly/rpgbarroco1]

6 The game ends when the main mission is successfully completed or failed. Ideally, groups can play for at least four 50-minute classes, but this can be tailored to the possibilities in each context.

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EVALUATION

The teacher gives grade to the collaborative study about the Baroque period, grading the correct answers. The process of creating and playing RPGs is not given a grade, but the educator invites students to evaluate the experience, identifying their learning.

RESULTS

During the process, the class became more integrated and collaborative. There was constant cooperation. Students were very interested in continuing to create role-playing games based on other course content. The evaluation grades have improved considerably, revealing qualified ownership of the content. In addition, RPG as a didactic resource improved the quality of school life, redefining the space of the classroom. The kids also improved reading and writing skills.

LEARN MORE

Brazilian movie, alma barroca
[http://bit.ly/almabarroca]

Expeditions Program – Barroco mineiro and Aleijadinho
[http://bit.ly/Baleijadinho]

- CEREJA, William Roberto; MAGALHÃES, Thereza Cochar. **Português – Linguagens**. São Paulo: Editora Atual, 2014.
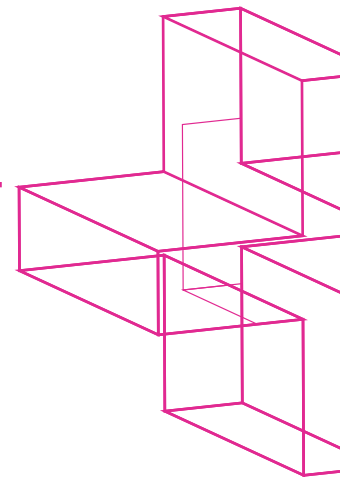
THE SEARCH FOR LOST GAMES

KEYWORDS

#GAMIFICATION
#CURIOSITY
#CARS

AUTHORS
IGOR MORENO
SANDRO MENEZES

WHAT IS IT?

It is an activity that simulates an "archaeological expedition" within the school space. The kids are invited to decipher a riddle from a series of clues gradually offered by the teacher. The strategy can be adapted to other contexts, themes and curriculum content, also strengthening the bond between students and teachers.

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

PROGRAMMING

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

COMMUNICATION

WHY DO IT?

How to start a course, a workshop, a school year instigating curiosity and the desire to learn? How to engage students to learn about a specific subject? How to create different opportunities for youth participation in the school space? This initiative draws on game-based learning and presents inspiring strategies that address these issues and desires that guide the planning of any educator. Since Archaic times, games have been present in the lives of human beings. Because these are ludic and creative practices, they can be broadly incorporated as a pedagogical strategy. Games enable interest and curiosity, foster collective work and cooperation, and enhance student engagement, which are challenged to decipher the information on the board. The activity can be performed with any board game, such as Go (Japanese game), Senet (Egyptian game) or even chess.

RESOURCES

- Computers with internet access
- **Royal Ur Game Rules**[1] printed (or game rules chosen by the teacher)
- **Replicas of the Royal Ur Game board**[2] (or another game chosen by the teacher)
- A Royal Ur Game board can be made using the following materials: cardstock, colored pens, dice and piece markers (beans, buttons, etc.).

CLASS TIME

- Two 50-minute classes

1. Royal Ur Game Rules
[http://bit.ly/regrasreal]

2. Replicas of the Royal Ur Game board
[http://bit.ly/tabureal]

HOW TO DO IT?

The teacher begins their planning by choosing a board game to use during the activity. In this experiment, the teachers used the **Royal Ur Game**, but the educator can choose any board game. After choosing, the teacher builds a board and the game pieces chosen, and can use recycled materials. The idea is to produce a board for every five students, because along the way, it will be necessary that several teams play simultaneously.

1 The activity begins with a presentation of the game and a contextualization about its origin, telling when and where it was created, how it was played and other relevant information. Ideally, perform this step in a room with computers with internet access, so that the kids can research about the game.

The Royal Ur Game is considered the oldest game in history, invented over 4,000 years ago. When it was discovered in Mesopotamia, archaeologists found, aside from the game, which was intact, a tablet containing its rules. It is a two-player racing game over a course of 14 squares.

2 After learning about the game, students are invited to organize themselves in groups (of approximately five members each) and experience a scavenger hunt. The goal is to find the Royal Ur Game board hidden in the physical space of the school. The teachers construct the following narrative to present this task: The Royal Ur Game, originally stored in the British Museum, was stolen and hidden in school and now the class needs to find it again. Teachers reveal some **clues**[3] for the start of the hunt and a maximum time limit of 20 minutes is set for the challenge.

3 The group that finds the game first should take it back to the classroom and receive one point, taking the lead in the game. There is a piece of paper in the hidden board game that will instruct them on a new challenge: to play the Royal UR Game. However, to do so, they need to solve an enigma which reveals the rules of the game. This enigma must be a riddle and can be in any language and resource. In this experience, the enigma was written using mathematical language. The team to solve it first gets a numerical code, receives a point and discovers that this code is the password to open a computer file with the rules of the game.

3. Clues

[http://bit.ly/buscajogs]

4 When the class comes across the rules, however, they are written in English. The group that can translate the corrected text first earns one point.

5 The course ends with all groups playing the Royal Ur Game. Each team is given a board with the pieces and a sheet printed with the rules. You have to read, interpret the rules and play. All groups play at the same time. The team that ends the game first wins a point. In the end, the group that scored the most points wins the contest.

EVALUATION

As it is a scavenger hunt, there is a winning group, but this is not relevant to the evaluation process. Teachers close the course by asking students to reflect on the experience and identify their learning, especially by observing new knowledge, modes of organization and communication.

RESULTS

The most important result of this activity was enabling and engaging the kids. They felt motivated, excited and really lived the archaeological expedition experience. Because it was an initiative that took place at the beginning of the school year, it also promoted several positive developments, such as: developing curiosity, persistence and cooperation; bonding between students, teachers and staff; knowledge of the school space and, consequently, appropriation of this space. These learnings have been transposed into other classroom experiences. This was a very remarkable activity, as several students commented on it throughout the year, which is proof of its influence.
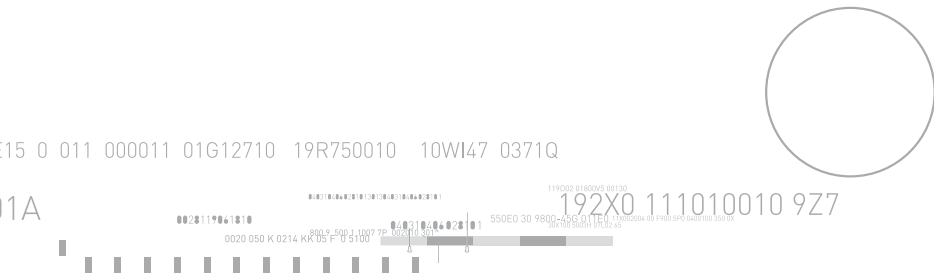
LEARN MORE

About the Royal Ur Game
[http://bit.ly/realUR]

Royal Ur Game
commented example
[http://bit.ly/exrealUR]

Process of translating the
rules of the Royal Ur Game
[http://bit.ly/tradregra]
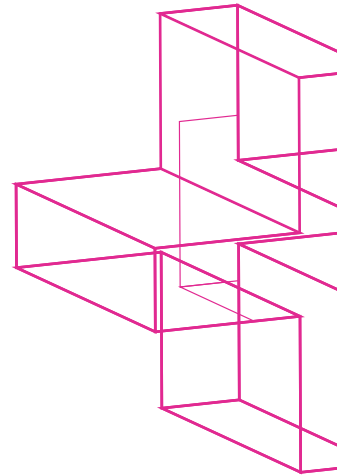
TREASURE CHEST OF PRIZED AUTHORS

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE LANGUAGE

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

KEYWORDS

#GAMIFICATION
#LITERATURE
#LITERATURE_CLUB

AUTHORS

SILVANA COCKLES
OBERDAN ALVES

COURSE

MULTIMEDIA   PROGRAMMING

TARGET AUDIENCE

ELEMENTARY SCHOOL   HIGH SCHOOL   ADULT LEARNING

WHAT IS IT?

Students participate in a gamified marathon in the library space, involving treasure hunts, riddles and clues that lead them to discover literary authors and titles, developing a taste for reading and investigating the universe of literature.

SKILLS

COMMUNICATION   KNOWLEDGE   CULTURAL REPERTORY

WHY DO IT?

Despite being a fundamental space at school, the library is not always an effective environment for experiencing and producing knowledge. Its collection is often little known and little explored by students. This initiative incorporates gamification elements suggested by the kids themselves to stimulate their approach and ownership of the library. Students' partnership with teachers was essential to qualify the proposal, but it is also a priori, an aspect of integrating the experience with the school community. In this way, they become protagonists of this adventure. The use of gamification is a challenging and fun pedagogical strategy to experience first contact with literary works and their authors. The experience of a very dynamic marathon allows the kids to approach writers and books without prejudice, subverting preconceived imaginary.

RESOURCES

- Various literary works
- TNT fabric, EVA, paper, glue, recyclable bottles, plastic cups, among others.
- Treasure chest
- Gifts for marathon winners. Suggestion: chocolates, pens, movie tickets

CLASS TIME

- 15 days of preparation and a 50-minute class to complete

HOW TO DO IT?

1 It is necessary to previously select short excerpts of literary works from the library collection. Selection should be careful and strategic, seeking authors and excerpts of books that can positively influence readers. The idea is to highlight a very engaging paragraph of a novel, or a stanza of poetry, for example. Excerpts need to be short, but they must be strong enough to impress participants. It is recommended to select excerpts that strikingly reveal the authors' style, so that this brief reading also serves as a gimmick for students wanting to know more about writers in the future. Part of the selected passages will be read during the marathon (around 30 works are suggested). Others may be printed and arranged in the physical space of the library as part of the setting.

2 It is also interesting to decorate the library with **elements that refer to the theme**[1] of the treasure hunt, as this will be the motto of the marathon. It is necessary to organize the space with tables and chairs, to accommodate the teams that will participate in the activity. At these tables, the initial puzzles for the game are set, which will serve as a starting and finishing point for the search for treasures. Each table shoots five distinct courses, i.e. five treasure-hunting trails. In a chest type box the different prizes for the winning teams at the end of the marathon are kept. It is a good idea to widely publicized the event on the school's communication channels to enable student participation.

3 Five teams of five participants are organized. Each group finds a separate book on their desk, with an excerpt of the outstanding work.

1. Elements that refer to the theme
[http://bit.ly/bauescrit]

Inside the book is a riddle. To solve it, students should read the excerpt of the work. It is recommended that each participant take the lead and read aloud the definite passage and the riddle that will lead to the discovery of the next book arranged on one of the library shelves. The location will be indicated on a small map next to the puzzle. When the second book of the route is found, it will have a passage marked for reading and another riddle, which will only be solved after reading. In this way, the trail will continue until the group has found and read the six excerpts from the books. It is important that both the chosen excerpts and the puzzles are short and easy to understand, so that there is agility in the search for clues. The idea is that the activity is fast and dynamic.

The winning team will be the first to find the six selected literary works for their treasure hunt trail.

Each round of the marathon develops as follows:

1

BOOK 1 EXCERPT **READING**

PUZZLE 1 SOLUTION

2

BOOK 2 EXCERPT **READING**

PUZZLE 2 SOLUTIONS

3

BOOK 3 EXCERPT **READING**

PUZZLE 3

And so on, until book 6, where there will be the final excerpt and the signaling that the treasure hunt is over.

4 Teams take a maximum of 15 minutes to finish the marathon. It is a short activity, which can be performed even during class breaks. The initiative can be adapted, however, as a longer marathon. In this case, students can participate individually. Instead of reading just one excerpt from each book, the kids may be asked to read the entire book. In addition, the puzzles can be more complex, requiring the participant to effectively read the entire work. In this extended version, the student who discovers and reads the six books first wins.

EVALUATION

There is no grade assignment. To evaluate the results, the library coordinator or the responsible teacher observes the students' engagement and participation during the challenge.
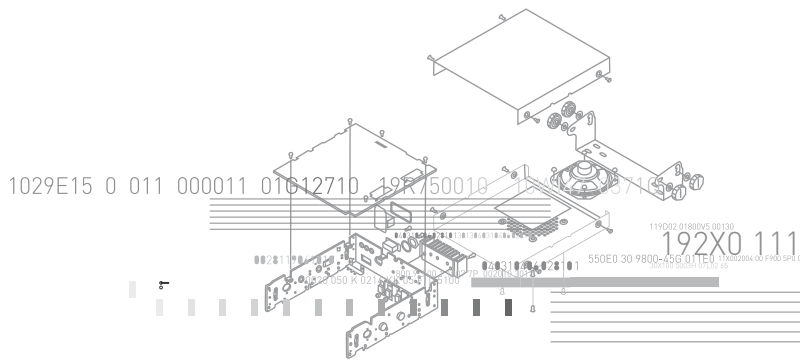
RESULTS

The experience generated a strong engagement among the participants, who were looking forward to the next round of the marathon. Many reported that they were surprised and impacted by authors and works read during the activities. Some had heard of a certain author, but they did not imagine the characteristics of their work. For others, it was the first contact with some writers. The kids stated that the experience generated a lot of curiosity about the authors and willingness to continue reading the book found. The reading marathon was also held during an event open to the community outside the school, NAVE de Portas Abertas [Open Doors NAVE]. At the time, many visitors, including parents and guardians, wanted to participate in the game. Thus, treasure hunting has also become an opportunity for integration among students, their families and the school community, which has amplified their results.

LEARN MORE

Treasure Hunt Game
[http://bit.ly/jtesouro]
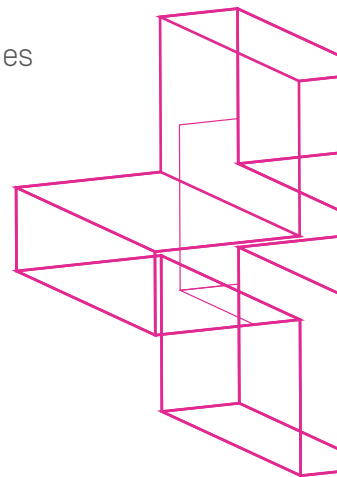
ORTHOGRAPHY GAME SHOW

KEYWORDS

#GRAMMAR
#GRAVE_ACCENT
#REALITY_SHOW

AUTHOR
PATRICIA OLIVEIRA

WHAT IS IT?

A game inspired by the dynamics of a reality show, in which students answer questions involving the use of the grave accent to stay in the "dispute" or gain "leadership". For the teacher, it is an alternative to the lectures and for students a fun way to study the curriculum content related to the class.

SUBJECT AREAS

LANGUAGES AND
THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE
LANGUAGE

TARGET AUDIENCE

ELEMENTARY
SCHOOL

HIGH SCHOOL

ADULT
LEARNING

SKILLS

KNOWLEDGE

SCIENTIFIC,
CRITICAL AND
CREATIVE THINKING

COMMUNICATION

WHY DO IT?

Teaching the mother tongue in the classroom, more specifically grammar teaching, has been the focus of many discussions that seek to establish new theoretical and practical bases. Curriculum content is far from the reality of students, often making no sense to them. It is important to create problem situations that enable the kids to reflect on the questions and formulate answers about the content worked, allowing the appropriate use of language. In order to create a ludic and dynamic environment for learning, one should seek pedagogical strategies that make the work lighter for the teacher and more fun for the teenager.

RESOURCES

- Internet
- Cell Phone
- PowerPoint (or similar free alternative, such as **Google Slides**[1] and **Canva**[2])
- Speaker
- Poster with a printed image of a house

CLASS TIME

- Four 50-minute classes

1. Google Slides
[http://bit.ly/slidegoo]

2. Canva
[http://bit.ly/apcanva]

HOW TO DO IT?

1 The activity begins with two theoretical classes, in which texts with dissertate-argumentative typology are read, emphasizing the use of the grave accent. The idea is to make an analysis of how it is used and to understand also why its use. The teacher demonstrates that its use is determined by conducting as well as differences in meaning. It also exposes practical situations for verifying the semantics that a statement presents when it is cross-referenced or not, for example: it asks a student to perform a role play as if they were washing their hand and then gives them a cloth and says: "hand wash this cloth". Or explore the difference between "the curtain runs" and "run to the curtain."

2 In the next two classes, the teacher glues the picture of a house with the class number on the board and explains that a game called BIG Crase Brazil [Orthography Game Show] will be played, in which everyone can participate ensuring their stay "at home". The educator needs to interact, taking on the role of the reality show host, so that kids get into the mood of the game and feel they are real participants. It is also important to create an environment that resembles that of TV shows and publicize the winner's prize, which is symbolic but will contribute to the engagement of the class.

3 Then, he/she presents 15 multiple choice questions and invites the first "house member" to answer, disputing their stay in the game. Write the candidate's name next to the box, and if they answer wrong, write down their name and explain that they have been eliminated. In many moments, taking advantage of the questions answered correctly, the teacher also summons other students to explain why the remaining alternatives are wrong, thus recalling knowledge about the rules of use of the grave accent.

4 Recap Game – When you have a reasonable number of kids eliminated from BIG Crase Brazil [Orthography Game Show], it is important to give students some time to review the content about using the grave accent. Then, in a playful way, the teacher summons the eliminated to return home and continue the game, this time with other questions. This is an important initiative to develop the desire of the students to overcome their difficulties with grammar rules and can be adapted to other content.
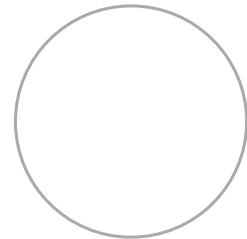
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01A

192X0 111010010 9Z7

EVALUATION

The activity is evaluated by observing the students' participation and by checking their understanding and reasoning regarding the use of the grave accent.

RESULTS

The use of a ludic strategy served as a stimulus of interest and energy for learning the grave accent, a content that does not usually engage and involve students very much. They paid more attention to the explanation of why and whether or not to use the grave accent in certain contexts. When performing the evaluation exercise soon after, the increase in the number of correct answers was noticeable, which reflected in better grades.

LEARN MORE

Rules for using the grave accent
[http://bit.ly/regcrase]

Suggested questions about using the grave accent
[http://bit.ly/qcrase]
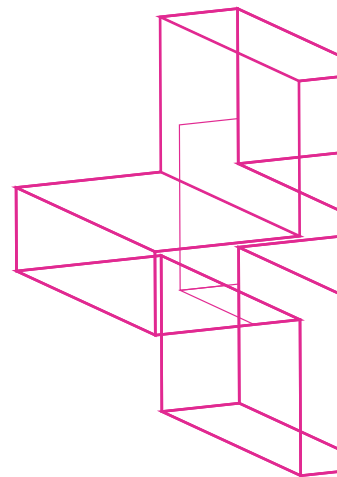
GAME.DOC

KEYWORDS

#GAMIFICATION
#DOCUMENTARY
#RPG

AUTHOR
ANDERSON SILVA

WHAT IS IT?

An invitation to a gamified audiovisual production. The path of making a video documentary is experienced as a game. In addition to engaging the kids, the initiative enables them to integrate knowledge from different subjects around the same theme.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

APPLIED HUMANITIES AND SOCIAL SCIENCES

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

PROGRAMMING

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

COMMUNICATION

DIGITAL CULTURE

ARGUMENTATION

WHY DO IT?

Carrying out an audiovisual project in order to integrate contents of different subjects in high school allows students to understand the facts in a contextualized way and in its complexity. Using gamification techniques in this course, the proposal unites the best of both worlds in the classroom: the kids learn tangentially, interpret and critically analyze context, and develop creative solutions. They are encouraged to solve problems, interpret and write, among other skills. The game is a language in the youth universe that can make the learning experience more fun, dynamic and engaging.

RESOURCES

- Computers
- Multimedia projector
- Adobe After Effects (or similar video editing software such as **KDEnlive**[1], **DaVinci Resolve**[2] or **Lightworks**[3])
- Adhesive sheets for making badges (seals)
- A4 coated sheets for badge board making

CLASS TIME

- 10 50-minute classes

1. KDEnlive
[http://bit.ly/KDEnlive]

2. DaVinci Resolve
[http://bit.ly/vinciresolve]

3. Lightworks
[http://bit.ly/liworks]

HOW TO DO IT?

The Dutch invasion of Brazil was the suggested theme for the production of the documentary in this experiment. Through it, it was possible to integrate subjects such as Portuguese Language, History, Sociology, Geography and the technical subjects of Audiovisual Production. During the activity planning, the educators created elements of the game that would structure the audiovisual production path. Ideally, teachers should always take into account the tastes of the kids and seek to identify which digital or analog games they already know, what their favorite game styles are.

1 The process with students begins in an integrated class, in which all teachers of the subjects involved present the proposal of gamified documentary production. The teachers organize an oral exhibition about the Dutch invasion of Brazil. This is not, at this moment, an in-depth class on the subject: the teachers just contextualize the theme and show the various facets of the knowledge it encompasses. The idea is to engage students and demonstrate research potential, as well as indicate ways for them to prepare themselves to autonomously investigate information on the project theme. At the end of this meeting, the RPG elements that will be the basis for the game are presented, namely:

Character clans: students organize themselves into work groups, each group forms a clan, names its clan, and creates a visual identity. The work of each group will be awarded, enabling each clan to gain advantages by completing the tasks.
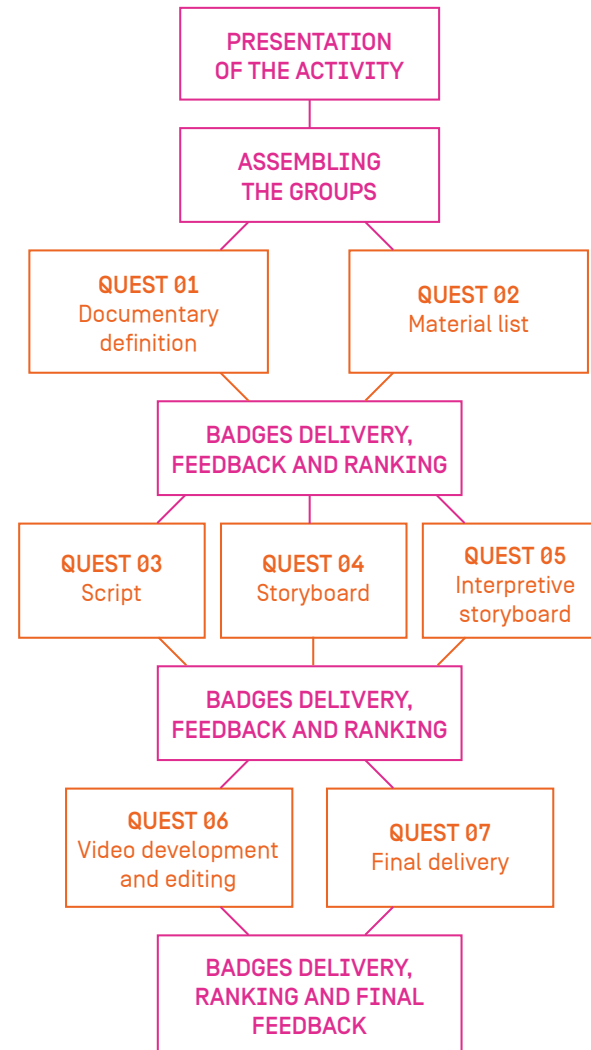
Character classes: clans can act by creating and interpreting characters. Each character is given a special ability (e.g. brave) and a distinctive name (e.g. warrior).

Rewards: for each mission accomplished by a clan or character, they gain rewards, such as new items, skills, or money (with in-game value).

Levels of evolution: each character has a level of points. According to the amount of points that are gained, the characters evolve, gaining more skills.

Statistics and performance: throughout the game, clan and/or character evolution statistics are presented so that each team or player can track their performance.

2 In the next class, students organize themselves in the clans, create the name and draw the symbol of their team, which can be a flag or a coat of arms. Then the educator introduces the kids to the rules of the gamified audiovisual production process. The activity is divided into seven missions. Each mission is a documentary accomplishment task that must be

PRESENTATION
OF THE ACTIVITY

ASSEMBLING
THE GROUPS

QUEST 01
Documentary
definition

QUEST 02
Material list

BADGES DELIVERY,
FEEDBACK AND RANKING

QUEST 03
Script

QUEST 04
Storyboard

QUEST 05
Interpretive
storyboard

BADGES DELIVERY,
FEEDBACK AND RANKING

QUEST 06
Video development
and editing

QUEST 07
Final delivery

BADGES DELIVERY,
RANKING AND FINAL
FEEDBACK

accomplished: documentary style definition, definition of required material, video script, storyboard creation, quality checking, and ultimately the final product delivery. These steps, following the vocabulary of RPG, are called "Quests."

Icon	Name	Description
	Oscar ▶	Reward for successful action, awards more points to the team that wins it (the amount of points is up to the action and the teacher).
	Clapperboard ▶	Awarding for excellent video editing, awards more points to team that wins it (the amount of points is up to the action and the teacher).
	Extra Life ▶	Provides a group with extra time to deliver a given mission without being penalized.
	Live Saver ▶	Causes one group to help another group with a particular task.
	Magician ▶	Rewarding teams who are able to perform activities ahead of time and maintain quality gives more points to the team that wins it (the amount of points is up to the action and the teacher).
	Time traveler ▶	Awards for teams that can do excellent historical and cultural research work, gives more points to the team that wins it (the amount of points is up to the action and the teacher).
	Script ▶	Awards for teams that can produce documentary scripts of excellent quality, award more points to the team that wins it (the amount of points is up to the action and the teacher).
	Visionary ▶	Rewarding teams that can provide varied interpretations of historical concepts within the documentary gives more points to the team that wins it (the amount of points is up to the action and the teacher).
	Genius ▶	- Awards for teams that are able to perform activities in an innovative way and able to interact with users, gives more points to the team that wins it (the amount of points is up to the action and the teacher).
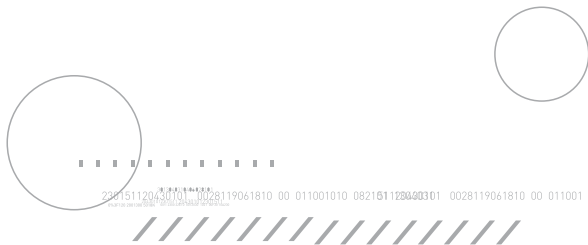
3 Throughout the completion of the weekly quests, each clan receives badges that recognize successful tasks and rank them according to deadlines and the quality of work performed. To earn the seals, students need to fulfill missions, but also have some kind of highlight in their activity, such as having a brilliant idea, writing a great script, producing a different storyboard, among others.

4 At this time of evaluation of the Quests, the teacher also provides structured feedback to the teams, pointing out the team's achievements and indicating points for improvement. After each rewarding moment, the educator consolidates instruments that demonstrates the scores of each team, comparatively. Depending on the score, clans can level up and choose a **character class**[4].

4. Character class
[http://bit.ly/gamedoc2]

5 With the completion of the documentaries, students meet with teachers so that everyone can watch the productions. Each aspect of the videos is commented, so that the final score is established considering the opinion of the kids. Finally, the teachers of the subjects involved in the process define the grade of each video.

EVALUATION

There is a procedural evaluation, carried out with the award, through the seals, for each delivery of tasks. The teacher also gives a grade to the videos produced. They are evaluated: deadline, engagement, creativity, adequacy to the studied content, technical and aesthetic quality. Students are also invited to answer a **questionnaire** that seeks to collect more data about their experience

Questionnaire
[http://bit.ly/gamedoc1]

RESULTS

The kids stressed that the experience was innovative and stimulating. Although gamification seems to encourage competition, the groups collaborated and helped each other constantly. For the development of documentaries, students did a lot of research and interviews. In addition, they searched historical sites and museums in the city, seeking to access the collection about the period covered. Another interesting aspect was the students' initiative to seek to deepen their knowledge of the subject of documentaries with specialists in the historical period, such as university professors.

LEARN MORE

Documentary produced by The Great Cat student group
[http://bit.ly/THEGcat]

Documentary produced by The Alliance student group
[http://bit.ly/Thealliance]

Article **Gamification for improving engagement in integrated high school**
[http://bit.ly/gamensino]
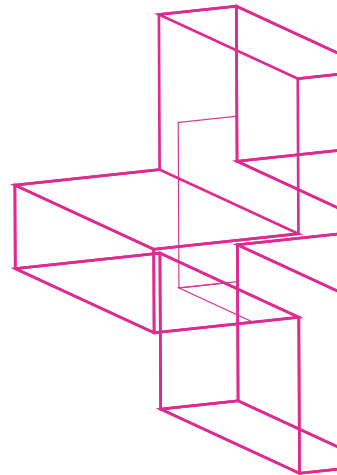
CHAPTER 4

WE LEARN TOGETHER

WE LEARN TOGETHER

This chapter presents practices that encourage the collective construction of knowledge through peer collaboration. Teachers indicate pathways that involve research, creation and group evaluation. One example is the practice of hunting history in the Yanomami tribe, which involves directed study of curriculum content and cooperative evaluations. Another initiative foresees the elaboration of mental maps aiming at the collaborative construction of knowledge. The didactic strategies presented in this chapter seek to arouse curiosity, facilitate the understanding of abstract concepts and support the resignification of relationships, content, spaces and times of study.
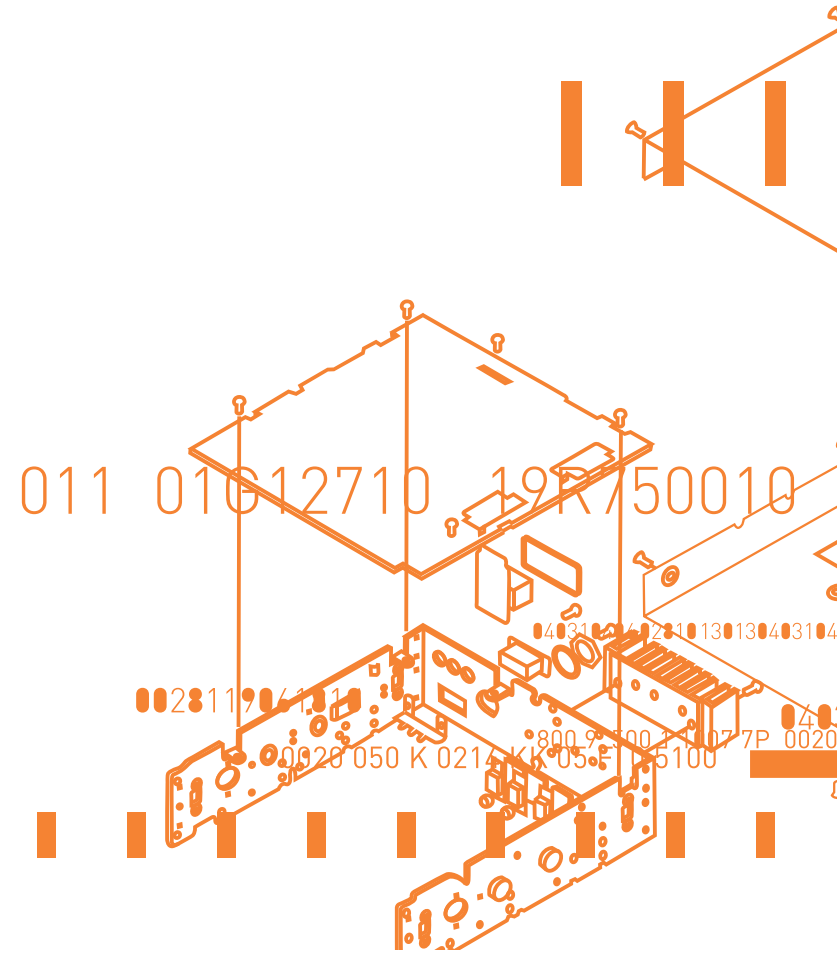
COLLABORATIVE POINT HUNTING

KEYWORDS

#EVALUATION
#REVIEW
#COLLABORATION

AUTHORS
AGNES D'ALEGRIA

WHAT IS IT?

Game that promotes evaluation and, at the same time, collaborative study of curricular contents. It is inspired by the story of the Yanomami hunting tribe, described by David Kopenawa in the book *A queda do céu: palavras de um xamã yanomami* [See **Learn More**] Students answer questions with the help of the class. Those who get them right award points to another colleague, so individual correct answers become collective gains.

SUBJECT AREAS

APPLIED HUMANITIES
AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PHILOSOPHY

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

RESPONSIBILITY AND CITIZENSHIP

EMPATHY AND COOPERATION

WHY DO IT?

In Kopenawa's narrative *A queda do céu*, a Yanomami hunter never eats from his own hunt, so every hunt is done in groups. Hunting is always a collective job, in which one hunter hunts for another, strengthening the sense of community and co-responsibility. It was this description that inspired the creation of this activity. By promoting, at the same time, a collaborative evaluation and study, the initiative provides the opportunity for deeper ownership of curriculum content and the development of skills such as empathy, collaboration and responsibility. Some kids, when they get enough scores in the report card to pass, become scattered in the classroom and lose interest in continuing to learn. In addition, the class is often divided by affinity into different groups that do little to effectively collaborate with each other. This didactic sequence has the potential to disrupt these behavioral patterns, enabling everyone's knowledge to contribute to the grades awarded. It is an evaluative action that breaks with the idea of individual grades, prompting cooperation in favor of learning.

RESOURCES

- Pre-organized questions about content to be evaluated
- Student school supplies: textbook, notebooks, notes

CLASS TIME

- Two 50-minute classes

HOW TO DO IT?

1 A few weeks before the activity, the teacher presents the dynamics of the evaluation, indicating which curriculum contents should be studied and how the game will work. Thus, all prepare in advance to participate.

2 On the day of the game, the teacher starts by asking the kids to arrange the chairs in the room in a circle. They may have their school supplies at hand: notebooks, textbooks, and other resources for consultation. When everyone settles into the chairs with their materials, the teacher remembers the rules of the game, clarifying doubts.

3 The teacher begins the activity by raffling the name of a student who will answer the first question. To formulate the answer, they can consult their own materials. If they still can't answer, they can ask for help from colleagues sitting on their left or right side. If correct, the score is awarded to another kid in the class. This student who receives the classmate's point is also chosen by lot. After receiving the grade, they are invited to be the next to answer a new question. In other words, the points earned by each student are always passed on to another colleague, creating a co-responsible process in which one depends on the other. If one misses the point, they will be asked a new question as a second chance because the primary purpose of the action is to promote the appropriation of knowledge. This cycle of questions, answers, and passing points is repeated until everyone has received a grade from their colleague.

4 At the end of the game, the teacher invites the whole class to evaluate the activity and share their impressions about what they experienced. The teacher may question them about the feeling of depending on each other for their rewards (in this case, the grade of the subject). It can also enable them to reflect on the importance of collaboration and co-responsibility.
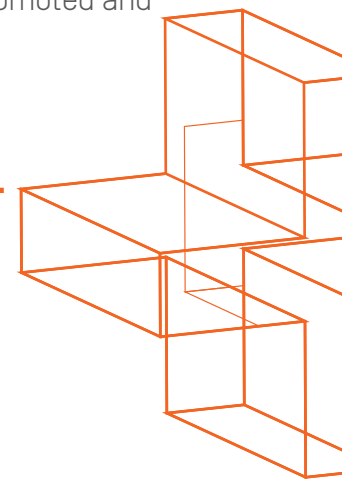
EVALUATION

A score is given to each answer presented during the game. The teacher must evaluate whether they are correct or not. However, it is also possible to take into account the engagement and participation of the kids, especially with regard to developing cooperation and co-responsibility.

RESULTS

The evaluation game was applied to first year high school classes in order to stimulate a collaborative study of Philosophy contents. Everyone was expected to interact and be aware of the answers presented. In the first five questions, the interaction was slower, but as soon as the kids began to get the answers right and the grades began to be distributed, everyone engaged completely in the activity. Even students who had already received a score remained attentive and committed to the mission of supporting their peers to earn their points as well. Even those who do not usually integrate so well into everyday classes actively participated. The results of the class in other tests and subsequent evaluations showed that the game really promoted and strengthened learning.

LEARN MORE

KOPENAWA, Davi & ALBERT, Bruce. **A queda do céu: palavras de um xamã yanomami.** Companhia das Letras. São Paulo. 2015.

LIVE CAROUSEL

SUBJECT AREAS

LANGUAGES AND
THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE
LANGUAGE

KEYWORDS

#ROTATION
#SCIENTIFIC_ARTICLES
#SELF-STUDY

AUTHORS
ANGELO JOAQUIM FILHO

TARGET AUDIENCE

HIGH SCHOOL

ADULT
LEARNING

WHAT IS IT?

A group dynamic that proposes knowledge sharing between teams. Each team socializes their studies of a scientific paper on a rotated chain with the rest of the class. Exchanges between students generate a movement that resembles the traditional carousel toy in an amusement park.

SKILLS

KNOWLEDGE

CRITICAL AND
CREATIVE THINKING

COMMUNICATION

WHY DO IT?

The stimulation of research facilitates students' learning when linked to pedagogical strategies that make curriculum content not only themes for the classroom, but also significant outside the classroom, mobilizing the development of skills for the personal and social life of the kids. The activity called Live Carousel puts collaborative group work in the center. For both those in leadership positions (those who put forward their ideas) and those listening to information and arguments, collaboration is exercised. Dynamics - which can happen from any curriculum content, from any subject - develops critical thinking and communication by inviting kids to debate. They strengthen the perception of the importance of research in developing good arguments.

RESOURCES

- Scientific articles chosen by the teacher based on the themes of the class
- Timer
- Comfortable space

CLASS TIME

- Four 50-minute classes

HOW TO DO IT??

1 Previously, the class is divided into 10 teams and each of them receives a separate article for study. These 10 articles address a unique theme (in this experiment, texts related to urbanization and environmental issues were selected). It is important for the teacher to pre-select the texts by observing if the language is accessible to their class. Students must have at least one week to study and organize a synthesis of articles for later presentation. During this period, the teacher is advising and monitoring the process.
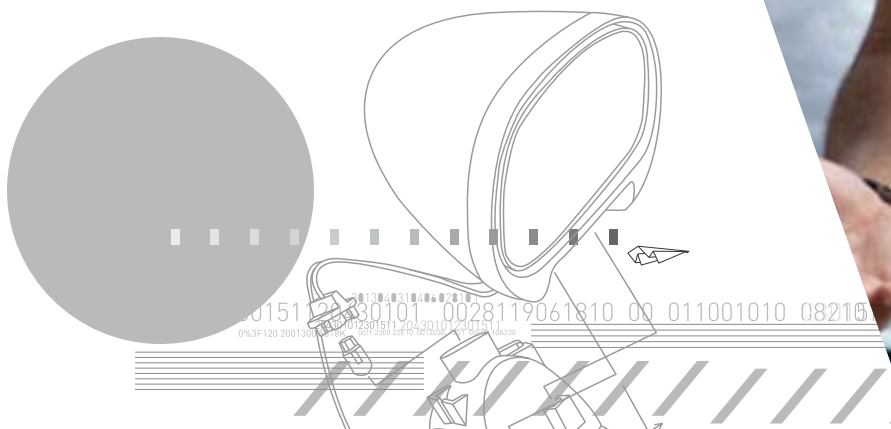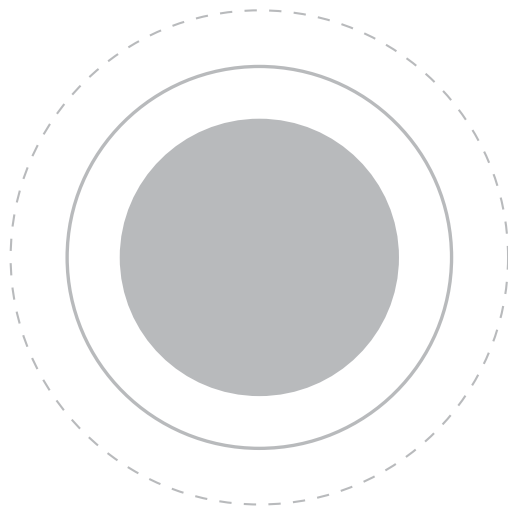
2 Each team elects a member to present the article to colleagues. These representatives from each group circulate sharing their team's reflections with the other teams. The teacher divides the total time available for the activity by the number of teams in the class. In two 50-minute classes, each group has 10 minutes to talk about their studies with another team.

3 Guided by the teacher, the representative of each group goes to the team next door. For example, the student responsible for the socialization of team 1 learning goes to team 2; team 2 goes to 3, and so on. In this dynamic, each kid has five minutes to present the synthesis of the article studied and the students who receive the guest will have the same five minutes to explain the

reflections on another article, which was studied by the host team.

4 This rotation dynamic continues until all team representatives have submitted their article to the other nine groups. In this way, all students in a class have access to the socialization of knowledge of all groups.

5 In the following two classes, there is a debate with the whole class, with the students exposing their feelings and their learning.
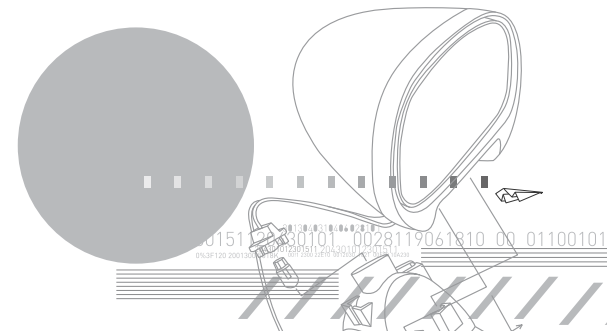
EVALUATION

There is a round of dialogue in which the students and the teacher evaluate the experience based on the following questions: what is the relevance of the articles in relation to the curricular contents worked? What is your perception of the importance of research? What contents can be highlighted? What did teamwork reveal to each participant? What was cool and not so cool about doing the activity?

RESULTS

From the evaluative indicators, it was observed that the practice can lead students to the perception of the relevance of reading, encouraging them to research and develop an active and critical posture, and promote the understanding of the importance of collaboration in the development of collective activities. During the evaluation, they chose not only content they experienced in their teams, but also in the other teams, making the dynamic successful in the sense of exchanging knowledge. The kids expressed the challenges they faced, such as the difficulty in understanding specific words used in the articles, and highlighted the advantages of the experience, such as the improvement in speech ability and articulation of ideas. In both personal and collective development, participants were more engaged, who became more curious and more open to learning from others.
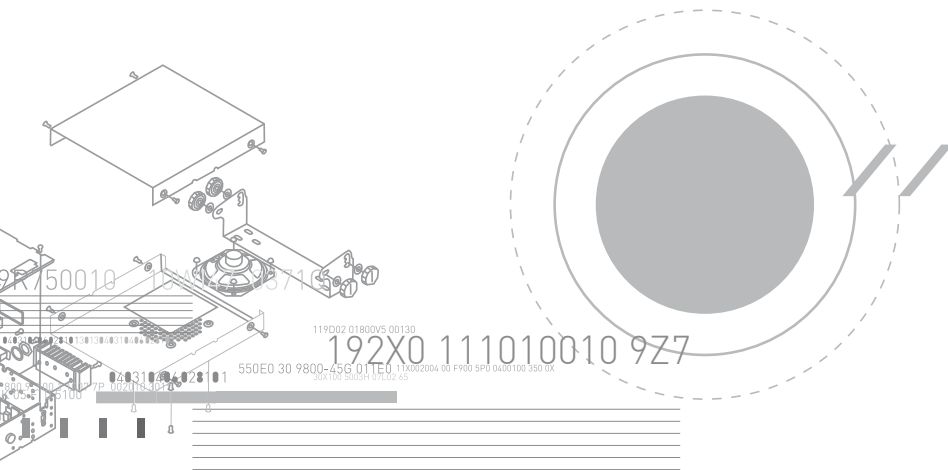
MAPPING IDEAS

KEYWORDS

#MENTAL_MAP
#ESSAY
#ENEM (NATIONAL HIGH SCHOOL EXAM)

AUTHORS
FLÁVIA CAVALCANTI

WHAT IS IT?

Collaborative work on the construction of mental maps, which helps in understanding and forming thematic repertoire for textual production. The activity stimulates the structuring of contents and ideas from the formation of groups that represent each subject area.

SUBJECT AREAS

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PHILOSOPHY

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

KNOWLEDGE

COMMUNICATION

ARGUMENTATION

WHY DO IT?

During the Exame Nacional do Ensino Médio- ENEM [National High School Exam] test, the candidate must produce an argumentative essay text of up to 30 lines, in addition to answering 90 other questions. The time devoted to this production, faced with an unknown theme, generates fear and anxiety and may compromise performance. Continuing work to stimulate the development of argumentation can minimize these feelings as students become more secure in linking ideas and knowledge. Making the mind map, introduced in a collaborative and participatory format, generates discussions and learning from what the kid already masters and knowledge of the others, which encourages research and deepening in other areas.

RESOURCES

- Colored legal paper
- Pens
- Computers
- Access to the free KUMU[1] platform [or similar as Mind Meister[2]]

CLASS TIME

- Four 50-minute classes

1. Kumu
[http://bit.ly/kumuapp]

2. Mind Meister
[http://bit.ly/Mmapping]

HOW TO DO IT?

1 The teacher begins with an explanation of the learning objectives of the activity and informs how it will be accomplished. Students are organized into groups, each representing one of four subject areas. The kids choose the team with their favorite area: math, humanities, languages and natural sciences.

2 The educator selects a theme on each subject area, focusing on the approach ENEM uses, usually linked to social issues. Themes are available on colored sheets of paper one color for each group. Students collaboratively begin by recording all the information and knowledge that comes up on the topic assigned to

their group. The purpose is to explore the themes to the maximum and write down all the ideas that come up about them. Annotations need to be synthetic, preferably keywords only. With the ideas noted, students organize the content by subject.
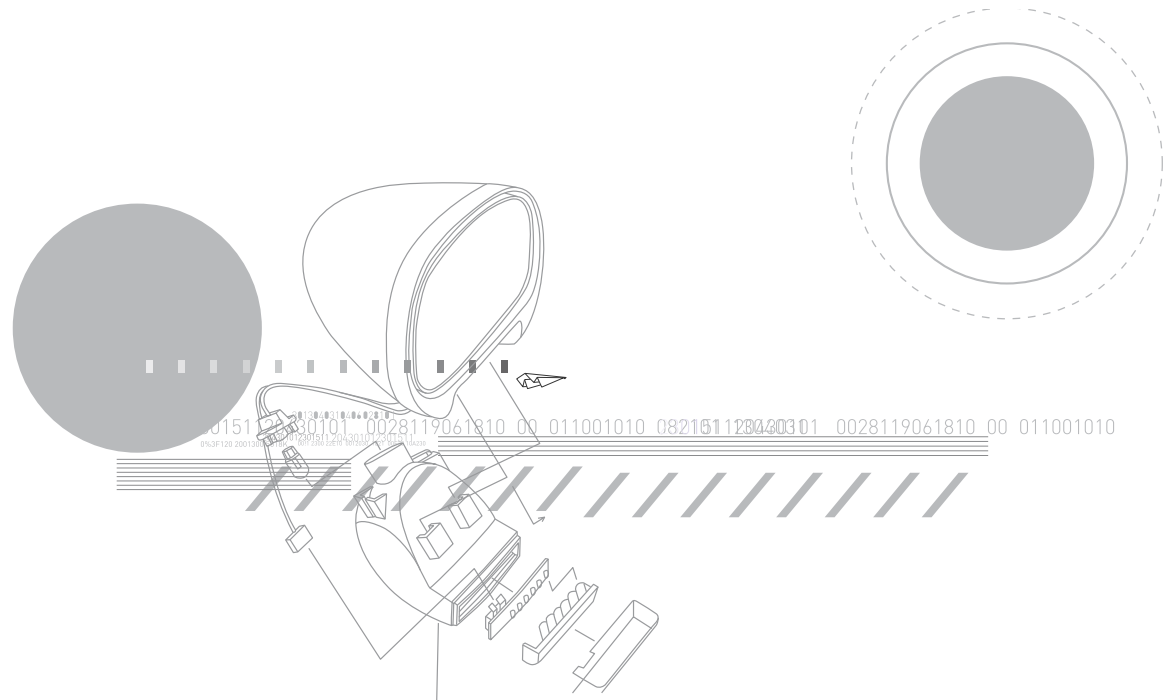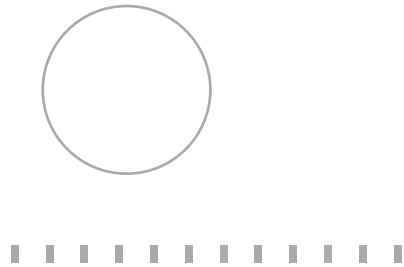
3 From then on, every 10 minutes, the themes are changed, for reading and contribution from other groups, until everyone has collaborated with the other teams. At the end, each team will have information and content included by the others.

4 The next two classes take place in a computer room to create the mind map. For this, the KUMU tool is used, which automatically organizes complex data forming beautiful and user-friendly maps. Paper records are included in the tool, which creates a web of ideas about a theme, organizing and ranking the contents.

EVALUATION

The teacher evaluates the course taking into consideration the following criteria: participation from the kids, which reveals the quality of group work; the quantity and coherence between the ideas and contexts connected in the mind maps produced.

RESULTS

Students actively participated in discussions and exchange of knowledge about all subject areas. Throughout the process, they interacted, studied, researched, and were confident about the subject content. Ownership and mastery over formerly fragile subjects was evident. In textual productions carried out at other times in the classroom, it was observed that the kids used the mind map construction feature to facilitate the organization of ideas throughout the narrative. Also as an extended result, during the correction of other essays after this practice, it was possible to notice the presence of many literary, historical allusions, philosophical and sociological citations and the use of statistical data as a way to strengthen the association and argumentation in defense of the topics addressed.
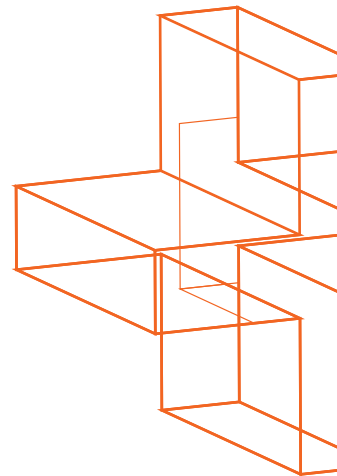
LEARN MORE

Text on mind maps and learning:
[http://bit.ly/Mapaprender]

Text about mind maps and memorization of college entrance exams content:
[http://bit.ly/mapasmemo]

#CROSS-READING

AUTHORS
SILVANA COCKLES

WHAT IS IT?

A collaborative movement for sharing book reviews that encourages the kids to broaden their literary repertoire. The purpose is to pleasurably and playfully challenge students to describe their reading experiences and impressions, thereby inspiring other classmates.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE LANGUAGE

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

SKILLS

CULTURAL REPERTORY

COMMUNICATION

DIGITAL CULTURE

WHY DO IT?

Reading is an important exercise for skill development as it stimulates writing and critical thinking, as well as helping to develop a social, political and sensory way of looking at things. However, kids are not always motivated to read voluntarily. This practice proposes to form new readers, fostering interest in books and enabling the formation of an environment conducive to coexistence and study, which leads students to experience various discoveries. The library of Cícero Dias Technical High School/ NAVE Recife expanded its functions and actions, seeking to configure itself as a space for curricular integration and autonomous production of knowledge. This is one of the initiatives created with the purpose of mobilizing the collaboration between the students and the appropriation of this space by them. By being invited to join a literary community and exchange their reading impressions, they also broaden the scope of library activities, positively influencing the entire school. The book has the power to convey affectivity, pleasure, restlessness and this is the desired profile for this community.

RESOURCES

- Diverse literary collection (if not, a book exchange movement within the school or access to free books on the internet can be encouraged)
- Computer connected to the internet
- Google Forms[1] platform similar or similar for form design
- Script[2] for creating the literary review
- Pinup.com[3] virtual platform, or similar, for creating virtual text mural
- A3 paper for tagging

CLASS TIME

- Two months from the book loan date in the library. It is an extracurricular activity of continued accomplishment.

1. Google Forms
[http://bit.ly/Gformulário]

2. Script
[http://bit.ly/leicruz]

3. Pinup platform
[http://bit.ly/PGpinup]

HOW TO DO IT?

1 Students are invited to be part of the literary community at the time of borrowing a book from the school library, or when they participate in periodically promoted literary exchange events. Joining the community is simple: just create a profile on the virtual platform used for this purpose (in this experience, the Pinup.com platform). Participants also enter their email addresses so they can always receive information about campaigns and library-related activities.

2 Upon entering the literary community, the kids are invited to present the book

they have read. For this, they write a review about the work, sharing their impressions, affective memory and sensations with their colleagues. The idea is that reviews can capture the essence of books from the reader's eye and thus arouse interest or suggest reading to other students.

3 In addition to the review, students also write some keywords related to the book and search the internet for an image that symbolically translates their main feeling about the title read. We recommend that you search for royalty-free images posted under the **Creative Commons** logo. The kids can also choose to create an illustration or photo of their own. The review, keywords, and image are sent, by filling out a form, to the library staff, who follow up on this production. Then the content is posted on the virtual board of the literary community. This board is circulated

to every school, especially students who come to the library for book lending. They are invited to read the presentations written by colleagues before choosing a work and may leave comments and questions to the authors of the reviews.

4 When the library professionals gather a certain volume of reviews, an intervention is promoted in common areas and in the school. A3 and A4 size posters are created with the material produced by the students. On each poster, there is a review printed on one side and on the other, the image, accompanied by one or more keywords, which serve as tags in this advertising campaign. The posters can be hung on a tree in the courtyard for reviews to symbolize their fruit.

5 This whole journey, from young people joining the literary community to the review campaign, takes time and requires persistent and continuous work by the library staff and other school professionals, such as Portuguese language teachers, that can support the production of texts. To further strengthen the action, a referral marathon can be organized, with a special day for teachers and students to suggest book titles.

A student sitting in profile for the picture in front of a computer. He is holding an open book in one hand, and is smiling toward the camera at a second person. Of this, only the hands appear in the photo, which are resting on a keyboard.

EVALUATION

As this is an extracurricular activity, there is no grade assignment or any formal evaluation of the texts and images posted on the virtual platform. However, the library staff monitors and evaluates student adherence and periodically creates some kind of symbolic award for reviews most commented on by peers.

RESULTS

From the initiative, it was possible to observe an increase of visits to the library and an affective appropriation of the space. Upon learning of the proposal, students were excited to access their peers' literary indications and engaged the community very easily. On the other hand, the kids who had their reviews posted felt prestigious and empowered as critical authors and readers, becoming even more engaged with the reading and book-sharing movement. Library staff and teachers reported that community building expanded dialogue and informal exchanges about literary works, which influenced learning outcomes in language subjects. The experience contributed to the development of creativity, writing and new ways of perceiving the social and cultural aspects of reading.

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CÍCERO DIAS

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LITERARY JOURNEY

KEYWORDS

#EVALUATION
#LITERATURE
#COLLABORATIVE_QUIZ

AUTHORS
AMARO BEZERRA

WHAT IS IT?

An evaluative activity inspired by knowledge test marathons. Divided into teams, students support each other to answer questions about literature over several classes. The proposal is to involve young people in the test in a ludic and fun way, turning the evaluation into a collaborative game.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

ABC
PORTUGUESE LANGUAGE

ART

HISTORY

PHILOSOPHY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

CULTURAL REPERTORY

CRITICAL AND CREATIVE THINKING

EMPATHY AND COOPERATION

WHY DO IT?

Many students try to memorize the content before the evaluations, but this knowledge does not gain effective meaning. In general, almost everything is forgotten after the tests. This activity transforms the moment of evaluation into a collaborative study process, enabling the kids to effectively take ownership of curriculum content. As this evaluation is a marathon that develops over several classes, it also allows to work, in an integrated way, historical and philosophical data of the literary movements, their main works, authors and fundamental texts. By transforming the evaluation into a collaborative game, the teacher engages students in the process through a ludic dynamic, creating other motivations for the study.

RESOURCES

- Computer
- Multimedia projector
- Printed game questions
- Class name papers for students in the draw
-

CLASS TIME

- 10 50-minute classes

HOW TO DO IT?

1 The teacher starts by informing that, in some classes, will promote a Literary Day and explains that it is a quiz format evaluation. They present the rules and asks everyone to study the literature content that was presented in the quarter. It should be made clear that overall scores will be awarded to the groups that will form during the game and that from that point onwards, they will be co-responsible for the result. Some students (maximum eight) assume the role of organizing committee. These kids will participate in the activity as monitors and support the teacher in organizing the event.

2 The organizing committee will meet with the teacher to decide together the rules of the game. It is this group that researches and formulates the questions that will be used in the marathon and, for this, can collect suggestions of questions with the rest of the class. The teacher indicates possible **references and models**[1] for formulating the questions. The monitors will also decide the number of rounds, the value of each round and the value of the final recovery round. The teacher follows this production, answering questions and reviewing the questions proposed by the students. Prior to the first round of the marathon, the committee must prepare the material with questions and the names of each team member for the draw.

3 Before the start of the game, the class is divided into groups. Students on the organizing committee support the teacher in leading the activities. It is important that, at this moment, the teacher has a **table**[2] to note the score. The process takes place in four rounds, each in a 50-minute class:

- **ROUND 1:** One member from each team is drawn to represent the team and answer the first question. The committee draws the question, which is projected on the wall of the room. By draw order, each group representative will have two minutes to respond. Faced with the four answers, the whole class discusses the question and evaluates which answers are correct. The teacher assigns the grade to each group, with 2.5 points the maximum grade for the round.

- **ROUND 2:** One member from each team is drawn and must nominate a colleague from the same team to assist them in the response. The pair has two minutes to answer the question. The class evaluates the correct answers and the teacher assigns the score to the teams, with 2.5 points the maximum grade for the round.

- **ROUND 3:** The question is drawn and all team members should think about the answer collectively, presenting to the committee the correct alternative. The group also has two minutes to respond. Everyone debates the answers

1. References and models:
[http://bit.ly/jornadalit1]

2. Tabela:
[http://bit.ly/jornadalit2]

and evaluates their correctness. The teacher gives the grade, with 5 points the maximum grade for the round.

- **ROUND 4:** Round 4 is only for teams that have failed to score above average 6.0. In this case, they are offered the opportunity for a final round of recovery, with points applied as follows:
  - the group that did not score in previous rounds will seek to score 6.0 points;
  - the team that has reached 2.5 points will seek to reach 4.0 points;
  - The team that has reached 5.0 points will seek to reach 2.5 points.

4 The teacher ends the literary journey by inviting the kids to evaluate the experience and identify their learning.

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CÍCERO DIAS

EVALUATION

The teacher assigns points to the teams according to the correctness of the answers presented during the marathon. Students on the organizing committee, however, are evaluated on the following criteria: research organization, question formulation, and participation in leading the literary journey.

RESULTS

The initiative strongly engaged the kids, allowing them to experience a process of evaluation in a ludic way. Since the activity is performed in groups and the score is attributed to the collective and not to the individuals, each felt responsible for the result of all. This made them study hard, further expanding and deepening the knowledge on the topics covered in the subject. Many even searched for complementary content in books and on the Internet, intensifying the movement to prepare for participation in the evaluative game. As the course was experienced over several classes, as it progressed, the kids became more curious and more challenged to better prepare themselves to answer the questions.

WHAT IS THE MOVEMENT?

KEYWORDS

#QUIZ
#LITERARY_MOVEMENTS
#ENEM (NATIONAL HIGH SCHOOL EXAM)

AUTHORS
FLÁVIA CAVALCANTI

WHAT IS IT?

A cross-class challenge, organized as a quiz, which uses various Brazilian literary movements as its theme. The dispute creates a learning environment for discovery. No matter who wins, knowledge is shared with everyone in a ludic and exciting way. Students can be characterized (with costumes) as characters that marked the Brazilian literature.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE LANGUAGE

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

CULTURAL REPERTORY

KNOWLEDGE

EMPATHY AND COOPERATION

WHY DO IT?

In order to visit the literary movements that traverse Brazilian history, the practice contextualizes society through its interpretation of written art, including preparing students with knowledge emphasized in Exame Nacional do Ensino Médio- ENEM [National High School Exam]. The characteristics of the authors are worked on involving the works and their characters, as well as the historical peculiarities of each movement and what transformed and inspired humankind in each era. Literature is one of the contents that can guide the history of a society. It is essential to understand where the literary construction of a language went, especially to understand social contexts. This didactic sequence proposes that the knowledge be driven by the perception of the characters' world, a more engaging experience that provides more meaningful learning.

RESOURCES

- Costumes
- Timer
- Scoreboard
- Large and adequate space, such as an auditorium

CLASS TIME

- Six 50-minute classes

HOW TO DO IT?

To prepare students for the moment of the game, the methodology of the **Live Carrousel** used in previous classes, working the theme of literary movements with each class separately.

1 The activity takes place at a time after the study and/or research on literary movements. Taking advantage of the dynamics of the Live Carousel - in which the class interacts, through a rotation between groups, for an exchange of knowledge - the kids are introduced to the purpose of the practice and divided into teams chosen by lot in the first two classes. At the time of the Carousel, students have the opportunity to deepen the elements studied.

2 The teacher presents the guidelines for the next step: the game that will be played between different classes. The activity is conducted by student-monitors and the teams they wish can characterize themselves as characters representatives of the studied literary movements. Each class creates **a set of questions and answers**[1] for the competition, based on the movements worked on.

3 The game itself is performed in two classes, in a large space, such as an auditorium. It is possible to create new scoring rules before the match starts, but it depends on the two participating classes agreeing. Thus, the draw of the class that starts the match is

1. Perguntas e respostas:
[http://bit.ly/qualmovimento1]
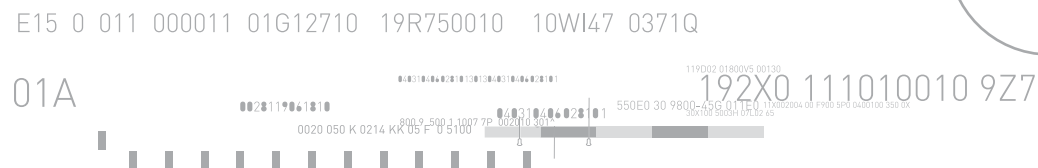
made. The set of questions, with help from the teacher, will score positively or may cause the class to lose points if the answer is not valid. The number of times you can answer and ask for tips or the number of people who can answer the same question is set before the match starts. However, a high number of tips for answering a question will lower its final score. Competition develops in the context of components of literary movements, such as authors, works, characteristics and characters. The winner of the competition is the class that gets 150 points first.
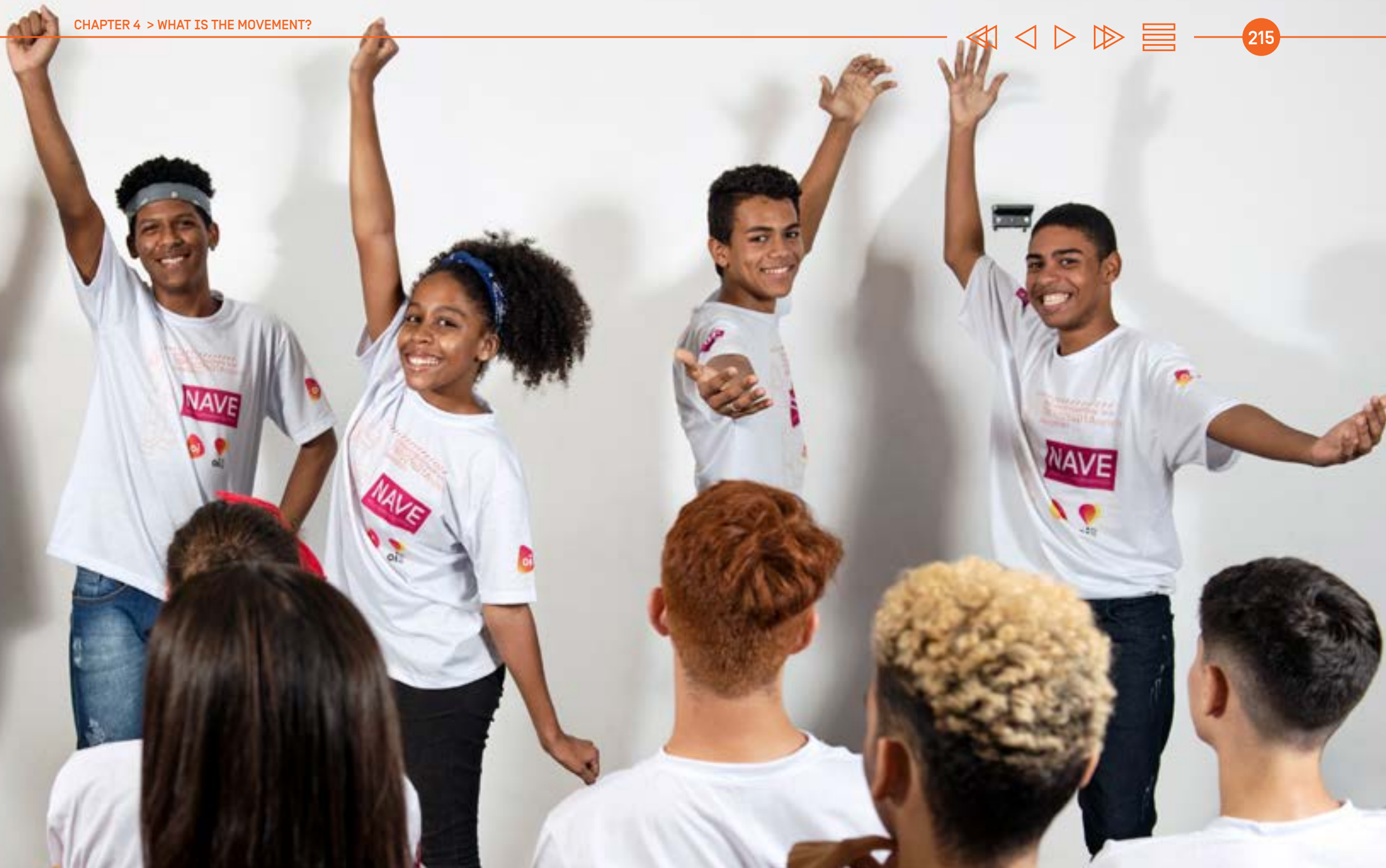
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EVALUATION

It is possible to perceive the security around the contents by observing the quantity and quality of the questions and answers and evaluating how the students explore, through them, the interpretations that translate their understanding around the characters and situations related to the subjects addressed. In addition, active participation in the game can show levels of involvement with the practice.

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LEARN MORE

"Ludic in the classroom":
[http://bit.ly/ludsala]

RESULTS

The kids were able to interact in a relaxed way with the contents of Literature and its historical and social contexts, building, more safely, a global view of literary movements, their meanings, some of their innovations, reflections and their exponents. In the textual production performed soon after the complete dynamics, it was possible to notice the presence of literary and historical allusions that involved authors and their characters, as a way to strengthen the association and argumentation in the defense of the thematic approached. It was also noticed the use of language coming from research materials performed as a basis for the study during the preparation for the game. It also served as a moment for the educator to rethink the classroom dynamics, in order to make it more ludic, participative and collaborative, with the use of games in a more exciting experience.
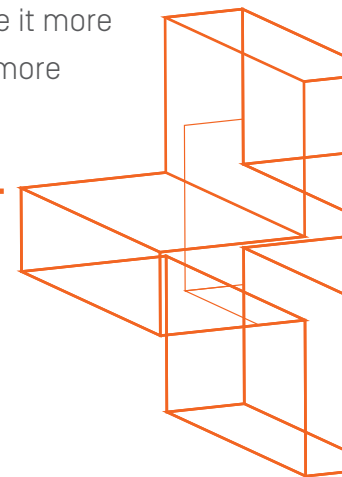
FOOD IS HEALTH

KEYWORDS

#INTEGRATION
#HEALTHY_EATING
#RESEARCH

AUTHORS

MARIA CRISTINA MARTINS, ANDREA PIRATININGA, DANIELA BAHIA, MARTA FRANCESCUTTI, NILMA MEDEIROS

WHAT IS IT?

An integrated research project on healthy eating, which articulates learning from the curriculum contents of Biology, Chemistry, Physics and Geography, aside from providing opportunities for the development of various skills, such as curiosity and autonomy when facing the subject.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHNOLOGIES

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PHYSICS

BIOLOGY

CHEMISTRY

GEOGRAPHY

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

SELF-AWARENESS AND SELF-CARE

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

WHY DO IT?

Articulating curriculum content with students' everyday issues is a fruitful way to enable meaningful learning. Many kids are known to eat poorly, with little variety of food and over-processed foods, including health problems due to poor nutrition. They also often overlook the preparation of meals and the differences between ingredients, which makes it difficult to reflect on the relationship between food and health. Proposing collaborative and interdisciplinary research on food is also a way of creating opportunities for students to understand that the division of subjects is a mere didactic resource, because the understanding of the world is simultaneously crossed by diverse subjects.

RESOURCES

- Computers with internet access
- Multimedia projector
- Foods that students will provide according to their research results

CLASS TIME

- 20 50-minute classes

HOW TO DO IT?

Because it is an integrated project, it is critical that teachers address issues related to food from the perspective of their subjects. The idea is that the classes help them to understand more the researched themes and to understand the interrelationship between the contents. Therefore, it is worth noting that they can plan these collaboratively classes. It is important that teachers set aside time for their subjects so that kids can work on research, and this should also be a joint organization between them. In the experiment, each teacher booked two 50-minute classes over each quarter. Generally, these times for focus on research happen in the computer lab.

1 Teachers start by presenting the proposal of the research project on food, which will be developed over approximately four months. It is important that they seek to briefly introduce the topics so that the kids understand the possibilities of each research and can choose according to their interests. The class is divided into groups of up to six members and each team can choose one of the following themes:

- Carbohydrates
- Lipids
- Protein
- Bioactive substances
- Types of diets
- Organic foods
- Disorders
- Urban agriculture
- Food handling and preservation
- Chemical additives
- Agrochemicals
- Diet and light
- Food myths
- Food waste
- Hunger and misery
- Processed Foods × Real foods
- Transgenic foods
- Thermogenic foods
- Food supplementation

After choosing the theme, a schedule is built stipulating the beginning and end of the planned steps for the journey.

2 **RESEARCH:** Students use the time made available by the teachers to research and study autonomously on the chosen subject. Despite being a research process led by kids, it is essential that teachers are present at these times, supporting and guiding each team individually. They can also take the time to talk about using online search engines and discuss the reliability and credibility of information sources. They can also teach how to properly assign references and discuss the differences between citation and plagiarism. They can also indicate search sources such as videos and text (see **Learn More**).

3 **SYSTEMATIZATION:** The kids then work on producing a research report. Teachers should guide them on how to select and synthesize the information collected. Each group follows a specific report template, reflecting on the biological, chemical, physical and geographic aspects of each theme. At the end of the quarter, the teams complete the reports, defining the format of the final product (websites, videos, slides, interventions, infographics, etc.).

4 **CULMINANCE:** The teams present the final product with the synthesis of their learning to the whole class. Each group has between 10 and 12 minutes for oral exposure to a board formed by teachers of integrated subjects.

5 **SHARING:** The course ends by holding an event called *DeGostar*, in which students prepare and taste food. Each group has a solid food

and a drink. The guideline is to avoid industrialized or processed products. Another challenge is to prepare recipes that contain ingredients in their entirety (with peel, pulp, etc.), seeking to encourage the full consumption of food. It is a celebration!

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EVALUATION

The evaluation is made by all teachers involved in the project, considering the participation and involvement of students, the appropriation of knowledge, the quality of systematization and presentation of the research, as well as the care regarding the sources of information cited as references (reliability) and credibility).

RESULTS

The activity was received with great enthusiasm by the students, who welcomed the research topics with curiosity. In the end, they were surprised by what they found and realized that, until then, they were unaware of the complexity and diversity of these themes, adopting healthier habits. Many even brought new data and information to the teachers, which made the activity enriching for them as well. Throughout the process, the kids acquired new research skills, which made learning autonomous, investigative and collaborative.

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CÍCERO DIAS

LEARN MORE

Challenges to eating healthy Guide
(http://bit.ly/desauda)

Real food Video series
(http://bit.ly/comiver)

From the field to the table Video series
(http://bit.ly/campmes)
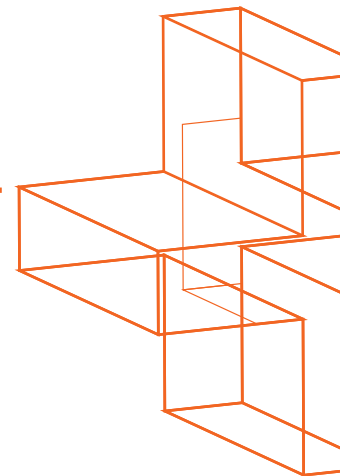
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CHAPTER 5

#YOUTHCULTURE

#YOUTHCULTURE

The use of digital technologies and the integration of languages stimulate changes in the ways people create and express themselves. In one of the activities proposed in this chapter, students create fables articulated with contemporary social facts through memes. In another practice, the kids study abstract concepts of physics from the perspective of parody construction. The chapter also raises reflections on maker culture and the experience of a space for media production and experimentation in the school context. The proposal is to identify, within the multiple convergences of technologies, media and languages, opportunities for meaningful and hands-on learning.

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FABULOUS MEMES

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

ABC

PORTUGUESE LANGUAGE
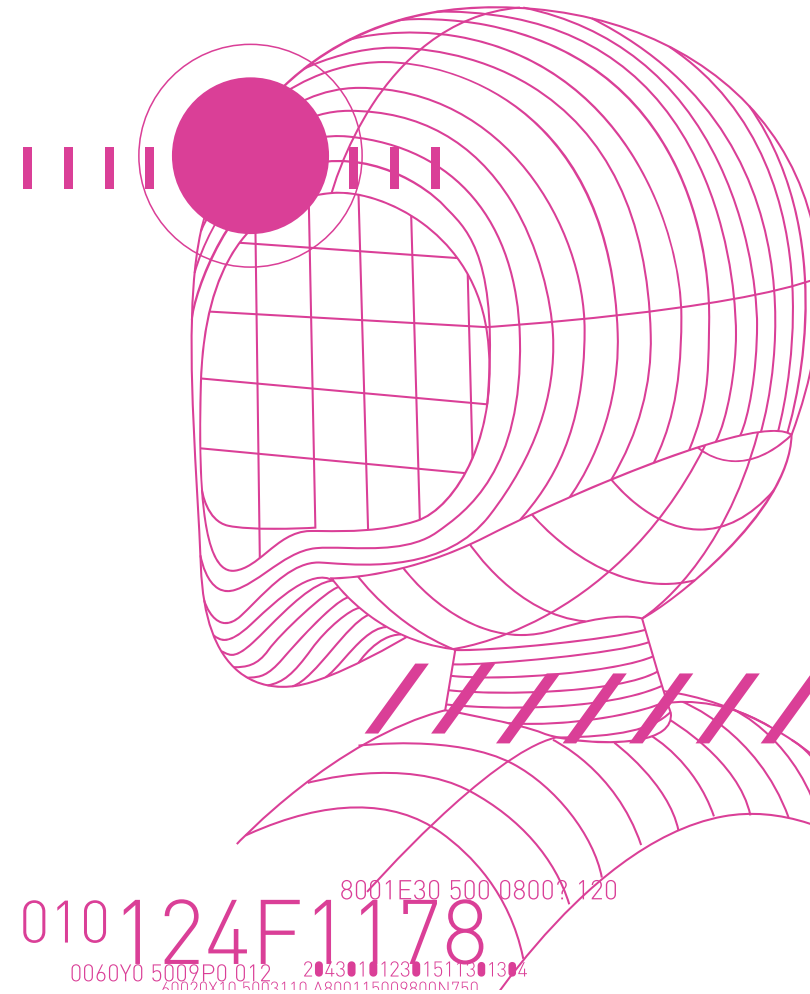
KEYWORDS

#FABLE
#MEME
#CREATIVITY

AUTHORS
PATRICIA OLIVEIRA

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

WHAT IS IT?

Students create memes that articulate fables with relevant social facts, developing creativity and reflecting on contemporary events that impact society and one's life. The exercise allows one to understand the intertextuality between literary genres or **intergenic**, a linguistic phenomenon in which one genre takes the form of another.

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

COMMUNICATION

WHY DO IT?

Despite being high school curriculum content, the fable can often be considered by kids as a children's textual reference. This didactic sequence enables the articulation of contemporary social facts with the millenary genre and the new language of the meme, strongly engaging participants for the appropriation of knowledge about the Portuguese language. The pedagogical and updatable value of fables becomes evident, as well as the social function of texts for the history of humankind. Through this experience, students reflect on the historical context of the production of fables and memes. The exercise of uniting the specificities of both genres in one production stimulates and challenges creativity by developing artistic, writing and reading skills.

RESOURCES:

- Cell Phone
- Computers
- Internet access
- Power Point (or free alternative) similar as Presentations
- **Google**[1] and **Canva**[2])
- Speaker
- **Meme Generator**[3], **Google Photos**[4] e/ou **Giphy**[5] apps

CLASS TIME

- Six 50-minute classes.

1. Google presentations
[http://bit.ly/2WlUgGJ]

2. Canva
[http://bit.ly/canvv]

3. Meme generator
[http://bit.ly/GenMeme]

4. Google photos
[http://bit.ly/Gogpho]

5. Giphy
[http://bit.ly/Giphya]

HOW TO DO IT?

1 The activity begins with an expository class, in which the fable textual genre is explored with the students. The teacher brings information about the creation of this genre, its structural characteristics, its functionalities and the ways of doing it. It also enables the class to relate fables to events in our daily lives. This reflection enables the kids to understand that this is a very pedagogical textual genre, often bringing lessons to readers and inviting them to behave more positively toward personal and collective interests. This class could have participation of a school history teacher, who brings more data about the historical context in which the fables were created, presenting the moments lived by their authors. Examples can be introduced such as the fabulist Esopo, who was enslaved, stimulating an analysis of how this fact influenced his works.

2 In the second class, the teacher addresses the meme. It historically contextualizes its emergence, discusses the idea of authorship in this textual genre, and brings various types of memes for class appreciation. It also provokes students to think about their social function and circulation on the Internet, social networks, traditional media and advertising. The kids are invited to reflect on the creation of a profession related to meme production. The teacher concludes these two classes with the participation of two students who already have the practice of producing memes (they must be mapped first). They share their experience, which engages the whole

class for the next steps of the journey. At the end of this class, we present the most commonly used meme apps, such as Meme Generator, Google Photos, and Giphy.

3 The next two meetings are held in a computer room. There the teacher proposes reading various fables, with the intention of understanding facts that surround them and why these fables can represent them. After this reflection, the kids use an app to create a meme relating a social fact to one of the fables studied.

The challenge is to use creativity and criticality to ensure recognition of the fable as an inspiring source for the meme. If the school does not have a computer lab, you can use the library to read fables or request that this research be done at home. Students can also use their cell phones for work.
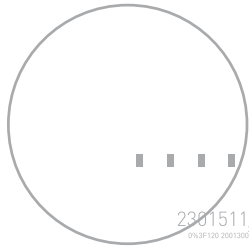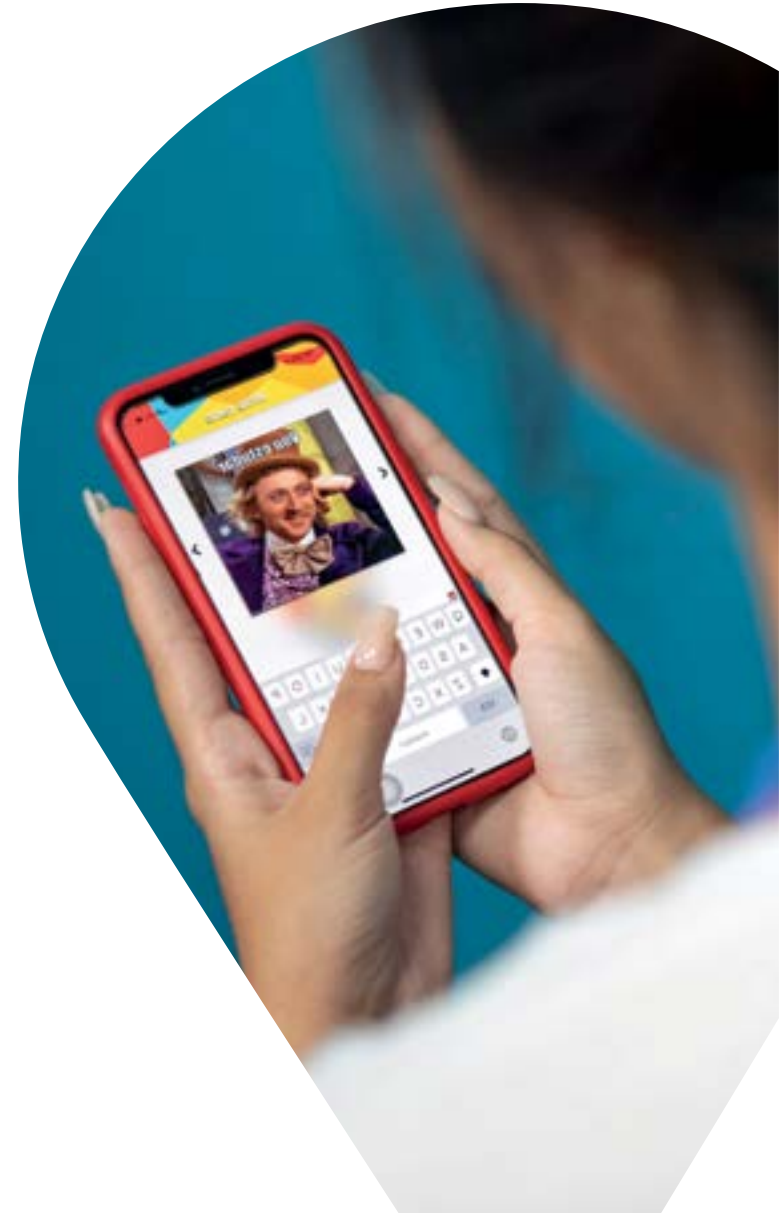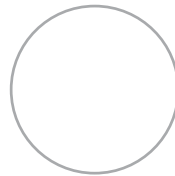
4 After accomplishing this intergenic between fables and memes, the fifth class is dedicated to the socialization of productions. Each student presents the created meme and the class tries to recognize the fable and the social fact that it addresses, and the author presents their inspiring references. The teacher can also promote a contest for the choice of the three most creative and innovative memes, recognizing and valuing creativity through a symbolic award.

TIP:

This intergenic can also be performed with other textual genres. A joke could turn into comic strips, for example. Or a tale into a cordel.

EVALUATION:

The evaluation is done continuously through the observation of the teacher, which takes into account the participation of students and their productions. The meme analysis considers evidence of: commitment to research, capacity for analysis and critical reflection, coherence with the story of the fable, creativity and intentionality in relation to the social function of the created meme - whether it is for fun or criticism, if it is to relate facts that afflict personal life or society.

RESULTS:

The activity strongly engaged the kids in fable research and study. It was possible to understand how the memes production process enabled the development of several competences, mainly creativity They innovated a lot, featuring productions that revealed the high quality of the research process, analysis and reflections experienced. The course also developed the critical thinking of the class. The experience of giving visibility to classroom productions was also revealing. It was possible to perceive the feeling of appreciation of the authorship,increasing the confidence of everyone involved in their ability of expressions. The initiative showed how important it is to look for new ways methodologies to make the teaching-learning process more fun, critical and visible through student production.

LEARN MORE

Esopo's Fables
[http://bit.ly/fabesopo]

La Fontaine's Fables
[http://bit.ly/fabfontaine]

How to create an animated gif
[http://bit.ly/criagif]

About Intergenicity
[http://bit.ly/intergene]
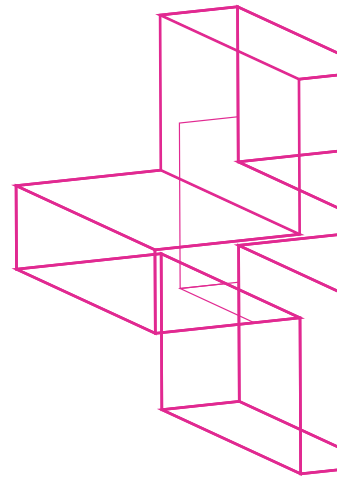
DIG SHAKESPEARE

KEYWORDS

#SHAKESPEARE
#SHORT_FILM
#REREADING

AUTHORS
KLENIE RAMOS
JULIANE TRAVASSOS

WHAT IS IT?

Activity that involves students in research, analysis and appreciation of William Shakespeare's literary works. The kids are oriented to produce a short video, like a rereading of the works studied. The audiovisual production is done in English language and subtitled at the end of the process, promoting meaningful language learning.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

FOREIGN LANGUAGE

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

CULTURAL REPERTORY

COMMUNICATION

DIGITAL CULTURE

WHY DO IT?

The initiative brings a new look by including English literature classics in the high school curriculum. It enables students to develop the pleasure of reading and understanding Shakespeare's works and seeks, along the creative path, to enable them to establish relationships between their identities, their moments of life and the content of the literary work chosen for audiovisual adaptation, a parallel between literature and current reality. These reflections are provoked by the teacher, at a time when the kids are researching about the characters and about the historical context of the works.

RESOURCES

- **Shakespeare's literary works**
- Movie **Shakespeare in Love**[1] or **Elizabeth**[2]
- **Camcorders**
- **Cellphones**
- **Computers with internet access**
- **Video editing software**[3]
- **Electronic dictionaries**
- **Projector**
- **Stereo**

CLASS TIME

- **Twenty 50-minutes classes.**

1. Shakespeare in Love
[http://bit.ly/Sapaixonado]

2. Elizabeth
[http://bit.ly/Elizab]

3. Video editing software
[http://bit.ly/7edvideo]

HOW TO DO IT?

Pre-production:

1 The teacher begins the journey with a brief explanation of English literature in the 16th century. They invite the class to search the biography of William Shakespeare on the Internet: his origin, main works, literary genres, his friends, curiosities about his life, his contribution to the English theater of the time, etc. Then the students talk to each other in a large group about their research, exchanging information and debating.

2 The next step is the screening of the movie "Shakespeare in Love" [or "Elizabeth"], with remarks about the customs of the time. The idea is that the kids can get to know the author better through a parallel between their research and the film.

3 After watching the movie, the classes are divided into groups to read some works by Shakespeare: Romeo and Juliet, Hamlet, Othello, Midsummer Night's Dream, The Tame Vixen, among others.

Production:

4 After this mobilization, students begin the production of films based on literary works. Each class chooses a work to adapt for a short film. The final product of the activity is a video interpretation.

5 After choosing the work, the class is subdivided into groups and define the role of each, thus forming a team for the production work. Each of these teams will take care of part of the research and achievement of the audiovisual work. Part of the class is responsible for organizing an in-depth research into the literary work, writing down this research and organizing a seminar. The other students are organized into subgroups: script, production, costumes, set design, casting, filming, audio, technical support, editing.

6 The accompaniment of the teachers, with complementary content, occurs throughout the process, in the story line, narrative structure, script, production, use of technological resources (camera, cell phone, computer) and, after the recordings, in the editing. and subtitling. In English language classes, students are supported not only in the English subtitle stage, but also in the translation and transcription of script lines.

7 With the script in two languages, students perform rehearsals and recordings of the short film, in a place to be defined by the classes. English language class schedules can also be used for film production.

Post-production:

8 The English subtitling process takes into account content that may have already been experienced, such as: vocabularies, idioms of the Elizabethan era and archaic English, as well as the use of appropriate technological resources (online dictionaries and translation sites) to ease the process.

9 On a Dig Shakespeare day, an event that engages the whole school, in a space like an auditorium, the activity ends with the exhibition of videos to all classes. Depending on the size of the school and the size of the classes, it may be necessary to rotate the exhibition times.
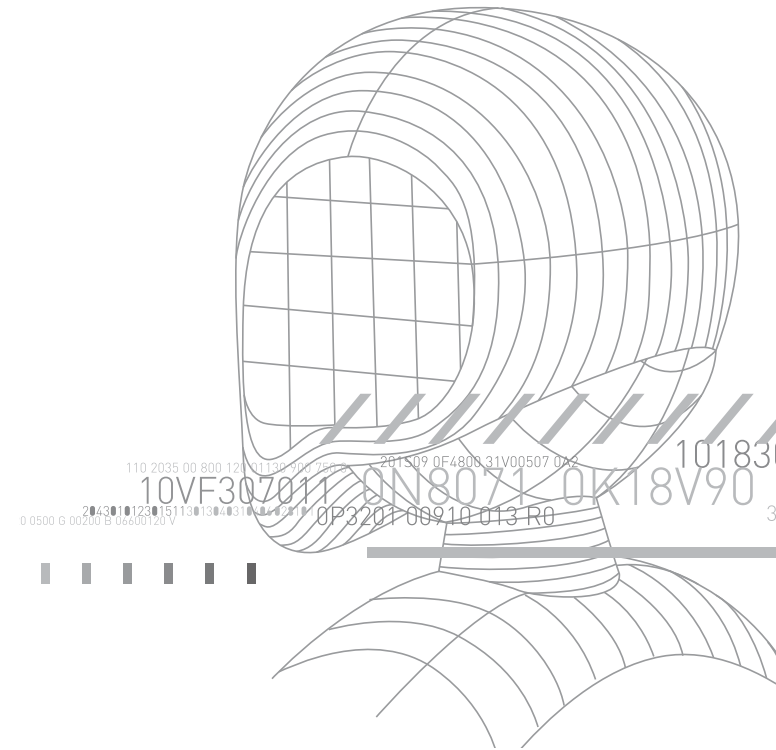
EVALUATION

The evaluation is done during the classes, through teacher observations, in order to identify the participation, involvement and performance of young people in the research and production of the short film. The focus is on oral and written production, as well as on the domain of experienced content, evaluated through the attitudinal aspect in the development of tasks. The goal is also to detect students who have difficulties in the mentioned aspects, in order to integrate them and facilitate their learning throughout the process.

RESULTS

Through reading and research activities, it was observed that the kids had the pleasure not only of reading and knowing one of the greatest authors of all time, but also of exploring the conflicts of the soul with deep sensitivity, through reflection and relationship with the characters. In addition, the development of English language skills promoted the possibility for students to broaden vocabulary and lexical repertoire. The process of audiovisual production, having many stages and requiring large teams, allowed involvement from the whole class in a single production, which facilitated the development of self-management and collaboration by students. The whole journey was always permeating and solidifying the premises established in the school's Pedagogical Proposal: the four pillars of Jacques Dellors' education - learning to know, to do, to be and to live. And it is also important to highlight that all the work sought to contemplate the interdisciplinary experience, ensuring the contextualization.

LEARN MORE

William Shakespeare's complete work [http://bit.ly/obrashakesp]

- CEVASCO, SIQUEIRA, Maria Eliza e Valter Lellis. Rumos da Literatura Inglesa. Editora Ática, São Paulo, 1988.
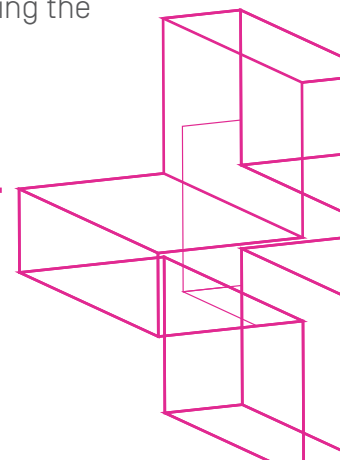
NO NEED TO EXPLAIN

KEYWORDS

#NARRATIVES
#AUDIO-VISUAL
#EXPERIMENTAL_CINEMA

AUTHOR
ELIZABETH CALDAS

WHAT IS IT?

An exercise of manipulation of audiovisual language for the production of a video that can engage a specific feeling in the audience. It's an experimentation that discusses audiovisual resources and standards commercial and massive narratives, enabling the development of reading media criticism and interpretation and textual creation skills.

SUBJECT AREAS

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

PHILOSOPHY

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

SCREENWRITING

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

CULTURAL REPERTORY

COMMUNICATION

WHY DO IT?

The activity provides students with new ways of seeing, understanding and producing audiovisual material. It is an initiative that encourages free creation, expanding the aesthetic repertoire of the participants. The previous experiences of the kids', especially in relation to digital media, is harnessed and enhanced. In general, the kids already have a wide repertoire as consumers of audiovisual material and often even as producers. This didactic sequence part of this subject, often considered intuitive and little valued by the school, and features a variety of styles and ways of doing and thinking the artistic creation, mobilizing the students to compare the features and aesthetic standards used in narrative commercials with more experimental and artistic productions. Further, if you also uses philosophical texts to enable the class to relativize the idea of a passive audience, turning the audience into an authentic agent of making and feeling narrative. It also encourages a critical reading of the media, allowing students to understand that the text is not only the written word, but everything that can be interpreted.

RESOURCES

- Computer
- Projector
- Speaker
- Cameras or cameras for video recording
- Video editing program
- Text **"The work of art in the age of its technical reproducibility"**[1], by Walter Benjamin
- Text **"The secret language of cinema"**[2], by Jean-Claude Carrière

CLASS TIME

- Six 50-minutes classes.

1. Walter Benjamin
[http://bit.ly/wbenj]

2. Jean-Claude Carrière
[http://bit.ly/jeclau]

HOW TO DO IT?

1 The first phase is an integrated class between the Philosophy and Screenwriting Creation subjects. An encounter in which the two educators use Walter Benjamin's text "A work of art in the age of technical reproducibility" to engage students to reflect on the concept of art work and the experience of cinema.

2 In the second meet, the Screenwriting Creation course teacher leads a reflection on the way we see cinema and how it has been presented to us throughout its history. They will show students the concept of the explainer, defined by Jean-Claude Carrière in "The secret language of cinema," as a common professional at the first public screenings of cinema for the rich settlers in African countries. The explainer stood beside the screen, presenting to the audience everything being projected, personifying the idea that people would not be able to understand black and white images without background sound. It is also important at this point, to reinforce the idea that 'audio' and 'visual' are two distinct and independent aspects in the creation of any film production.

3 The third class continues engaging reflections on the development of audiovisual language throughout history. To deconstruct the perception about linearity of traditional audiovisual narrative, the educator brings examples of video art and experimental film works (see **Learn more**). The idea here is to get the kids to compare these narratives to the more commercial and mass-produced audiovisual productions. Students are more used to narratives organized in order to facilitate the understanding of the public, but, thus, limiting the interpretation of those who interact with them. With this comparative exercise, they are led to understand why they often develop some resistance to productions with more open narratives, which require more from the viewer's interpretation. To help young people reach these conclusions, after the teacher presents the videos, they will lead a conversation with the class, raising questions such as: What must be understood about an audiovisual work? Is it possible to have a right or unique understanding about a video? Do we need to understand exactly what the author thought? What is important in the movie experience? At the end of the meet, the

class is divided into groups of up to four members and asked to research and bring examples of video art to the next class. Each group will select at least two productions.

4 The next class is dedicated to the contemplation of audiovisual works brought by students. Before the exhibition, each group presents the chosen works and their authors, justifying and contextualizing the selection. Here it is important for the class to see examples of films with experimental and art narratives to provoke them to reflect on how to interpret an audiovisual work and on synesthetic and emotional perceptions brought about by each production. The teacher may also have other titles on hand to complement this moment of repertoire expansion.

5 Later, the educator proposes to the creation of an experimental video to the group. Each team will work on the design and production of a short (5 minutes' maximum) audiovisual work that violates commercial and mass standards. The focus of the production will be on exploring language resources to translate feelings. The teacher does a draw and each group receives a feeling, namely: anxiety, suffocation, vulnerability, agony, love, calm, anger. The idea is to build a movie that causes the feeling in the audience. The purpose is not to talk about the feeling, but to manipulate the audiovisual resources in order to generate sensations in the public. That is, a team working on anxiety, for example, should not build a narrative with an anxious person, but be able to convey or generate in the audience that feeling. Students also cannot avail themselves of dialogue, the use of narrators

or any explanatory text resources in the production. Even inserting a soundtrack is not allowed, just exploring sounds and noises.

6 Each group has two weeks to develop their audiovisual production. And in the sixth and last class is the time for the kids to present their creations. It is important for the teacher to take care of preparing the physical space of the classroom by arranging desks and turning off the lights to simulate the darkroom experience of the cinema. Each movie is screened without any explanation about the process or the feeling drawn. The idea is to let students experience the challenge of feeling. If possible, videos should be viewed in sequence, with no break between them. At the end, the students talk about what they felt and how it was the exercise of producing "without explaining",

evaluating their creative processes and collaborative construction.

EVALUATION

The kids are evaluated for classroom activities and for the production of the audiovisual work. The criteria are: engagement, research quality, quality of short-term audiovisual production and ability to present/defend their idea.

RESULTS

The kids came to value both the creative role of the audiovisual author and the public in the construction of meanings. It was observed that they improved their interpretive skills by learning to "read" the language choices adopted by their peers. The development of this critical eye is one of the main results of the activity. The sensitive reading exercise of films has made students more critical about media products and their influence on their lives. They have realized the importance of understanding traditional narrative features and patterns in order to analyze or subvert them. Realizing the aesthetic and semantic potential of each work, they began to reflect on their daily experience with digital media, especially the smartphone. It can be said that this experiment changed their relationship with devices and began to recognize its potential for the production of meanings. From experience, the class understood this knowledge as an important way to build narratives about themselves, following the ways of telling that are closer to their reality and strengthen their identities. Finally, it is worth mentioning that by creating short experimental videos, the kids developed creativity and a sense of authorship.

LEARN MORE

William Shakespeare's complete work [http://bit.ly/obrashakesp]

- CEVASCO, SIQUEIRA, Maria Eliza e Valter Lellis. Rumos da Literatura Inglesa. Editora Ática, São Paulo, 1988.
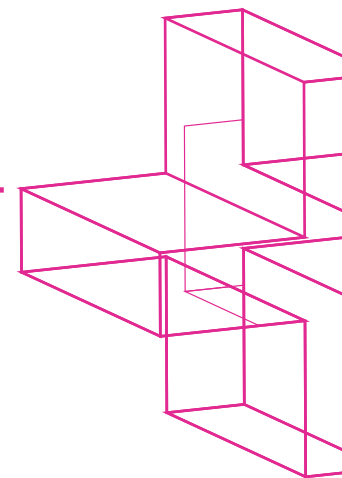
CAMPAIGN SCHOOL

AUTHOR
PAULA SCARABELOT

WHAT IS IT?

Students experiment with designing and developing an educational media campaign, addressing relevant social issues. The initiative seeks to enhance the development of various of the kid's skills, proposing a path of production of educational media **online** in various language formats.

MODALITY

PROFESSIONAL AND
TECHNOLOGICAL
EDUCATION

COURSE

MULTIMEDIA

TARGET AUDIENCE

ELEMENTARY
SCHOOL

HIGH
SCHOOL

ADULT
LEARNING

SKILLS

COMMUNICATION

EMPATHY AND
COOPERATION

RESPONSIBILITY
AND CITIZENSHIP

WHY DO IT?

Produce relevant information, be able to think critically and creatively about the problems experienced and expressing ideas using different languages are fundamental competences for student training. Kids are very media-related in general, whether mass or digital. And this sequence of content production activates all related intuitive knowledge online media, using the Adobe virtual tool Spark, a very user-friendly platform that offers many features magnifiers for aesthetic references, as a facilitator. It is an activity that can be developed to integrate diverse subjects and content, while enabling the development of reading and writing skills, argumentation and collaboration. It is also worth mentioning that the process offers the possibility for the kids to collectively build senses and meanings to positively impact their surroundings in a concrete way, involving the class in reflections on responsibility and citizenship.

✂ RESOURCES

- Computers with internet access
- Multimedia projector
- Access to the free **Adobe Spark**[1] platform [http://bit.ly/Aspark] [or similar, like **Canva**[2] - http://bit.ly/canvv - etc.]
- Access to the free **Pinterest**[3] platform [http://bit.ly/Pintert] or similar

🕐 CLASS TIME

- Twelve 50-minutes classes.

1. Adobe Spark
[http://bit.ly/Aspark]

2. Canva
[http://bit.ly/canvv]

3. Pinterest
[http://bit.ly/Pintert]

HOW TO DO IT?

Before starting the activity, it is important that the teacher be familiar with the Adobe Spark platform (or similar tool) so that they can guide students on first contact.

1 The teacher begins by proposing to the elaboration of an educational media campaign to the kids. They point out that media campaigns are important tools for social engagement, idea communication and even product marketing. Before inviting students to get their hands dirty, the educator presents concepts related to the field of advertising using slides. At the end, they invite the class to organize into groups of approximately five members.

2 Each team elects a relevant theme or action to be publicized, which may be connected to social or school interest issues. Students search the internet about the chosen "problem", gathering historical or technical data to support them in creating the pieces. The online media campaign comes to fruition in three productions: a web page, a short video, and a social ad.

3 As a first step in development, the kids are encouraged to elaborate an impactful phrase that represents the conceptual synthesis of the campaign. Then they must think about the visual aspects of the pieces they will produce. It is important to search for references on the internet so that they can know about similar campaigns to the ones they are designing. These references can come from image search engines on the internet or on tools like **Pinterest** [photo sharing social network, which acts as an inspiration board]. Visual research helps in choosing graphic elements such as photographs, illustrations, colors and typography. It is important to reinforce the importance of aligning the concept [or phrase] with the visual part of the campaign.

4 After research and planning, the groups set out to make media pieces using Adobe Spark. For this, it is important that the **teacher assists** them in the initial contact, explaining how to guide themselves through the screens. To learn more about how the teacher can guide this production, visit http://bit.ly/educaml. They may also suggest you access a tutorial. Ideally, students should be able to interact intuitively with the program by discovering how it works autonomously. The basic knowledge of the internet and social networks that many kid already have contributed to the understanding and use of the tool. The software is very intuitive and the platform is generally well accepted by the classes.

At the end of this first phase, production begins. First, the teams create the social ad, then the website, and finally the video.

4. Learn more how the teacher can guide this production.
[http://bit.ly/educaml]

5 With the campaign pieces created, each team displays their productions, presenting the guiding concept and defending their aesthetic and language choices. Students should be encouraged to report on the difficulties, discoveries, solutions and learnings built up throughout the training process. This moment of presentation is very important, because it is when it is possible to make a general evaluations of the practice, observing both the technical learning and the development of skills. The teacher should actively participate, bringing contributions, highlighting interesting graphic solutions and, if necessary, motivating the kids to improve their work.

EVALUATION

To assign the grade, the teacher analyzes the students' ability to: relate text and images in the construction of meanings and definitions; propose creative solutions to the problems addressed; express ideas, engage, cooperate and act autonomously.

RESULTS

The incorporation of a digital media production tool has had positive effects on the kids' engagement and interest. All groups participated with motivation, in a light and pleasant manner. They were also able to split tasks, making the most of the resources of the online platform. Overall, students highlighted creativity and the discovery of the ability to produce communication pieces as quickly and easily as the biggest learnings. Awareness of the use of school equipment, cleanliness of the school environment and the adoption of abandoned animals were some of the themes addressed in the educational campaigns created. The kids were also motivated to discuss the issues with each other and made great progress in completing the stages and in teamwork. Importantly, no specific aesthetic result was imposed, precisely to stimulate the search for innovative solutions and ideas.

LEARN MORE

How to plan a
marketing campaign
[http://bit.ly/campmark]

The psychology of color in
marketing and everyday life
[http://bit.ly/psidacores]

Creating posts, videos, and
presentations with Adobe Spark
[http://bit.ly/postarAS]
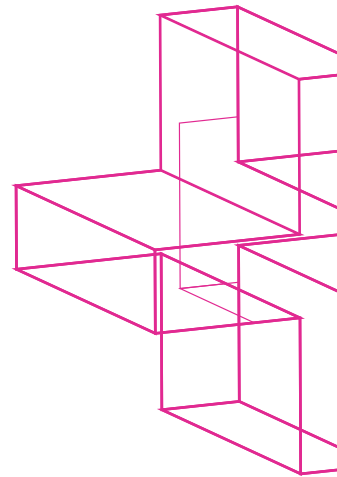
HIGH FIVE!!

KEYWORDS

#MUSIC
#PHYSICS_FORMULAS
#PARODIES

AUTHORS
HUGO MAGNATA
PATRÍCIA OLIVEIRA

WHAT IS IT?

Students create music video parodies that feature physics-related formulas. The activity allows them to go beyond memorizing formulas, but also enables the development of argumentation and understanding about the applicability of this theoretical knowledge.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

NATURAL SCIENCES AND THEIR TECHNOLOGIES

CURRICULAR COMPONENTS

PORTUGUESE LANGUAGE

PHYSICS

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

CULTURAL REPERTORY

WHY DO IT?

Parody creation enables students to develop critical thinking and a better understanding of social and political contexts. It also enables the kids to exercise their creativity and ability to analyze different phenomena.

By parodying music using the various applications of physics formulas as a theme, students deepen the appropriation of knowledge about these curricular contents, going beyond the simple memorization of the concepts of this area. The initiative also offers the chance to explore this musical adaptation to engage knowledge on how to communicate scientific information.

RESOURCES

- **Digital camera**
- **Cell Phone**
- **Musical instruments**
- **Paper and pens**
- **Computer and microphone**
- **Projector and speaker**

CLASS TIME

- **Eight 50-minute classes**

HOW TO DO IT?

1 The practice begins in the Portuguese Language subject. The teacher presents to the students, in an expository format, the concepts that structure the language of parody. It is this information that will underpin the kids' path to adapt the songs. At this moment, some video examples are brought, such as the parodies of the song "Malandramente" in the video **Politico Mente[1]** [http://bit.ly/polimente] and the song "Palpite" in the video **Paródia de Física: Movimentos[2]** [http://bit.ly/parofis].The intention is to help the kids to understand its uses in various contexts, to offer references and to inspire the following steps, which will be taken in the physics classes.

1. Político mente
[http://bit.ly/polimente]

2. Paródia física
[http://bit.ly/parofis]

2 After understanding what parody is, students are invited to create this musical adaptation through the production of music videos that explore concepts and the application of theoretical knowledge of physics. In teams, the teams are encouraged to research and choose the concept they want to address. In addition, they also choose the songs they will parody. It is important to encourage the use of diverse repertoires, especially of the kids themselves. At the same time, circulating through the teams, the teacher supports the discovery of possible paths for the creation of products. A final round of conversations in the larger group allows the class to view all the repertoires and concepts that will be used.

3 In the lab, the teams create the scripts for the music videos. It is important that the teacher pay attention to the viability of each one and suggest adaptations during this phase.

4 From the scripts, the footage is produced. These recordings have different production times and will depend on each team's demand. It is also crucial that the concept or subject chosen is clear. The physics teacher clarifies doubts regarding the formulas used, listening to the parodies and giving suggestions.

5 The final stage, an evaluation in the auditorium, is conducted between two classes and with the presence of the teachers involved. Based on the criteria of coherence between the parody and the concept of physics approached, the productions of one class are evaluated by the other and together, the two choose which music videos will be published on the internet. Some (at least one from each class) or all can be chosen.
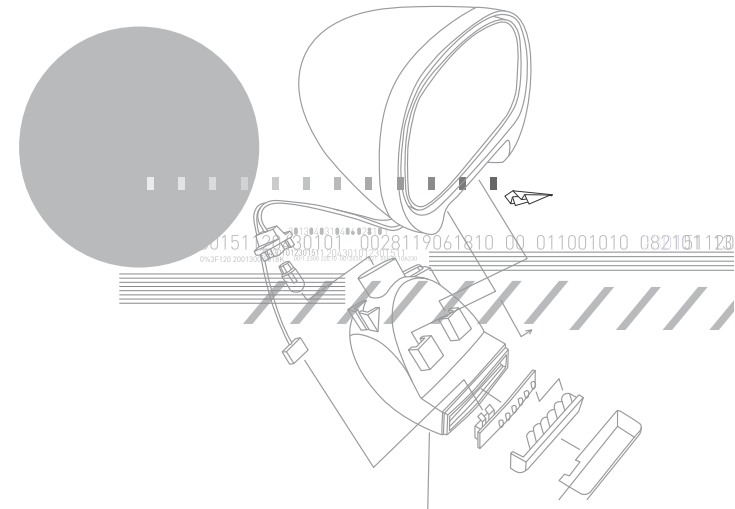
EVALUATION

The parodies produced are evaluated by observing criteria such as: the creativity of the proposal, the coherence in relation to the concept of Physics addressed, the research developed to understand the applicability of this concept, the criticality of the students and their intention.

RESULTS

The activity allowed students an understanding of the workings of physics formulas beyond simple traditional memorization. Concepts such as thermodynamics, for example, could be more easily understood. By creating arguments to make parodies, the kids also realized the possibilities of using different languages to communicate the functionality of physics, conducted by Portuguese language learning. Making video products brought the opportunity to reflect on the applicability of communication tools to teach physics in a ludic, creative and interdisciplinary way.

LEARN MORE

Text "Paródias: utilização como recurso didático"
[http://bit.ly/portalpr]

Master´s monograph Física Lúdica
[http://bit.ly/mfisclud]
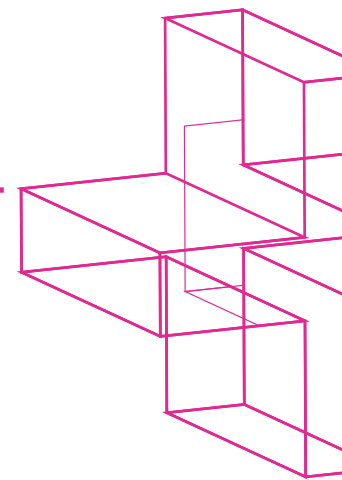
EVOANIMATE

KEYWORDS

#EVOLUTION
#CARTOON
#INFOGRAPHICS

AUTHORS
DANIELA BAHIA
JONATHAN CAROBA

WHAT IS IT?

An activity that invites students to create infographics about themes related to the evolution of species on the planet. The concepts about the evolution of life are studied and then represented with a lot of creativity using characters from animal life in movies and Cartoons.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

COMMUNICATION

WHY DO IT?

It is an initiative that makes it possible to introduce and engage students in learning curriculum content about the evolution of species. The didactic sequence enables the kids to understand the basic concepts about the evolution of life even before they have studied contents that are prerequisites for this teaching, such as themes related to the diversity of living beings, ecology and genetics. The articulation of this knowledge of Biology, associated with historical references and fictional characters, enables the in-depth appropriation of concepts and the decoding of their parameters to establish relationships.

RESOURCES

- **Computer with internet access**
- **Google Drive**[1] [http://bit.ly/32iGowv] **or similar platform**
- **Image editing software such as Illustrator or Photoshop (or free alternatives like Canva**[2] [http://bit.ly/canvv] **and Infogram**[3] [http://bit.ly/infgram]**)**

CLASS TIME

- **Twelve 50-minutes classes**

1. Google drive
[http://bit.ly/32iGowv]

2. Canva
[http://bit.ly/canvv]

3. Infogram
[http://bit.ly/infgram]

HOW TO DO IT?

1 The teacher begins with an oral presentation on the theme of Evolution of Life on Earth. At the end of this introduction, they introduce the students to **Evosite**[1] [http://bit.ly/2XKefeo], a page from the University of São Paulo [USP] that gathers data on the evolution of living things on the planet. The kids are organized into groups and the dynamics of the activity are detailed: each class, the team will be invited to choose and study one of the concepts presented by the site [such as natural selection, patterns, genetic drift, micro and macroevolution, speciation, phylogeny, sexual and artificial selection]. The teams organize a synthesis of what they have studied and define a cartoon as a metaphor for this content. The dynamics are followed in the next four classes, totaling four concepts studied and exemplified from the cinematic stories and their characters. To address the concept of migration, they might choose Ice Age, for example.

1. Evosite
[http://bit.ly/2XKefeo]

2 At the next meet, the kids are organized into the same teams. After an oral exposition of the content, the proposal is to study and synthesize another evolutionary concept. The teacher advises that the research and registration time is approximately 30 minutes. The research is initially done on Evosite, but students are invited to freely access other sources as well. If there is difficulty in accessing the Internet, the teacher may bring several textbooks and/or scientific books that they have on hand and propose that they search the publications. All study material is shared with the whole class through Google Drive: each team has their research file in a folder everyone can access.

3 After this first phase of study and research, the teams go to the multimedia laboratory to make the infographics, which should be composed of images accompanied by short texts. Most importantly, the kids are encouraged to use creativity to produce narratives, inspired by fiction stories and mainly structured around the images of movies and cartoons. For this, Photoshop is used, as the appropriation of this tool is of interest to the school's technical course. But other software can also be employed, such as Illustrator or PowerPoint, for example. In addition, there are free alternatives such as Canva, Infogram, and Google Slides, which feature functional visuals and an easy-to-understand interface for both student and teacher.

4 At the end of the course, each team presents its infographic, discussing the theme of biological evolution object of its representation. The idea is for groups to use their production to teach colleagues about organized content. In this way, the didactic sequence ends with classes led by the kids.
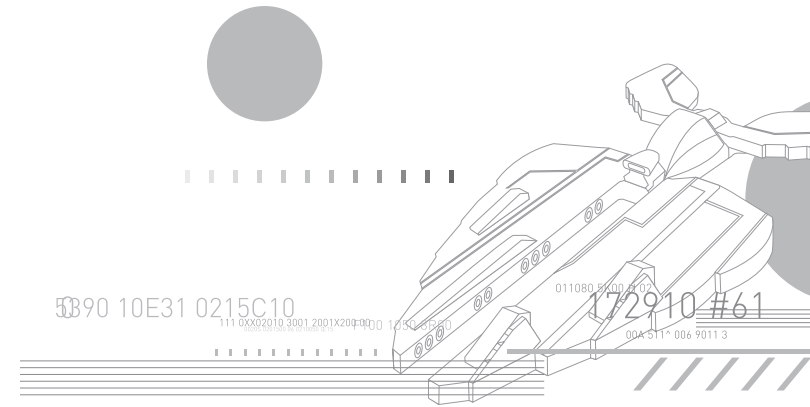
EVALUATION

The teacher evaluates the participation and teamwork throughout the classes, including the process of researching and writing the texts, as well as the infographic produced, taking into account the use of software, content correction and coherence between the chosen cartoons and the concepts studied.
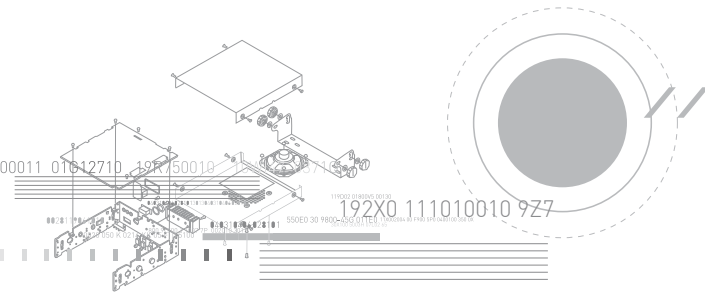
RESULTS

The initiative engaged students in a collaborative research and study path, providing an intense learning process. In many cultural contexts the theme of evolution can generate controversy, and the use of cartoons has enabled this knowledge to be approached with great creativity, humor and lightness. In addition to a creative and aesthetic exercise to concisely express the concepts studied, the process of producing infographics also provided opportunities for the kids to develop critical thinking and appropriate research tools and procedures in a ludic way.

LEARN MORE

Infographics produced by students
[http://bit.ly/2JujzyC]

Basic concepts of evolution
[http://bit.ly/2xS0jEF]
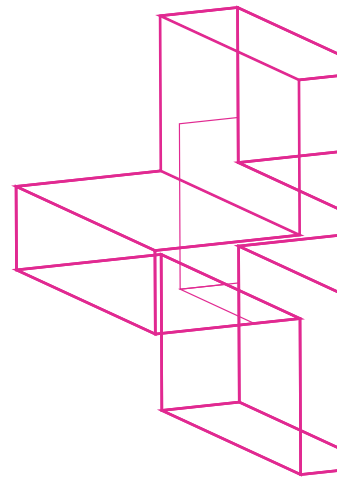
ANIMAL PINTEREST

KEYWORDS

#ANIMAL_TAXONOMY
#YOUTH_CULTURES
#SOCIAL_NETWORKS

AUTHOR
ANDREA PIRATININGA

WHAT IS IT?

Animation characters and **Pinterest** (social image sharing network) become tools to promote the teaching of animal taxonomy. Students correlate animals, movie and/or cartoon characters with real animal life, learning to categorize them by phylum, class, and order.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

CULTURAL REPERTORY

WHY DO IT?

The initiative combines the scientific concepts of biological classification and the systematic of animal groups with elements of language and communication, closer to the youth culture, such as social networks and animated films. The classification of the animal kingdom is no longer an abstract subject and comes alive in the eyes of students, who eventually discover species they did not know and marvel at the images of real living beings that inspired their favorite characters. The process of teaching and learning is triggered from the affective and childhood memory, which also enables the class throughout the journey, which begins with an invitation for kids to remember animal characters from animated cartoons.

RESOURCES

- **Computers with internet access**
- **Multimedia projector**
- **Finding Nemo Movie**[1]
- **Pinterest**[2] **social network access** [http://bit.ly/2xox6Ra] **or similar platform like Piccsy**[3] [http://bit.ly/2xIZsFY]

CLASS TIME

- **Four 50-minutes classes**

1. Finding Nemo Movie
[http://bit.ly/2G8Tumm]

2. Pinterest
[http://bit.ly/2xox6Ra]

3. Piccsy
[http://bit.ly/2xIZsFY]

HOW TO DO IT?

1 The teacher begins with an oral presentation on the general aspects of zoology and the classification of the animal kingdom. First it is just a contextualization, to show the main groups of animals and their characteristics, as well as their phylogeny and evolution. Then, the teacher displays a selection of scenes from the movie Finding Nemo, which feature the most diverse aquatic animals. The first 13 minutes of the animation is a great snippet to be shown right now. During the enjoyment of the film, students record all species of animals that appear on the screen, trying to identify the phylum.

2 The next meet takes place in a space with computers connected to the internet. The kids, inspired by the previous class, continue to research the Animal Kingdom in popular animated films. To research and organize the results, the teacher recommends that the class use the Pinterest social network, but the search can also be done through other platforms, such as Piccsy. Students work in pairs and each creates a board in the social network folder with the subject name and class. The teacher guides them on how to use Pinterest and can also help the kids find other movies to use as a reference.

3 The proposal is to look for the cartoon image first and then insert a photo of the real animal next to it on the board. Each **board** created should contain an example of animal from each string and, in the case of string chord, an example from each class.

4 The next step of the pair is to deepen the research and work on the classification of each of the selected animals. The teacher instructs them to create subtitles for each image of the animal characters, entering the name of the film and the year. The images of real animals are captioned with the taxonomic description containing phylum, class and, in some cases, order. The teacher guides students to visit biological classification websites (see Learn more) to learn how to do it.
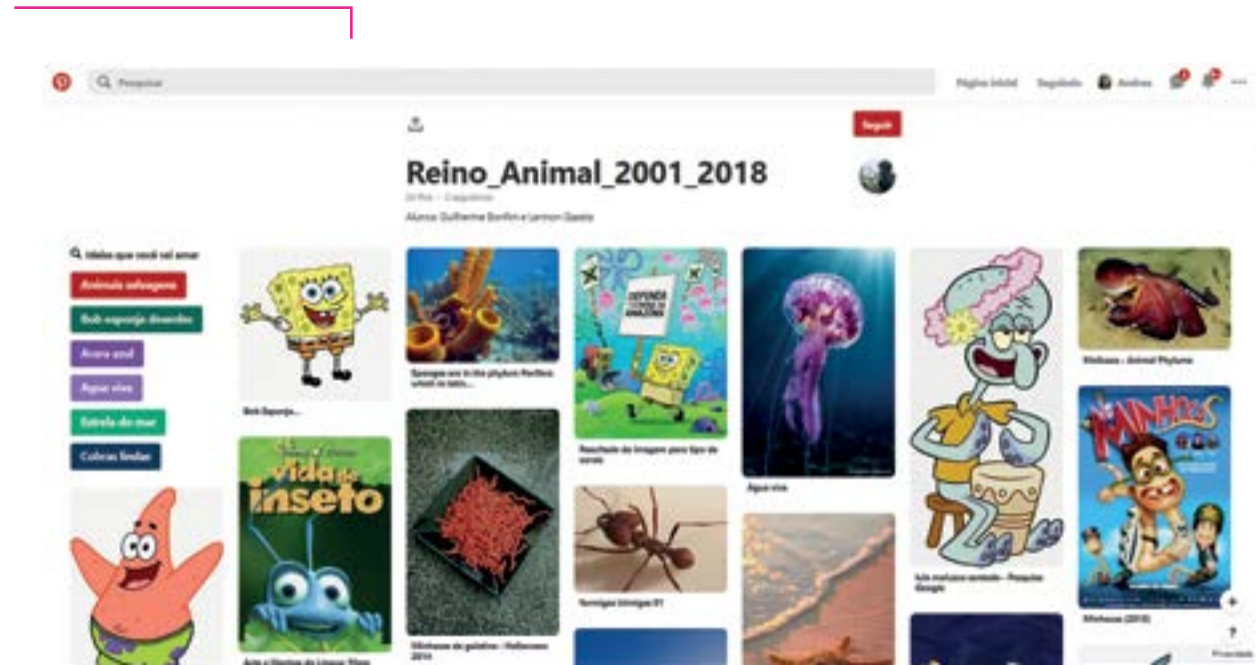
Board example

5 After the boards are completely assembled on Pinterest, each pair talks about their creations with their teacher and peers using their own social network. To make sharing easier, you need to create a code or keyword that will be written across all boards. For example: "NAVE_animalkingdom_class", or something similar, so that the teacher does not get lost in their search. Also, it is important for the teacher to follow the student´s board and the student to follow the teacher.

6 The teacher evaluates all the boards and prepares feedback for the students, pointing out the inaccuracies. They project each production with its analysis into a meeting especially dedicated to the appropriation of results. It is worth noting that it will be difficult to find groups of parasitic animals in movies (mainly Nematoda). Thus, as the boards will probably not have this group, the teacher prepares a board with these copies so that they will be known at the end of the activity.
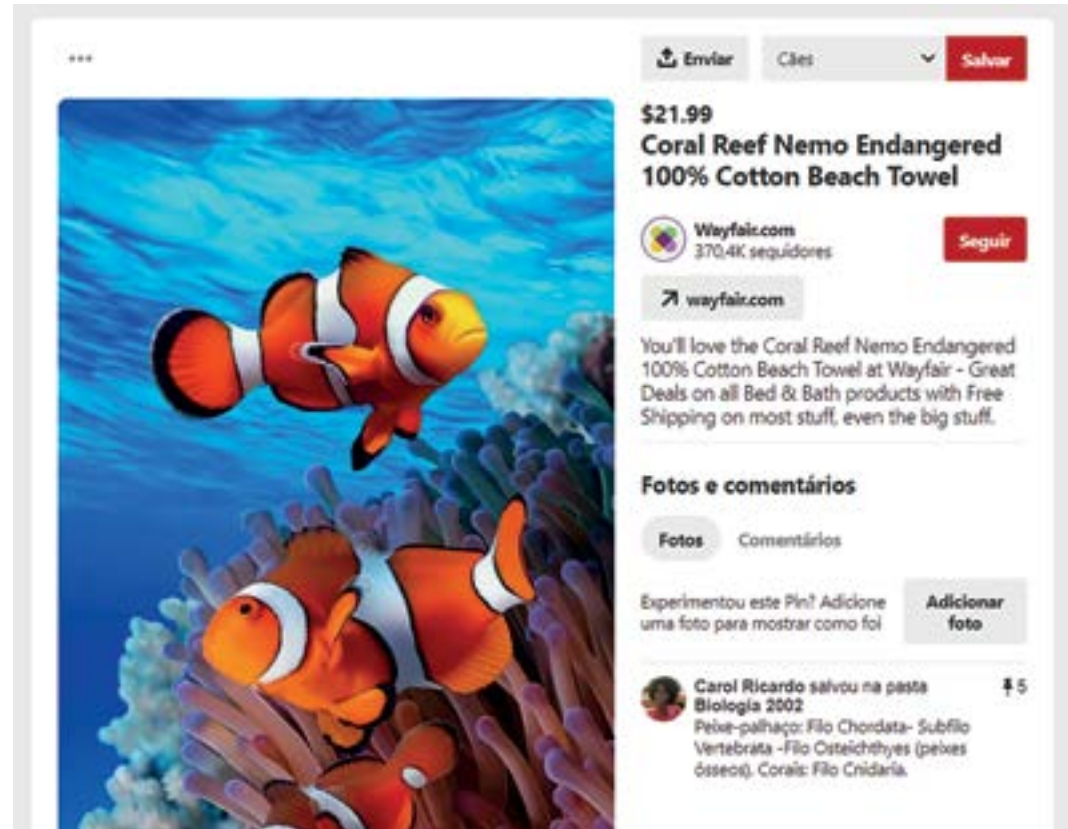
Example image with rating caption

EVALUATION

The teacher assigns grade to each board. They observe if the students included the 13 groups of animals and if the zoological classification was done correctly.
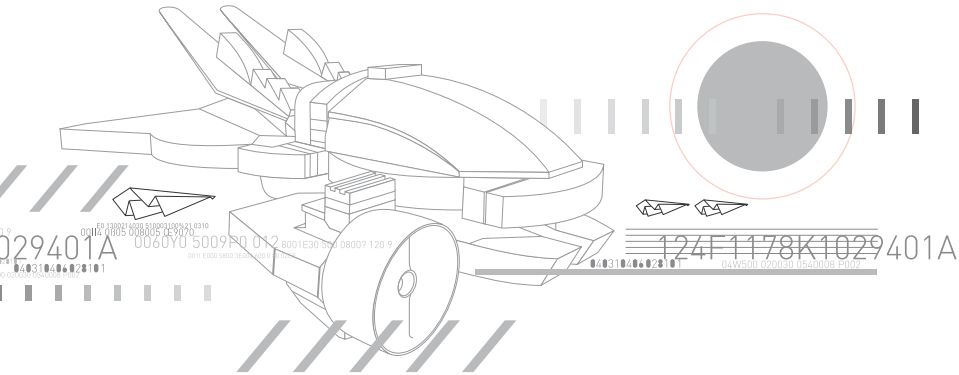
RESULTS

The initiative made it possible for students to better understand the zoological classification. They also learned to establish relationships between the characteristics of the animal group and the various environments of nature in which these beings inhabit. They also began to identify how this relationship with the environment varies more or less according to the complexity of living things more easily. Overall, students were surprised at how many distinct animals can be found in the movies. In the case of the lesser-known phyla of everyday life, it was more difficult to associate with cartoon characters, but it is precisely this challenge that intensifies curiosity and the desire to learn about and research nature.

LEARN MORE

Infographics produced by students
[http://bit.ly/2JujzyC]

Basic concepts of evolution
[http://bit.ly/2xS0jEF]
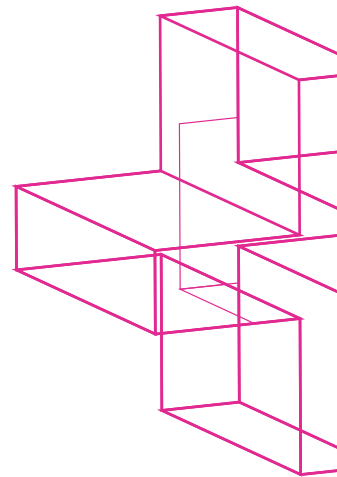
MAKER SCHOOL

KEYWORDS

#INTERNET_OF_THINGS
#ROBOTICS
#ARDUINO

AUTHORS
ANDERSON SILVA
JOÃO BOSCO

WHAT IS IT?

An extracurricular class initiative aimed at producing cultural projects of the maker culture guided by the IoT- Internet of Things - IoT) concept. The activity combines knowledge in programming, physics and electronics. In this experiment, students produced environments with intelligent climate control, controlled by the internet, within the school itself.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

PHYSICS

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

PROGRAMMING

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

DIGITAL CULTURE

RESPONSIBILITY AND CITIZENSHIP

WHY DO IT?

Stimulating the development of the maker culture at school opens space for experimentation and problem solving, inviting students to get their hands dirty in a structured way that can generate meaningful learning. Learning by doing provides opportunities for protagonist action and the development of competences for all curriculum subjects. It also promotes the recycling of materials for all kinds of science, engineering and technology projects, all with a homemade touch. The creation of IoT projects enables the strengthening of the relationship between theory and practice. Certain hitherto abstract contents can be concretely applied. By learning to use electronic materials, new knowledge in physics and programming is also generated. And as experience has tangible results at school, the kids become more confident in their ability to transform reality. The experience of a maker culture, along with the IoT experiments, provides the development of very important interpersonal skills for group work, such as leadership and organization characteristics and the appropriate division of tasks.

RESOURCES

- Desktop computer Arduino[1] Programming [http://bit.ly/Sarduino] + API Software - NodeJS2[2] [http://bit.ly/Snodejs], Database and Messaging Software
- **Arduino Robotics Kit**[3]
- **Wireless sensor**[3]
- **Temperature sensor**[3]
- **Electric current sensor**[3]
- **Infrared Sensors**[3] (reused from a remote control)
- **Raspberry-PI Card**[3]

CLASS TIME

- Eight 50-minutes classes.

1. Arduino
[http://bit.ly/Sarduino]

2. Nodejs
[http://bit.ly/Snodejs]

3. Robotics Kit
[http://bit.ly/escolamkr1]

HOW TO DO IT?

This activity emerged as an offshoot of a Robotics Club in which students participated for a year, learning about electronic components, logic board programming, internet resources, sensors and actuators.

1 ASome prior knowledge is required for the development of smart climate design. It is critical that the kids study programming principles for **Arduino**[4] [http://bit.ly/progrduino] using physics concepts for the use of sensors and actuators. In this experience, the main programming contents learned, even during the Robotics Club, were: Arduino programming for infrared sensor

control, *Bluetooth* programming, *wireless* device programming and, mainly, programming concepts for the Internet of Things. The goal is to develop in students the understanding of how communication can be made between various devices.

2 It is also important that the school provides, as an extracurricular activity, a maker space, where students can develop their own ideas, with the help of mentoring teachers. They organize schedules according to their schedules and possibilities, and use the space for the production of artifacts of value to the school and their learning. In this case, the kids used the physics laboratory as this creation environment.

4. Programação para Arduino
[http://bit.ly/progrduino]

3 Starting from the contents studied and with a space available for experimentation, it's time to get our hands dirty. The group proposes the project and uses their knowledge to develop the programming. In the case of intelligent classroom climate control, students program the Arduino platform to constantly monitor the air conditioning system through a temperature and current sensor. This monitoring aims at greater gain in thermal comfort, in addition to the proper use of electricity. The kids then program the air conditioner to turn on and off automatically at the appropriate times and days. The idea is to develop a system with the architecture shown in the diagram below. of operating adjustments and solutions for maximum ease of use. At the same time, several tests are performed in order to gauge its effectiveness, in addition to measure energy saving levels and the thermal comfort provided to the environment.

SMART CLIMATE ARCHITECTURE

Raspberry PI2 (Internet gateway)

Air conditioning with Arduino and sensors

Cloud server

communicates by WI-FI
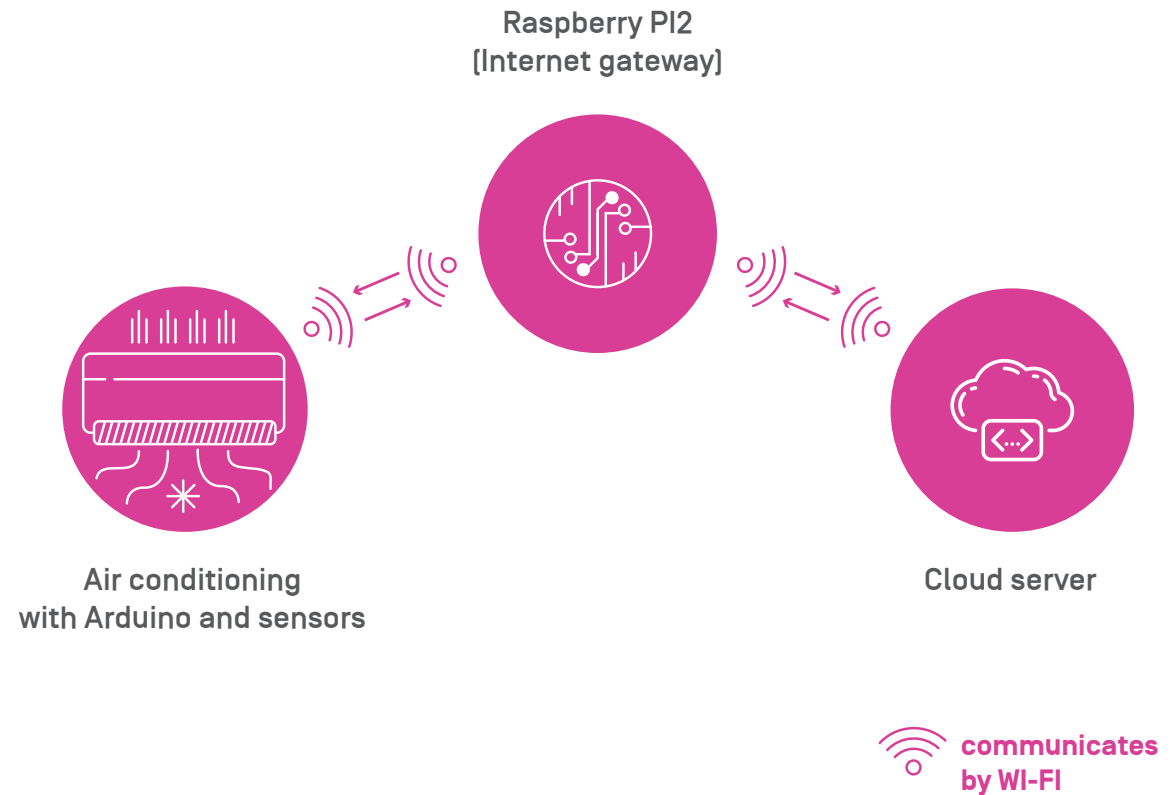
4 The system is tested in the laboratory for three consecutive days to identify the need for operating adjustments and solutions to make its use as easy as possible. In the same period, several tests are performed in order to measure its effectiveness, aside from measuring the energy saving levels and the thermal comfort provided to the environment.

Understand how it works
[http://bit.ly/escolamkr2]

EVALUATION

At the end of the experiment, students organize a five-minute pitching presentation for teachers, serving as an evaluation framework. The entire route is analyzed with a focus on developing an entrepreneurial spirit and the ability to solve and overcome problems. In addition to the evaluation of learning on programming topics and physics, such as waves and electric currents. The commitment and dedication of the kids during the process is also taken into account

RESULTS

Experimentation with Internet of Things artifacts made it possible for students to evolve into various technical and entrepreneurial aspects, as well as allowing the direct application of knowledge from the physics subject. They were able to create the artifacts and successfully program the operation of air conditioners according to the real need of the space. This meant a direct contribution to efficient electrical consumption at school. There was a significant reduction in energy expenditure in the physics lab, project testing environment. In addition, it was possible to perceive the evolution of the kids in various cognitive and interpersonal aspects. Some showed improvement in the development of algorithmic (programming) as well as engineering (in assembly and system development) solutions. Others have improved organizational and leadership characteristics and are always ahead of activity management. In general, the students were very involved and dedicated, due to the perception that they are developing their idea based on the knowledge obtained at school. They also revealed significant improvements, pointed out by other teachers, especially regarding the organization of activities and meeting deadlines.

LEARN MORE

How to Pitch
[http://bit.ly/Comopitching]

About Internet of Things at school
[http://bit.ly/idcoisas]

About Culture Maker
[https://glo.bo/2JfPkKo]
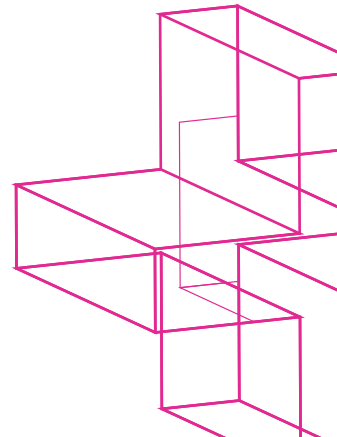
CHAPTER 6

CHALLENGE, LOGIC AND ARGUMENTATION

CHALLENGE, LOGIC AND ARGUMENTATION

In this chapter, we present projects that generate multidisciplinary experiences, exercising analysis, categorization, synthesis, model building and argumentation skills in the students. One of the initiatives adapts the agile methodology used for software development to the pedagogical context. In another practice, students are placed on opposite sides in a court where they discuss a particular historical fact. These experiences broaden opportunities to create new thinking models, such as the ability to do operations, explain events, and solve problems.
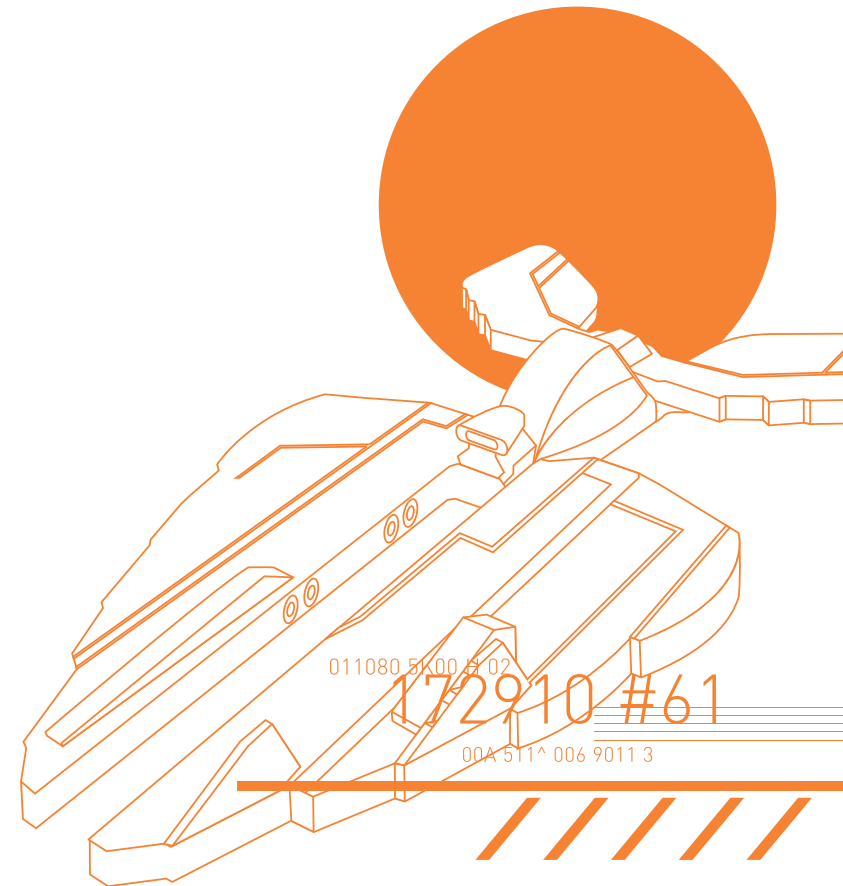
LIMITING TO CREATE

KEYWORDS

#CREATIVITY
#TEAMWORK
#PROBLEM_RESOLUTION

AUTHOR
CARLOS BURGOS

WHAT IS IT?

Problems, challenges and weightless elements are added to the development course of a project to encourage the kids to "think outside the box". In the process of creating an educational game, the possibilities for innovation have been amplified by the introduction of limitations pre-established by the teacher.

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

ARGUMENTATION

DIGITAL CULTURE

WHY DO IT?

The activity's main strategy is to expand the capacity of students' creative work precisely by limiting their horizons of creation. It mainly intervenes in the project design phase, establishing weightless elements and rules that must be incorporated by their authors. These inputs intensify challenges and leverage innovations. They are ingredients released which function as barriers to the creative dynamics of students. But the exercise of surpassing or incorporating the elements limiters develop problem solving and creative thinking. For researcher José Gomes (see **Learn more**). Creativity, when analyzed by different domains of knowledge, it can have many facets. For mathematicians, it's the ability to solve complex problems. For educators, it is the ability to innovate in education. For artists, it is the ability to make tangible or visible feelings or messages using means such as painting, photography and singing, among others. The author points out, however, that creative thinking and ability and to reflect and formulate about one's own creation are always the basis for the development of this competence. So with a simple strategy for scaling up challenges, one can leverage thepossibilities for innovation and intensify creativity.

RESOURCES

- Computer with internet access and programs suited to the proposed project type
- Pencil and paper

CLASS TIME

- 14 50-minute classes

HOW TO DO IT?

1 At first, the teacher invites students to develop a creative project. They need to inform the product objective, process parameters and requirements, and the end result expectations. The kids may be asked to create a game (digital or analog), an audiovisual product, an animation, an app, among many other possibilities to produce feeling and meaning. It is up to the educator to evaluate what their formative interests are and to set up a basic proposal in accordance with these learning purposes. In the initiative held at NAVE Recife, the challenge presented was the creation of a digital educational game with a high dose of innovation.

2 In the next step, the class is organized into work teams with a maximum of six members. At this time, students are invited to start designing the game, but to do so they need to consider some mandatory guidelines. The teacher presents three factors to challenge the kids:

- **Guiding thematic of the game:** each of the games that will be created by the teams must address one of the eight **Development Objectives**[1].

- **Inspirational reference:** The teacher determines that the games to be created should be inspired by digital games considered classic, such as Pac-Man and Breakout, for example.

1. Millennium Development Objectives (http://bit.ly/ODesnvm)

- ***Characters with predefined profile:*** groups are invited to draw all the characters that will be part of their game. For this, the educator organizes a set of characters and each team draws their own. For example, the team can raffle a character to be the hero, or the enemy. In this experiment, to magnify the challenges, the teacher created a range of character titles that referred to unrealistic profiles, such as a vegan shark, a hippie cloud, a mobster rabbit. From the titles, the teams need to detail the profile of the characters, listing their skills, weaknesses and singularities and articulating them with a narrative that addresses the development objective of the millennium they received as a theme. In this way, the imposition of the characters became the most destabilizing element for the students' creative process.

3 Given the limitations presented, it is important that the kids have a moment to reflect and study all the possibilities for the development of the game. The educator accompanies the groups and suggests that students research classic games and look for visual references for character composition and scenarios. This step ends when each team completes its planning in detail. The teacher should invest in this phase, because it is in the trajectory of conception and detailing of ideas that the development of creative thinking is opportune.

4 The next step is the actual production of the project. In the reported example, it is time to effectively program and develop the digital game. At this stage, each teacher can decide what is the best way to organize the production. In the case of digital game creation, the time available and the knowledge and technical and technological resources are crucial. Other projects will require other types of materials, knowledge and resources. It is up to the teacher to configure, from the beginning of the process, the type of project that is feasible in the school.

5 The course ends with each team presenting their project and reflecting on the results. In addition to giving an oral presentation, in this case with the presentation of the game itself, students need to tell about its creation process. The objective here is that the moment not only gives opportunity to the appropriation of results, but also enabling reflections on ways to create and innovate.

EVALUATION

The teacher gives grade, taking into account the following criteria: the creativity, innovation and quality of the material produced, the ability to indicate the innovative aspects of the game and the potential to elaborate on the process of creation.

RESULTS

Many students initially reacted badly to rules and limitations introduced for the creation of the projects. There was a movement of resistance because the strategy really forced them out of their comfort zone. But in the end it was possible to see an increase in the critical sense of the kids and an effective enrichment of intellectual and creative repertoire. The teams exceeded expectations by playing the characters that were initially presented by the teacher in a surprising way. The products also denoted a lot of research, demonstrating that the students were able to bring approaches beyond common sense. In other projects already carried out without the challenges of this activity, invited to talk about prejudice, for example, the kids were restricted to the creation of white and black characters. In this experience, however, the topic was addressed taking into account ethnic differences, religious, cultural and linguistic intolerance.

LEARN MORE

José Gomes
[http://bit.ly/canvaflu]
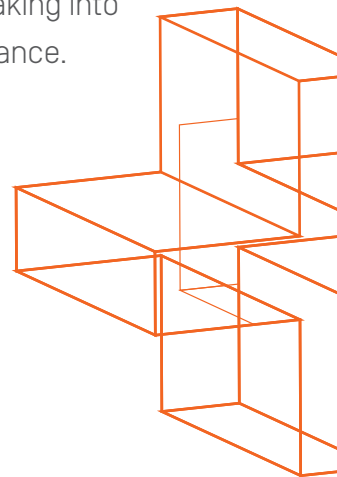
AGILE THINKING

KEYWORDS

#PROBLEM_SOLUTION
#AGILE_ METHODOLOGY
#TEAMWORK

AUTHOR
ANDRÉ OLIVEIRA

WHAT IS IT?

It is an activity that encourages students to solve problems to the challenges and new information, in teams, in a fast and adaptable way using the project methodology called Scrum. Experience gives opportunity, development of problem solving and openness to change by the students.

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

MULTIMEDIA

PROGRAMMING

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

DIGITAL CULTURE

EMPATHY AND COOPERATION

WHY DO IT?

Offering the kids more complex challenges is an excellent opportunity for skill development. Agile methodologies are used for the development of highly complex projects, which require constant change, and can support decision making in the face of various problems. Scrum's experimentation [http://bit.ly/pensamentoagil1] allows students to deepen learning that can be adapted to collective actions inside and outside the school environment (in the world of work, for example). Among these learnings, we highlight the ability to adapt to change, one of the most valued skills in the 21st century.

RESOURCES

For the manual method:
- Cardstock and Post-It notes
- Paper, pens, pencils and notebooks

For the digital method:
- Laboratory with computers and internet access
- **Trello platform**[1] [http://bit.ly/trelloaap] or similar, such as **Asana**[2] [http://bit.ly/AsanaAP], etc.
- Google Drive (or other cloud storage services like Dropbox, One Drive, and more)
- Excel (or other spreadsheet editing app, such as Google Spreadsheet)

CLASS TIME

- 12 50-minute classes

1. Trello [http://bit.ly/trelloaap]

2. Asana [http://bit.ly/AsanaAP]

HOW TO DO IT?

This didactic sequence proposes an adaptation of **Scrum**[3] [http://bit.ly/pensamentoagil1], a methodology commonly used by software developers to solve complex problems with greater agility and assertiveness. It is important to note that the whole process is done without students doing tasks outside the classroom.

Scrum is an agile methodology, that is, a toolkit that guides what needs to be done by incorporating the agile values and principles that make up the Agile Manifesto.

1 The activity begins with the teacher proposing that students develop a project for the creation of an analog game. They explain that all development will be based on the Scrum methodology. And clarifies that it is a tool that invests in revising the planning periodically to achieve more agile and significant results.

2 The teacher goes on to introduce the kids to the **Agile Manifesto**[4] [http://bit.ly/Maniágil], a document that underlies the Scrum methodology and proposes four values and 12 principles to develop software more effectively and assertively, allowing a quick adaptation to changes. The teacher allows the kids to learn more about Manifesto, already causing them to make relationships with

3. Metodologia Scrum
[http://bit.ly/pensamentoagil1]

4. Manifesto Ágil
[http://bit.ly/Maniágil]

aspects that they should pay attention to in building better teamwork dynamics.

3 Before starting the project, students are informed that the entire journey will be experienced as if they were working at a game creation company. The teacher will also act as if they were a client. In addition, some recommendations are given to help them reflect on how to manage the project:

- **Scope**: The teacher warns them of the need for the team to clearly delimit the scope of work, identifying their own limits.
- **Classification of the complexity of each redesign activity**: the kids are asked to assign a numerical value

to each meeting. The purpose of this classification is to quantify the challenges they can solve during redesign. This will help to prevent future mistakes.

- **Burndown Chart[5]:** [http://bit. ly/graficburn]: Students are recommended to represent the evolution of the project visually.

The Burndown chart is aided by a spreadsheet application and shows how many activities were performed over the days.

- **Management tool:** the proposal is to use the Trello platform, a virtual space that facilitates collaborative management. In situations where access to computers during class is difficult, other materials, such as
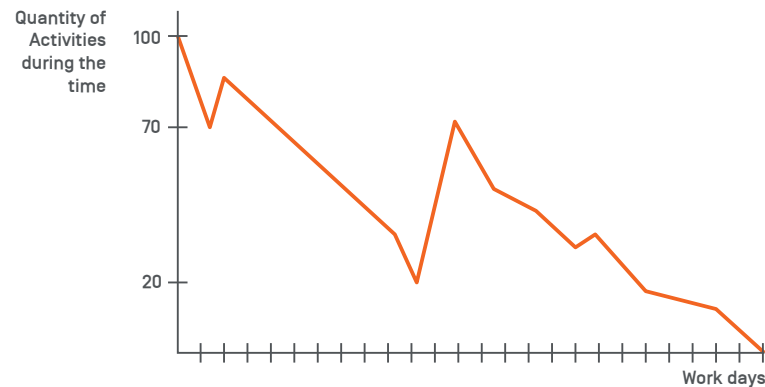
5. Burndown Chart
(http://bit.ly/graficburn)
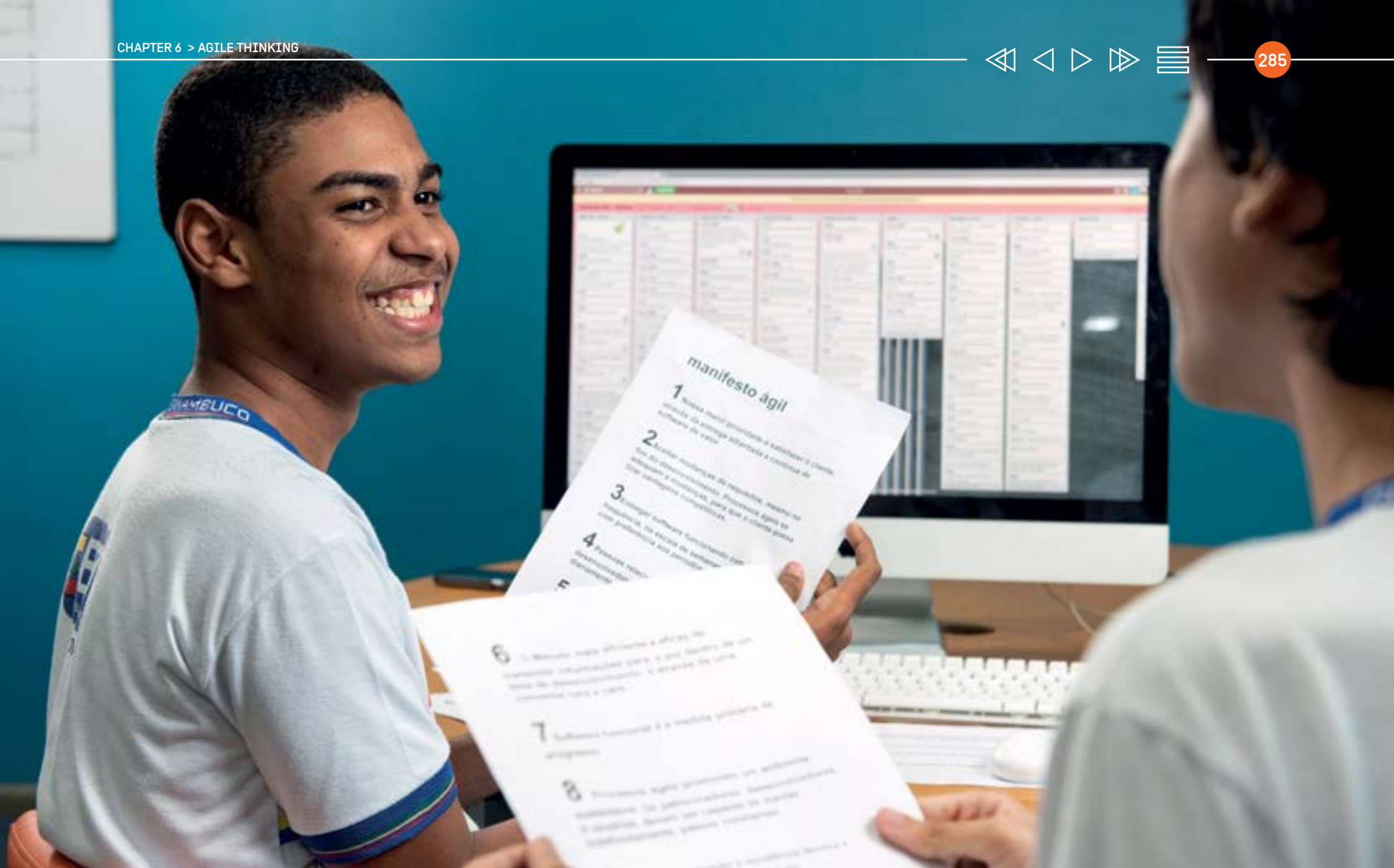
cardstock and post-its, can be used for students to record work progress.

4 After the orientations, the kids are divided into teams, according to the size of the class, forming teams between five and nine members. The educator takes on the anticipated role of a very demanding client and presents the problem situation: the client is a partner in an education company responsible for pre-university courses and tutoring. You need to encourage your students to study cytology, a subject in biology classes that you find that many have learning disabilities. To solve the question, you want to produce an analog game that teaches or encourages the student to investigate further. As a reference, the customer indicates that they want a game similar to the Game of Life or Monopoly. And with this proposal in hand, students are encouraged to talk to each

other and work on the overall design of their projects (each group makes a unique game proposal). If they get lost when confronting the demand and ask the teacher for further instructions, he or she should raise concerns so that the kids can evaluate their time and resource constraints and set up a viable proposal. The teacher (client) ends this class by approving the projects designed by the groups..

5 Each group develops their game prototypes, seeking to evaluate and redesign at the end of each period. In this experiment, it was proposed to adapt the deadlines of the original redesign cycles of the methodology. The following points were agreed upon with the class:

- Every three 50-minute classes, the kids stop game development to reschedule work for the next three classes. They also take stock of what

has already been produced to propose improvements;
- Every 50-minute class, students quickly review what was planned. With each redesign meeting, the teacher gives new challenges to the teams.

6 The teacher continues to play their role as a client and presents suggestions for changes and new demands to the projects. You can say, for example, that the company has hired a consultant and that this professional has guided the need for a major change in the game proposal. Or you could say that one of the partners presented new goals or suggested other references. The important thing is to introduce challenges that require changes in project design and, consequently, in the planning of actions.

Thus, the kids need to react very quickly, changing the rules of the game they are developing and adjusting the planning. Ideally, make a big change for the first redesign cycle so that the group has time to respond to the challenge. And then, with each meeting, introduce new demands, but with less complexity. The educator needs to calculate well what to suggest, so as not to generate impacts that are not circumvent in the available time. In the penultimate class, a small change in projects is still required, something that will require last-minute adaptation. A minor adjustment to the visual presentation of the game may be required, for example. Students have only one 50-minute class to make this adjustment and prepare the product presentation for the next class.

7 At the end of the course, each team presents their prototype quickly and succinctly, in just five minutes. The teacher invites other educators, stating that they are the partners of the contracting company. They also participate in the evaluation. In this evaluative moment, what is at stake is learning from the mistakes and identifying the lessons learned throughout the process.

EVALUATION

The quality and viability of the games created are evaluated, but these productions are not rated. The whole activity is structured to make a product, but the purpose of the experience is to develop skills such as problem solving, self-management, creativity and openness to change. As they follow the teams, the educator assigns grades, taking into account how each acted individually or in collaboration with colleagues, as well as the appropriation and application of the Scrum methodology.

RESULTS

The whole process was very dynamic, inviting the students to give their maximum, to plan nonstop. The teams were able to perform a complex project precisely because they were taken from their "comfort zone" at all times. The challenges that were constantly presented by the teacher and the periodic planning and redesigning routines were perceived by the students as a major unique feature. To finished creating the games, they were surprised by a very significant result in a short time and this is valued by everyone. Thus, the experience was also critical so that each student could realize their own potential.

LEARN MORE

Guia do Scrum
[http://bit.ly/Guiascrum]
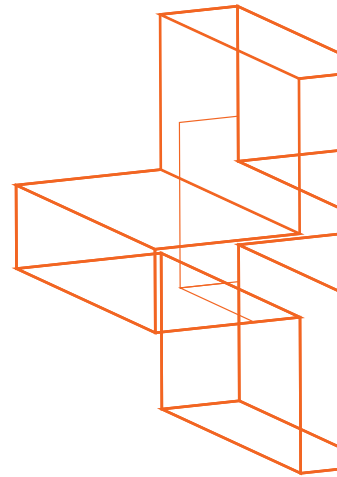
MATHEMATICS IN PERSPECTIVE

KEYWORDS

#SPACE_GEOMETRY
#UNITY3D
#INTEGRATION

AUTHOR
**JOSÉ AUGUSTO MENDES
CRISTINA NEVES**

WHAT IS IT?

A course for learning about spatial geometry, which invites students to experience the visualization and manipulation of geometric shapes in two and three dimensions, integrating the subjects of Mathematics and Programming. The kids produce drawings on paper as well as using the Unity3D tool, thus developing notions about orthographic views, depth and volume.

SUBJECT AREAS

MATHEMATICS AND ITS TECHNOLOGIES

CURRICULAR COMPONENTS

MATHEMATICS

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

COURSE

PROGRAMMING

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

EMPATHY AND COOPERATION

WHY DO IT?

Teaching mathematics often becomes challenging when the contents are approached only theoretically and abstractly. In the case of spatial geometry, this learning may prove more difficult when the student cannot understand the notions of orthographic views, volume and perspective well. This didactic sequence gives the kids the opportunity to experiment with the visualization and manipulation of solid geometry in 2D and 3D environments so that they can get a deeper understanding of geometric concepts. On the other hand, in the teaching of programming, mathematical knowledge is fundamental. And this activity explores the articulation between the knowledge of the two subjects, using digital tools to invite students to experiment with drawing in three dimensions and to create a digital game with geometric shapes.

RESOURCES

- A set of geometric acrylic solids
- A **Blokus 3D**[1] game - http://bit.ly/Blok3D (not essential, but enriching)
- A4 paper (5 sheets for each student)
- Pencils (one for each student)
- Computers with one of the free 3D manipulation software installed (maximum 4 students per computer): **Unity3D Software**[2] - http://bit.ly/3Dunity / **Sketch up Software**[3] - http://bit.ly/3Dskcheup / **GeoGebra Software**[4] - http : //bit.ly/GeoGeb

CLASS TIME

- 17 50-minute classes alternating between Math and Game Programming subjects

1. Blokus 3D
[http://bit.ly/Blok3D]

2. Unity3D
[http://bit.ly/3Dunity]

3. Sketch up
[http://bit.ly/3Dskcheup]

4. Geogebra
[http://bit.ly/GeoGeb]

HOW TO DO IT?

1 Firstly, in mathematics classes, students come into contact with knowledge of geometry. The teacher uses an acrylic solids kit and a game called Blokus 3D to present initial contents of spatial geometry. The educator may decide to introduce this content according to their interest.

2 Parallel to this introduction of Mathematics, in the classes of the Technical Programming Course, the class is introduced to a game development tool called Unity3D. This is one of the tools used especially for 3D object modeling and scenario design for digital games. The first phase is recognizing Unity3D functions. The teacher uses a multimedia projector to present its features in real time. Ideally, this meeting will take place in a computer lab so that students can also explore the software. In schools where there is no technical programming training, the teacher may use other programs in place of Unity3D. It is suggested to try Sketch up or GeoGebra.

3 The third step is an exercise promoted in an integrated way by Mathematics and Programming teachers. The class is organized into subgroups (maximum five members per group) and each team receives, as a challenge, three views to draw a piece with perspective in three dimensions on an A4 sheet. Each piece is made up of cubes, as in the game **Tetris**.

4 Then, in mathematics classes, the teacher uses experience with the creation of perspective geometric shapes to deepen the theoretical knowledge about spatial geometry. For this, students are invited to solve a series of mathematical problems involving these concepts. In the next step, in the Programming subject, groups re-draw pieces in three dimensions, but now using the Unity3D software. Each team will repeat the exercise of creating the pieces that were drawn on A4 paper. The creation process is the same: the kids use three views to create the pieces. It's the same experiment done with pencil and paper, but now on the computer and with the help of Unity3D (or another alternative tool). .

5 Finally, in the Programming subject, the teacher expands the challenges for the students. Each team is invited to invent a digital game using the 3D pieces created in the previous step. The proposal of the game may come from a recommendation or reference presented by the educator or may be authored by the kids. This is an optional phase in the course, which serves to enable the improvement of programming knowledge. For the effective production of games, students must have some prior knowledge of the 3D development tool, as well as experience with Programming Logic and Object Oriented Programming.

EVALUATION

Teachers evaluate each production along the way, observing problem solving about spatial geometry content, the design of perspective pieces (both on paper and using the digital tool) and the game produced at the end of the process. In this evaluation, the following criteria are considered: student engagement and commitment, creativity and correct application of mathematical and programming knowledge.

RESULTS

The experience gave materiality and tangibility to the knowledge in geometry, enabling the kids to exercise the notion of perspective and could later compare with the same experience performed with the help of the software. This significantly broadened and deepened the compression of concepts. It is a leap from abstract to concrete knowledge that has enabled students to develop and consolidate mathematical mental models. During the process of drawing production and the game, the kids assumed leadership roles in their groups, exercising collaboration, conflict resolution, and creativity. From a programming standpoint, the activity enabled the exercise of 3D character creation, the use of keyboard and mouse inputs, and the translation and rotation of the object (to understand depth). Some games created were selected at festivals, such as the Brazilian Games Symposium - SBGames.

LEARN MORE

Article Ensino de Geometria com Tecnologias Digitais: Experiências dos professores do programa de residência docente do Colégio Pedro II [http://bit.ly/GeoTec]

Cubetrix Game [http://bit.ly/cubetri]

Perspective Game [http://bit.ly/jgpersp]

- SOUZA, B. O. Souza. Ensinando matemática com jogos. Dissertação de Mestrado, Universidade Estadual do Norte Fluminense Darcy Ribeiro, Rio de Janeiro, abr. 2013.
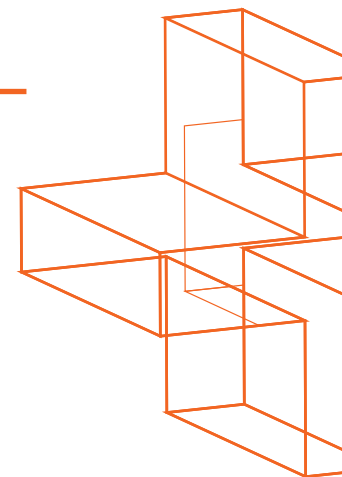
HISTORY ON TRIAL

KEYWORDS

#HISTORY
#SIMULATED_JURY
#VARGAS_ERA

AUTHOR
ANA PAULA MOGETTI

WHAT IS IT?

The classroom becomes a courthouse, where students are encouraged to analyze the pros and cons of a relevant and representative historical fact. In this proposal, the challenge was to research and support arguments in defense and/or accusation about the Vargas Era (1930-1945) in Brazil.

SUBJECT AREAS

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

HISTORY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

COMMUNICATION

ARGUMENTATION

WHY DO IT?

The initiative proposes a differentiated form of research and deepening of knowledge about a certain curricular content. Students also try to build discourses on this knowledge and, mainly, they imaginatively go to a period of their country's history, in this case, the years of Getúlio Vargas's presidency. The kids play an active role in the learning process, exercise responsibility and, most of all, emotionally connect with historical facts. Simulating a jury provides better results than traditional seminar models for research presentation, engaging the kids to study and enabling them to achieve more meaningful learning. When challenged to formulate well-founded ideas, the class is encouraged to develop argumentation, which is a general competence of the new Common National Core Curriculum.

RESOURCES

- History textbook addressing the Vargas Era
- Papers and pen
- Computers or cellphones with internet access
- Court simulation props: Gavel, TNT, or colored fabric can be provided to adapt as magistrates' clothing, cap, hat, dark glasses, make-up, and other set elements that the teacher and students deem necessary to characterize the characters

CLASS TIME

- Eight 50-minute classes

HOW TO DO IT?

1 The teacher begins with an expositive class, with conceptual and theoretical approach about the historical period in which President Getúlio Vargas was in power. This is an important moment to contextualize the content that will be studied and judged by the class.

2 NIn the second stage, provoked by the text **"O Estado Novo no contexto internacional"**[1] [http://bit.ly/txEnovo], by historian **Boris Fausto**[2] [http://bit.ly/Bfausto], the kids are invited to answer the following question: Why does this regime essentially generate a series of evils and at the same time have

facets of progress? Students respond freely. They usually bring both arguments for and against. Faced with the impasse, the teacher invites them to decide the controversy in court. And so it presents the proposal for everyone to simulate a trial of the period..

3 The teacher shares some notions about the rules of a trial and which professionals work in a court with the class. Everyone is encouraged to discuss these rules and actions a little. From this, students apply to play the most diverse roles in the trial. When more than one wants to occupy the same function, the

educator organizes a popular vote and the most voted takes office. Thus, the whole class gets a role to play in the mock jury: judge, defense lawyer[s], prosecutor[s], defense witnesses, prosecution witnesses, clerk[s], police officer and Getulio Vargas himself. Each character is assigned an advisor, so that the kids work in pairs to organize study and preparation for "judgment" day. The other students make up the popular jury. It is also a good idea to choose two representatives of the class to "cover" [photos/shoot/live stream] the entire trial. They will organize materials and think about the best form of transmission and registration of the jury.

1. O Estado Novo no contexto internacional
[http://bit.ly/txEnovo]

2. Boris Fausto
[http://bit.ly/Bfausto]

4 A work schedule is created, setting a deadline for teams to study and prepare. From there, everyone searches the internet for how a jury works and builds the rules for judgment day together. It is interesting to create a virtual space for sharing information and monitoring the systematization of everyone's studies. This environment should be chosen according to the most familiar media or platform (Google Drive, Facebook group, WhatsApp, etc.). A student can take on the role of steward by creating the group, including all classmates and reviewing the dates and goals for each step of the calendar. Through this virtual space, questions can also be sent to the teacher.

5 For the script of the judgment, students will seek to deepen their knowledge about the historical period researched. In addition to searching for the content of the period, they should prepare the outline of their lines by writing brief arguments for their characters. The teacher should emphasize the importance of this preparation as it prevents them from forgetting their arguments during the trial. This is a resource that also helps shy kids who have difficulty expressing themselves in public. At this moment, it is essential that the teacher closely follow the research, guiding the class on the quality of the references they are accessing.

6 The last phase of the course is the judgment simulation in the classroom. On the agreed day, the whole class collaborates with the organization of the environment. It is also

7 The text finalized by the kid who assumed the role of registrar is posted in the virtual environment to be read, approved and changed by the rest of the class. Everyone has a week to read and supplement the file. At the end, the teacher reads the text and presents feedback to the students. In this return, they make considerations about the domain (or not) of the content and corrects the historical distortions or mistakes. And it makes room for the kids to also identify and share their learning.

recommended that students dress up in props according to the assumed character. At this time, it is essential to pay attention to the arrangement of tables in the room in order to simulate the atmosphere of a jury court. The judge opens the session, mediates the speeches and invites all to present their arguments. They call the witnesses one by one, and finally gives the popular jury the opportunity to vote and give a verdict. They obey the final sentence and, if found guilty, Vargas is arrested. If he is acquitted, he is entitled to a beautiful populist speech. The registrar records all the relevant points of the process and systematizes an answer to Boris Fausto's initial question, which should be given to the teacher.

EVALUATION

The teacher assigns a single grade to the whole class. This note is constructed, taking the following criteria into consideration: collaboration for the organization of the judgment, responsible representation of the assumed roles, mastery of the theme by each of the main characters, silence and attention to their colleague's speeches at the jury's simulation, registration written with the class's official response to Boris Fausto's initial question.

RESULTS

A deep understanding about the historical period studied is undoubtedly one of the main results. However, it is also possible to identify the development of various skills, including argumentation, responsibility and collaboration. As the teacher assign a grade to the process and it's a global average of all individual grades, this encouraged everyone to help each other and work for a better outcome. Everyone grew a lot with this experience and it is possible to perceive, especially in the 3rd year classes, the identification of those students already thinking about choosing careers in the area of law, history and even politics. The same is true of the interest of some of the kids in the artistic field, with the revelation and/or discovery of impressive creative talents for acting and the characterization of the characters. Moreover, strengthening the bond between students and teacher is a a very important and worthy point.
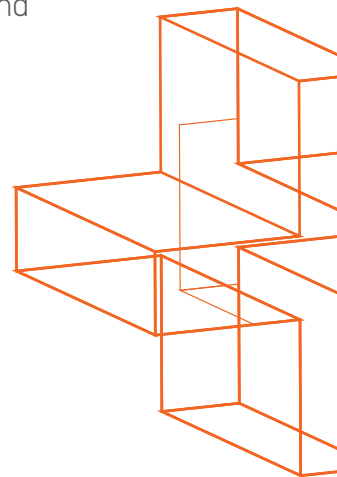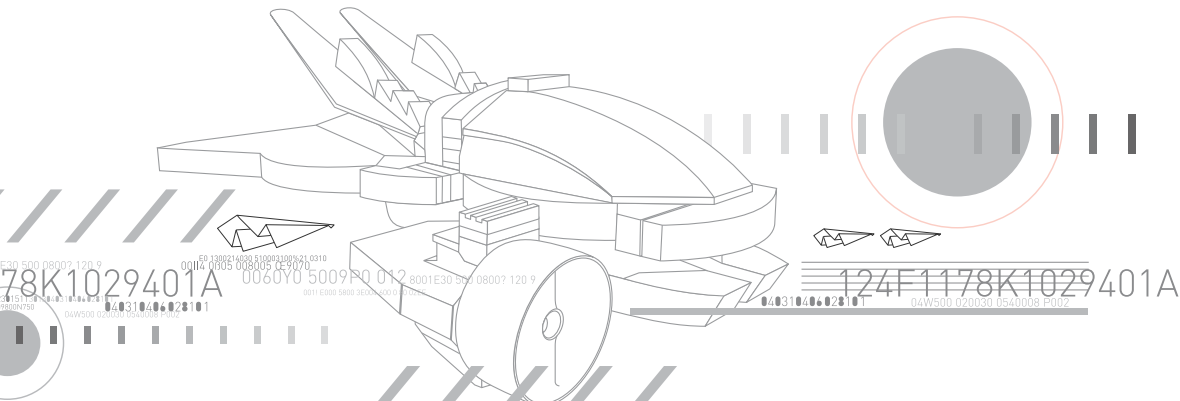
POPDEBATE

KEYWORDS

#DEMOGRAPHIC_THEORIES
#DEBATE
#ARGUMENTATION

AUTHOR
MARTA FRANCESCUTTI

WHAT IS IT?

Debate that follows the game format, stimulating the study of demographic theories. The kids analyze and expose specific concepts about human populations, developing argumentation and critical thinking.

SUBJECT AREAS

APPLIED HUMANITIES AND SOCIAL SCIENCES

CURRICULAR COMPONENTS

GEOGRAPHY

TARGET AUDIENCE

HIGH SCHOOL

SKILLS

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

KNOWLEDGE

ARGUMENTATION

WHY DO IT?

The debate develops the ability of students to express themselves orally in an organized, clear and coherent manner. It is a communicative procedure that requires the group to formulate consistent arguments, and the development of this skill is one of the main objectives of the activity. The debate is an exposition of different points of view on a particular subject. People are not judged, but ideas. Thus, experience provides the opportunity to exercise critical thinking. By constructing concepts and arguments about a studied subject, the kids are learning ways to create knowledge. Organizing the debate as a game also makes the class fun and engages the participants.

RESOURCES

- Geography textbook with demographic content
- Student´s smartphones

CLASS TIME

- Three 50-minute classes

HOW TO DO IT?

1 The teacher proposes a guided study activity. They ask that the class be organized into groups (maximum five members each) so that they can read demographic texts. The idea is that the kids can talk and familiarize themselves with demographic concepts, that is, understand each indicator, its differences and how to reach the results. After this exchange between students, the educator complements the information, highlighting the importance of the study of populations to plan geographical spaces in their presentation.

2 In the second meet, the teacher discusses the relationship of indicators presenting the dynamics of populations before and after the Industrial Revolution, mainly analyzing the case of developed countries. The goal is to get students to reflect on the impacts of industrialization on population increases and decreases. Given the picture presented, the teacher reveals a deadlock that exists between social scientists: those who follow the Reform line, with the reduction of the global population to avoid hunger; and the thinkers who indicate the growth of food production as an alternative, the so-called Green Revolution, Neo-Malthusian line. After this contextualization, the class is organized again in groups for a study oriented on the two streams of thought, using the textbook as a reference.

3 The next step is dedicated to holding a debate with all students involved. The class is divided into two groups

and the teacher asks each team to choose one of the demographic theories about global population growth to defend. One part of the class will advocate for the Green Revolution and the other will argue for birth control and shrinking population. A team is drawn to start the presentation in favor of their theory. The other group needs to rebut the arguments on the opposite side and add new theses in favor of the ideas it is defending. As the debate continues, the teacher divides the board in half and notes all the arguments presented by both teams. Each argument annotated on one side enters the counterargument on the other side. And each valid argument gets a point. Before the argument is exhausted, the teacher reverses the groups. The team that defended the Neo-Malthusian proposal now defends the Reformist and vice versa. At this point, the team that was winning, being

surprised by the change of sides, will have to try to turn the tables.

4 At the end of the debate, the educator invites some of the kids to record a video with their cell phones. They take on the role of reporters and interview their colleagues about their challenges and learning achieved throughout the activity. In this dynamic, new arguments are usually spontaneously formulated. If this happens, the teacher records the new ideas on the board. Another option is to make this moment of appropriation of results together with the teachers of the school's Sociology and Philosophy subjects. Students present their main arguments and counterarguments and the guests bring complementary views on the subject.

EVALUATION

No score is assigned to the activity. The teacher evaluates the quality of the arguments presented during the debate with the students.

RESULTS

Targeted study stimulated collaborative learning and curiosity from students about demographic theories. In addition to deepening the appropriation of knowledge on the theme, throughout the game, the kids were able to formulate their own views and substantiate them. In this way, the dynamics enable them to develop critical thinking and argumentation in a very natural and ludic way. The activity positively impacted student performance in evidence of subject.

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LEARN MORE

About organizing debates
[http://bit.ly/sdebate]
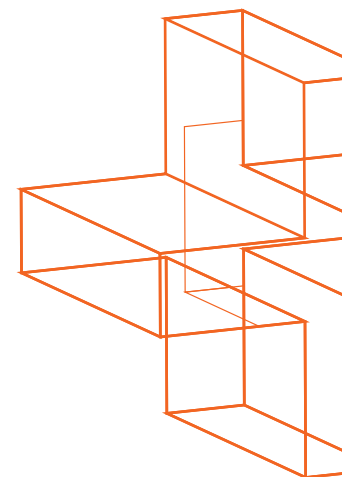
TAXONOMY SYSTEM IN GROCERY STORE BOOKLET

KEYWORDS

#CLASSIFICATION
#TAXONOMY
#LIVING_BEINGS

AUTHOR
ANDREA PIRATININGA

WHAT IS IT?

A teaching activity that uses promotional products in the grocery store booklet to get students to understand concrete, the modes of grouping and systematization on the categories of living beings. The kids are invited to create a rating system as if they were organizing the products on shelves.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

TARGET AUDIENCE

ELEMENTARY SCHOOL

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

ARGUMENTATION

WHY DO IT?

The classification of living beings is one of the most challenging high school curriculum content in Biology for students and teachers. Trying to understand how scientists and taxonomists work and coordinate their studies may seem far removed from the reality of the kids. And recently this challenge has been magnified, as these systems have become even more complex with advances in knowledge about the evolution of living things. Current studies use DNA mapping tools and phylogenetic. The proposed activity seeks to relate a students' daily experience with organizational systems, to teach the scientific method of nature classification. The initiative builds on the kids´ intuitive principles to help them understand more complex biology content. From this experience, with concrete everyday objects, the student interprets/learns the reasoning of taxonomy researchers and scientists more easily, structuring learning for the introduction of other knowledge in biology, such as the study of Kingdoms Animalia and Plantae.

RESOURCES

- Paper
- Pencil for taking notes
- Scissors (or ruler) and glue
- Grocery store booklets

CLASS TIME

- Two 50-minute classes

HOW TO DO IT?

This is an activity that introduces the curriculum content of taxonomy. Propose an experimentation related to the subject to the class, even before the teacher formally approaches it during the classes.

1 Organized in groups, students receive some grocery store promotional booklets, starting a process of observation and clipping the products contained in the leaflets (each team receives at least two booklets). The teacher encourages the kids to associate the products with each other, finding a pattern of likeness. They can organize products by brand, group solids and liquids, or use any other parameter, such as cookie types, for example. To make it easier, the teacher asks them to think about how the shelves of a grocery store are organized. The arrangement of products in aisles and on shelves follows certain rules. Toiletries are on shelves in one section, soft drinks in another, and chocolates in a third, for example. Each grocery store chain may use different organizational criteria, but encouraging the kids to remember the experience of going to the grocery store helps them understand the exercise. At first, students often find it difficult to organize and classify items, and it is more obvious to look for close elements. The teacher should then guide them to broaden the reflection, seeking new types of classification. Even if it sounds strange, such as gathering soybean oil and fabric softener, if the criterion is "liquid products".

2 After the groups finish the analysis of association criteria for their clippings, the teacher asks them to write a report, pasting the grouped items according to the defined classification. In this report, besides presenting the classification system, demonstrating it with the clippings, students are also invited to justify their choices. In this justification, they need to explain why they chose to set up the grocery store shelves in a certain order, making it clear how the organization set up would make it easier for a shopper to find products.

3 Right after the reports are assembled, it is time to present the results. Each team explains all the criteria and standards created for their rating system, justifying the reasons for each choice. As the groups make their presentations, the teacher invites the rest of the class to comment on the ranking presented. The idea is that the whole class focuses on identifying the organizational principles selected by each group, evaluating whether they are logical, facilitate understanding, have gaps etc. The class should imagine themselves in the grocery store, orienting themselves to shopping on the shelves organized by each group. Thus, all reflect on the efficiency of the classification systems created.

4 In the next class, the teacher formally presents the content on taxonomy. At this meeting, as they demonstrate the conventions, parameters, and taxonomic classification criteria, they ask students to establish relationships with the organization created by them from the booklets. The teacher presents questions and invites the kids to make comparisons. It is a pedagogical strategy to help them realize that the model agreed upon by science follows similar organizational principles as the class created during the activity with promotional booklets.

EVALUATION

The practice evaluates student presentations and reports produced by each group. Engagement, cooperation, organization, logic and coherence of the systems created are observed.
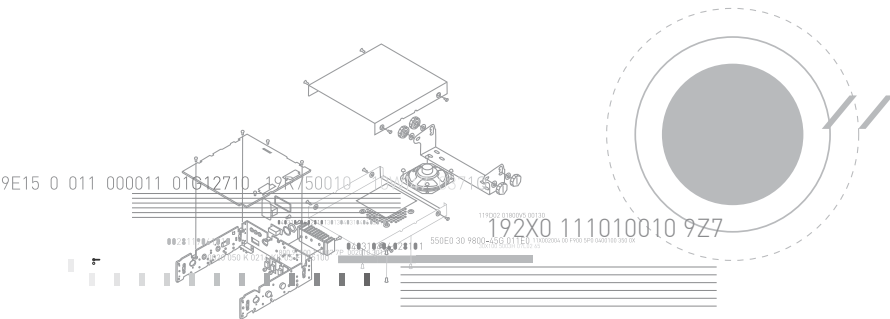
RESULTS

The experience has enabled students to establish relationships between grocery store shelf organization criteria created by them and the classification principles of living things. Was it possible to collect subsidies that highlight the ability to observe and think logically about the organizational patterns, knowledge that may be applied in other contexts. That is, we can say that it strengthened critical and scientific thinking. In the classes following exercise with the booklets, it was observed that they understood even better, the history of the scientific taxonomy, identifying the logic and what is behind the changing patterns of organization As time went by.

LEARN MORE

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- AMABIS, J. M. & Martho, G. R. Biologia Moderna. vol 2. Rio de Janeiro. Ed. Moderna, 2016.

EDIBLE CELL
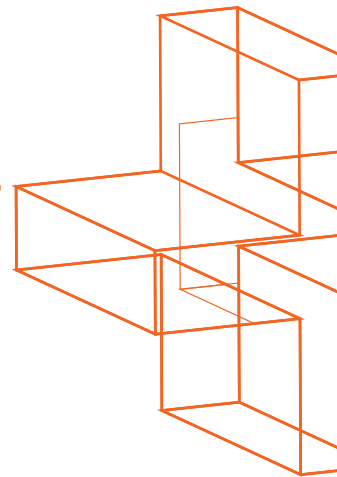
AUTHOR
DANIELA BAHIA

KEYWORDS

#CELLULAR_BIOLOGY
#SCIENTIFIC_MODEL
#CREATIVITY

WHAT IS IT?

Students build scientific models of three-dimensional cells using food as ingredients. In addition to enabling learning about Cellular Biology in a fun and ludic way, the activity is an interesting alternative for schools that don't have a microscope.

SUBJECT AREAS

NATURAL SCIENCES AND THEIR TECHONOLOGIES

CURRICULAR COMPONENTS

BIOLOGY

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

KNOWLEDGE

SCIENTIFIC, CRITICAL AND CREATIVE THINKING

DIGITAL CULTURE

WHY DO IT?

This didactic sequence allows students to understand the different types of cells in living beings, understanding the composition, structure and function of cellular components. It is also an excellent alternative to overcome the challenge of lack of microscope access, making the Cellular Biology learning process more efficient and meaningful. The activity is conducted soon after the study of the origin of life and becomes relevant for the kids to understand that, aside from being the morpho-physiological units of most living beings, cells have a great diversity. The process of creating edible three-dimensional models is very ludic and stimulates the development of creativity and the appropriation of scientific tools and procedures.

RESOURCES

- High School Biology Textbook
- Computers with internet access
- Students' smartphones
- **Google Drive**[1] [http://bit.ly/32iGowv]
- **Pinterest**[2] social network access [http://bit.ly/2xox6Ra]
- Different types of foods for the constitution of the cellular model (fruits, breads, pies, cakes, candies and different colored jellybeans)

CLASS TIME

- Six 50-minute classes.

1. Google Drive
[http://bit.ly/32iGowv]

2. Pinterest
[http://bit.ly/2xox6Ra]

HOW TO DO IT?

1 The activity begins with information about cell study methods. For this, the teacher can use textbooks or prepare a slideshow, for example. It mainly introduces students to the different types of microscopes and the different cell types: prokaryotic cell, animal eukaryotic cell and plant eukaryotic cell.

2 Subsequently, the class is divided into groups of up to six members. Teams are invited to search the internet and gather information and real images of all cell types, generated by optical and electron microscopes. Then each group organizes, on the Pinterest social network, a board with the images identified in the survey.

3 After this first result, the teacher deepens the information about Cellular Biology, highlighting the differences between prokaryotic cells (bacteria) and eukaryotic cells (of all other living beings). Each team chooses a type of eukaryotic cell that will be the object of further research and will serve as a reference for the construction of a three-dimensional cell model. Students may choose to investigate, for example: a neuron, a macrophage, a plant parenchyma, or a protozoan, among other possibilities.

4 In the next step, the class returns to the internet, but now focused on searching for images of the chosen cell type. The teacher guides each team to select a set of images from the cell to serve as a reference for the creation of 3D models. The groups archive the images in a virtual folder (in the NAVE Rio experience, the Google Drive platform was used). All students and the teacher have access to this same folder. It is a resource for the kids to organize their team planning and facilitates the accompaniment and guidance of the educator.

5 After researching and gathering the reference images, it is time to move on to designing the three-dimensional scientific model of the cell type under study. The 3D model needs to be built with food or

edible ingredients. And the challenge for the class is to be able to create the cell type representation as reliably as possible, ensuring that all structures are represented. Students need to consider in this plan: material characteristics, color and flavor combination and feasibility. All of this planning is recorded in one document and posted to each team's folder in Google Drive. It is important for the kids to consider the cost of food as each team will be responsible for bringing their ingredients. Thus, the teacher guides them to give preference to what they already have at home.

6 Groups have approximately two weeks to organize all necessary edible ingredients. On the appointed day, everyone takes food to school and the class is held in the cafeteria. Each team occupies a table

and assembles its edible cellular model. The teacher photographs it and presents the three-dimensional model to the entire class. The class ends with a tasting. The kids are also encouraged to organize and clean the cafeteria after the activity.
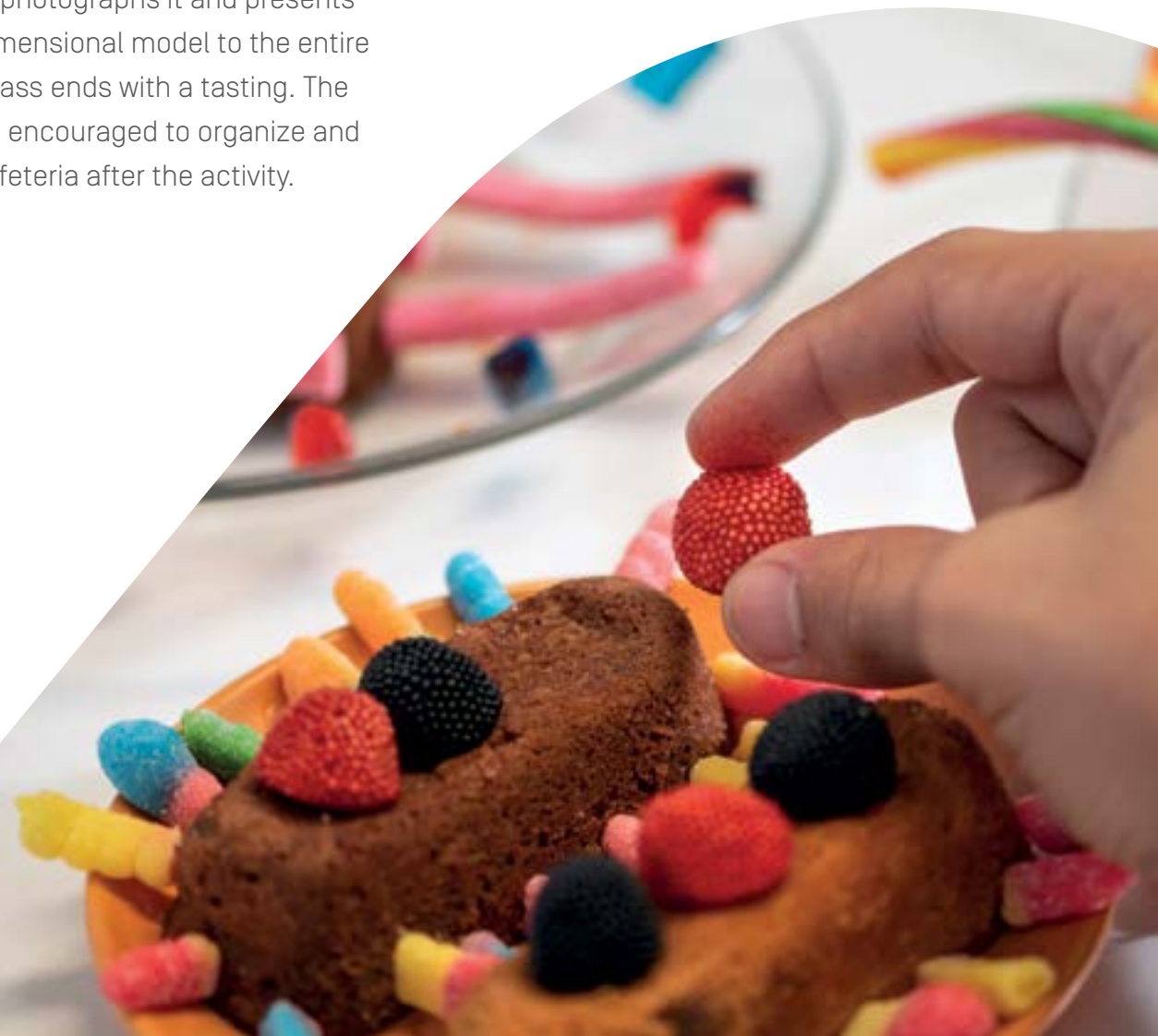
EVALUATION

The teacher evaluates the quality of the research carried out by each team, as well as the creativity and scientific adequacy of the edible cell model.
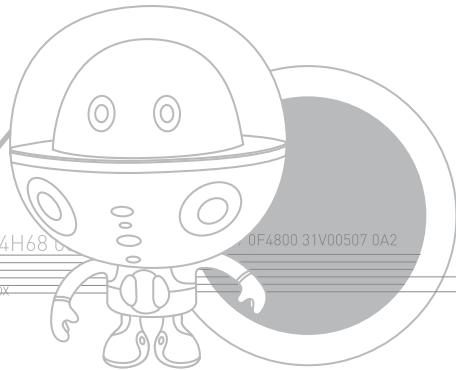
RESULTS

The leadership, autonomy and investigative aspect were stimulated through all stages, allowing the kids to work in a collaborative and supportive way. The initiative was fundamental to overcome not having a school microscope. The textbook images, however beautiful and produced with quality, did not contribute so much to the development of scientific thinking by students. The process enabled an effective appropriation of the characteristics of each cell and the specificities of the organelles, as well as allowing the kids to understand the different types of microscopes (optical and electronic) and their respective characteristics, as well as their importance for cellular study.

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LEARN MORE

E-book **Biologia Celular I, vol.1**
[http://bit.ly/2XCYDOD]

E-book **Biologia Celular I, vol.2:**
[http://bit.ly/2Sa0ynv]
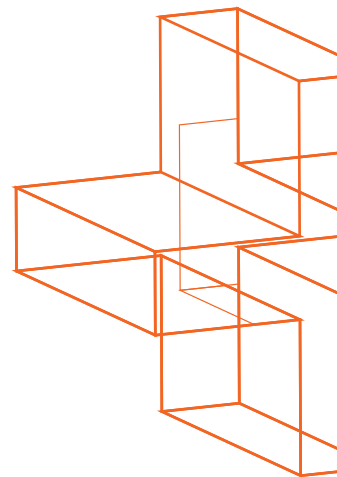
YOUNG MONITORS

KEYWORDS

#PROBLEM_SOLVING
#EDUCOMMUNICATION
#LEADERSHIP

AUTHORS
ROAN SARAIVA
SÂMARA CARVALHO
JONATHAN CAROBA

WHAT IS IT?

Students practice argumentation and oral expression in an activity of the formative journey to become Media Education Space monitors, a center for research, production and media experimentation in the school context.

SUBJECT AREAS

LANGUAGES AND THEIR TECHNOLOGIES

APPLIED HUMANITIES AND SOCIAL SCIENCES

NATURAL SCIENCES AND THEIR TECHNOLOGIES

MATH AND ITS TECHNOLOGIES

MODALITY

PROFESSIONAL AND TECHNOLOGICAL EDUCATION

TARGET AUDIENCE

HIGH SCHOOL

ADULT LEARNING

SKILLS

ARGUMENTATION

COMMUNICATION

DIGITAL CULTURE

WHY DO IT?

In each of the schools of the NAVE program, there is a space called Media Education, which opens to the construction of meaning of the school community and to the media and technological experiments. Every year, 20 kids participate, voluntarily, as monitors of this space. Selected students experience a formative path focusing on the development of communicative skills. They assume the role of building knowledge in partnership with their teachers and peers, making use of technological devices. We share a didactic sequence of this formative journey here, which aims to develop the argumentation and oral expression of the students. This activity, as well as the whole formation trajectory with the monitors, also privileges the appropriation of the media and the development of youth leadership.

RESOURCES

- Computers with internet access
- Mobile phones with video recording capabilities

CLASS TIME

- 2 hours

HOW TO DO IT?

The formative cycle of young monitors consists of four juxtaposed stages, with a workload of two hours per week, over a year. We highlight a didactic sequence here that was held in one of the weekly formative meetings with the students.

1 Each student is challenged to create a one-minute video. The content of this audiovisual production must answer a question. For the answer, the kids need to make good arguments. The educator brings a box of 20 different questions, one for each monitor. The questions may address any topic of interest to the educator, but ideally students should not have much affinity towards the subject to increase the challenge.

2 At this moment the proposal is to improvise, so students do not have much time to reflect and formulate their answers. Each should immediately start recording the video, answering their drawn question facing a camera. The kids are organized in pairs. Using a mobile phone, each person records their colleague's oral exposition, which should last one minute. At the end the students, still in pairs, watch their productions. The pair critically analyzes the video and suggests points of improvement, considering the arguments built.

3 After this first phase of the exercise, the educator presents the kids with references and tips to improve the oratory, the framing, the quality of the sound capture and also the organization of the narrative and arguments (see Learn more). They also request that each pair present the improvement recommendations they recorded during the evaluation of their recordings to the rest of the class. Ideas presented by students are noted on a board. Thus, this stage becomes a moment of collaborative production of knowledge about the experience.

4 To finish the activity, each pair is given the mission to rewrite the video, answering the same questions previously drawn. However, this time they will have more time to prepare the speech. The educator encourages everyone to use their smartphones or computers that are connected to the internet to search for information that qualifies their arguments. The kids will also be able to focus more on formulating ideas before recording. All videos produced are shown to the class. The educator invites the monitors to evaluate the path experienced and to identify their learning.

EVALUATION

At the end of the meeting, the young monitors are invited to evaluate themselves. For this, they take into consideration formative **objectives**[1], the mission and values that guide the work as monitors and also a set of **skills**[2] that they undertake to develop when they become monitors.

RESULTS

The development of the argument is undoubtedly the greatest achievement at the end of this meet. However, as this moment is part of a continuous formative journey of each kid in the experience as a monitor of the Media Education Area, students often recognize other learning that is related to activities already experienced in the exercise. The fact that the monitors are very clear about the objectives proposed in this training also allows them to advance in self-knowledge and self-evaluation. As the kids develop, they start to support the media projects of teachers and students at school. This enables a very fruitful exchange, with students teaching their teachers and classmates. Thus, the experiences developed in the Media Education area positively impact the ways of learning, teaching, communicating and also producing in the classroom.
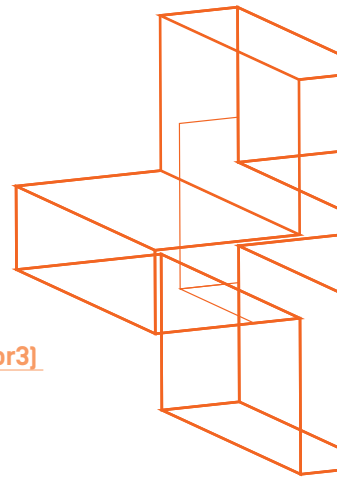
LEARN MORE

1. Objectives
[http://bit.ly/jovensmonitor1]

2. Skills
[http://bit.ly/jovensmonitor2]

Complete training course
[http://bit.ly/jovensmonitor3]

AUTHORS

AGNES D'ALEGRIA

I am a Philosophy teacher and I am interested in art and culture, African and indigenous philosophies. I have taught high school in the state network of Rio de Janeiro since 2010, I was a teacher at the Federal Center for Technological Education - CEFET/Maracanã. I prepared teacher training material from the Center for Youth and Adult Education, for the Science Center and the Distance Higher Education of the State of Rio de Janeiro (Cecierj Foundation). I am a fan of horror movies and fantasy literature and would like to have Cthulhu by the writer HP Lovecraft as a pet. And I like rock music!

AMANDA YUMI

Master in Oceanography, I am currently a PhD student in the Oceanography course at the Universidade Federal de Pernambuco - UFPE, where I work in the area of Marine Phytoplankton. I have a degree in Biological Sciences from the Universidade Federal de Sergipe - UFS, when I worked in the field of Mycology, with emphasis on Taxonomy of Lichens in the northeastern semiarid part of the country. I work as a Biology teacher at Cícero Dias Technical High School/NAVE Recife and I love to create pedagogical practices integrated with other subjects.

AMARO BEZERRA

Master in Language and Culture from the Universidade Federal da Paraíba - UFPB and graduated in Liberal Arts, with specialization from the Faculdade da Mata Sul - Famasul, where I work as a teacher. I was manager of the school units, coordinator of the pedagogical area and technician of the Palmares Municipal Secretary of Education. I work as a teacher at the Cícero Dias Technical High School/NAVE Recife. I believe every educator is a mediator of knowledge and I am honored to assist in the development and improvement of learners. I always seek to inspire them in their future projects.

ANA PAULA MOGETTI

I have a master's degree in political history and a bachelor's degree in history from Universidade do Estado do Rio de Janeiro - Uerj. I have been working in the state public school system of Rio de Janeiro since 1998 and, since 2010, I have been a teacher at José Leite Lopes State High School/NAVE Rio. A few years ago, I became interested in functional food and devoted my free time to the study of the history of food. I talk with my students a lot about this. I want them to be fed with amazing stories and great food.

ANDERSON SILVA

Passionate about computing, video games and education. Master in Computer Science in the field of Artificial Intelligence from Universidade Federal de Pernambuco - UFPE and a degree in Computer Science from the Universidade Federal Rural de Pernambuco - UFRPE. I am coordinator at the Cícero Dias State Technical School/NAVE Recife and I am a professor at Faculdade Estácio de Sá - FIR in Recife. I have worked on more than 50 digital game projects and guiding coursework on Information Systems. I am engaged in Internet of Things/ IoT projects and research in computing and education.

ANDRÉ OLIVEIRA

I have a degree in Internet Systems from Centro Universitário de João Pessoa (Unipê), where I learned and acquired a taste for game development and education. I have been studying games since 2013 and currently work as a Qualification Consultant at the Recife Center for Advanced Studies and Systems - Cesar. I worked as a teacher at the Cícero Dias Technical High School/NAVE Recife, where I taught subjects about game development. In addition to games, watching "geek culture" series and movies such as science fiction and superheroes are my favorite pastimes.

ANDREA PIRATININGA

Biology Teacher and graduated with a master's degree in Botany from the Federal University of Rio de Janeiro - UFRJ. I am passionate about issues related to food, full enjoyment of food, health and the human body. I am also interested in researching and reflecting on topics such as the environment, recycling and ecological imbalance. In addition to all the tasks, I am the mother of a pair of teenagers who make me think daily about the world and love working with crafts in fabric, paper and wood, always trying to recycle and make the best use of materials.

ÂNGELA ESTEVES

Master in Diversity and Inclusion from Universidade Federal Fluminense - UFF, with specialization in Deaf Education from Instituto Nacional de Educação de Surdos – Ines and in School Administration and Supervision from Universidade Cândido Mendes – Ucam. Graduated in Portuguese/French Liberal Arts, also from UFF, and currently a High School teacher for the Rio de Janeiro State Department of Education, working in a multifunctional resource room. I love reading, traveling, learning new things, meeting people and seeing places, experiencing new experiences and creating varied learning possibilities.

ÂNGELO JOAQUIM FILHO

I specialize in Youth and Adult Education at Universidade Federal de Pernambuco and also in Environmental Education at the Universidade de Pernambuco - UPE. I also graduated in Geography at UPE and I work as a Geography teacher at the Pernambuco State Department of Education. I am a teacher at the Cícero Dias State Technical School/NAVE Recife, where I develop research in the Teaching and Learning area, through the creation and experimentation of new teaching methods.

BÁRBARA SOARES

I specialize in developing digital interfaces for responsive websites and applications across multiple platforms. I graduated in Graphic Design with a focus on Digital Design from Instituto Infnet, I was responsible for visual identity, product creation and custom project development in a startup for companies like Lafarge and Amil Network hospitals. I am currently working for a software development company, as well as teaching the Multimedia technical course at the José Leite Lopes State High School/NAVE Rio.

CARLOS BURGOS

I am a postgraduate student in Interaction Design for Digital Artifacts at Cesar College and graduated in Design with emphasis in digital artifacts development at Universidade Federal de Pernambuco - UFPE. I have worked as a 3D artist for 10 years, having developed electronic models, 3D assets for applications and still images for major construction companies in the national scene. I currently teach classes focused on the 3D production of games and applications at Cícero Dias Technical High School/NAVE Recife.

CRISTINA NEVES

Master in Mathematics at the Universidade Federal do Estado do Rio de Janeiro - UniRio, specialist in Educational Informatics and graduated in Mathematics at the Universidade do Estado do Rio de Janeiro - Uerj. I teach Mathematics at José Leite Lopes State High School/NAVE Rio since 2009. I use technologies and the development of digital and analog games as the basis for teaching mathematics, as well as conducting various integration experiences with other subject areas and programming. I love board games, general crafts and cooking.

DANIEL GAIVOTA

I am a master and doctoral student in Education from the Universidade Estadual do Rio de Janeiro - UERJ and I have a degree in Philosophy from the Universidade Federal do Rio de Janeiro - UFRJ. I have been an educator for over ten years. I believe in an education that moves, displaces and transforms people and the world. I always seek to affirm the public character of the school as its most important element. For me, it is through childhood, becoming and minors that we are able to travel the world in a powerful way. I still love tangerines and jabuticaba fruit.

DANIEL MARTINS

I am a ludologist and educational designer. I have a master's degree in Design at Cesar School and a postgraduate degree in Strategic Design from Escola Superior de Propaganda e Marketing - ESPM. I am a self-taught game designer and I have been working for over five years assisting in the creation of game development courses. I coordinate the multimedia course at Cícero Dias Technical High School/NAVE Recife and manage my own companies: D+1 Design e Jogos, where I advise and produce ludic experiences for educational purposes, and DMand Game Studio, where I develop analog games for entertainment.

DANIELA BAHIA

I have a master's degree in Biology Teaching from Universidade Federal do Rio de Janeiro - Profbio/UFRJ. I am specialized in Field Engineering - Safety, Environment and Health from Universidade Federal Fluminense - UFF and a degree in Biological Sciences from Universidade Federal Rural do Rio de Janeiro - UFRRJ. I work as a teacher at the Rio de Janeiro state network and develop projects in the area of Botany. I am passionate about technologies and I am always experimenting with teaching Biology with new tools, seeking to enhance the development of student skills.

EDJA COSTA

I am a specialist in Morphology from Universidade Federal de Pernambuco - UFPE and in Zoology from Universidade Federal Rural de Pernambuco - UFRPE. Graduated with a Teaching Degree in Biological Sciences from Universidade Católica de Pernambuco - Unicap, I also have a bachelor's degree in Nursing from Fundação de Ensino Superior de Olinda - Funeso. I work as a Biology teacher at Cícero Dias State Technical School/NAVE Recife and at José Mariano State School. My commitment as an educator is to enable students to learn to observe and understand the phenomena of nature.

ELIZABETH CALDAS

Cinema has always been present in my construction and development. I have a habit of quoting phrases and movie scenes to explain much of what I feel. Since 2008, I have worked in writing scripts, studies, research and projects related to Brazilian audiovisual. I am an associate researcher of Grupo de Pesquisa em Educação e Mídia –PUCRio Group since 2014 and I teach audiovisual production workshops to students from public schools. At José Leite Lopes State High School/NAVE Rio, I was a Screenwriting Creation and Multimedia Interfaces teacher.

ERIKA PESSÔA

I am an educator of vocation and desire, a scientist of curiosity and training, a photographer and seamstress of "snooping" and joy. I have four years of experience in the classroom, three years in public school coordination and have worked as a developer, systems analyst and educational technology analyst. I find myself in a process of "unschooling," relearning to live up to what I believe in all walks of life.

FERNANDO OLIVEIRA

Specialist in Interaction Design for Digital Artifacts at Cícero Dias Technical High School/NAVE Recife. I focus my studies in the areas of learning games and games for the visually impaired. As a social projects enthusiast, I believe that design exists to serve society. And as a LGBTQ + Community citizen, I understand the need for diversity within schools, a diverse environment is more creative. Among my passions are traveling and learning about new cultures, listening to music, reading books, playing video games, drawing and watching movies and series.

FLÁVIA CAVALCANTI

I have been an educator since I was 14 years old, I have worked in the Pernambuco state network for 10 years and I was a teacher at Cícero Dias Technical High School/NAVE Recife, where I worked for four years. I have a postgraduate degree in Methods and Technologies in Portuguese Language Teaching and also studied Liberal Arts. I like movies, music and I'm interested in all kinds of cultural manifestation. Since 2016, I have been monitoring 3rd year classes and striving to innovate with the textual production work.

HUGO MAGNATA

My specialization is in the ludic methodology, I have been a licensed chemistry and physics teacher for over 10 years. I was a student who had learning difficulties from a young age, and it was using my imagination that I began to understand the contents taught at school at that time. When I got to high school, I used the method to understand physics and chemistry. I am a teacher at Cícero Dias Technical High School/NAVE Recife and I use this personal experience to create and explore new possibilities for teaching and learning along with the students.
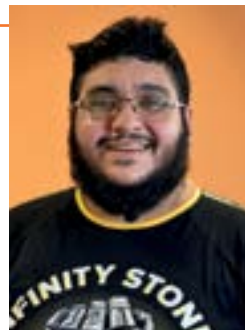
IGOR MORENO

I am a communicologist and game designer, producing titles in the areas of Role Playing Games - RPGs and board games by Redbox Editora. I've developed titles like Space Dragon and CHOPSTICK for the Flying Ape editorial line. I have nearly a decade of experience as a language and web design teacher. In 2018, I started working at José Leite Lopes State High School/NAVE Rio, in the subject of Game Culture, in which I work on gamification, ludic aspects and project methodology concepts. It's a subject that lets you go from little pieces and dice on a board to buttons and animations in a video game.

JOÃO BOSCO

Ever since my childhood, I was always curious to understand how things worked and I liked to explain the little I knew to my brothers and friends. My destiny was already set, it was linked to science and teaching. At just a little of 20 years old, I completed my degree in Physics at Física na Universidade Federal Rural de Pernambuco - UFRPE and started teaching in private schools. A few years later, I joined the Pernambuco state school system. Currently, I am in the professional master's degree in Physics Teaching/SBF program at UFRPE, where I also specialized in Teaching Physics.

JONATHAN CAROBA

I have a degree in Communication from Universidade do Estado do Rio de Janeiro - UERJ. I was a student at José Leite Lopes State High School/NAVE Rio, specializing in Digital Media Screenwriting. I currently coordinate the Media Education Space and work to promote teacher education in digital literacy and for the use of technological resources in the classroom. I'm a Google Educator and a lover of samba and thrillers.

JOSÉ AUGUSTO MENDES

I teach the Digital Games Programming course at José Leite Lopes State High School/NAVE Rio and I am a qualification consultant at the company Cesar. I have a master's degree in Computer Science, Education and Society from Universidade Federal do Rio de Janeiro - UFRJ and graduated in Digital Games from Universidade Estácio de Sá. I have experience in various programming languages, game development and application development. My hobby is playing video games, but I also enjoy playing the guitar and doing physical activities.

JOSÉ GILBERTO DA SILVA

I have been an educator in the state of Pernambuco for 26 years and a philosophy teacher at Cícero Dias Technical High School/NAVE Recife since it was founded. I have a Master's degree in Philosophy from Universidade Federal de Pernambuco - UFPE and I am specialized in Teaching Human Sciences, and I always have a Social Sciences background. What has always motivated me to be a teacher is the challenge of discovering myself. I am not tied to labels regarding my practice. I like movies, books, the beach and traveling.

JULIANE TRAVASSOS

My background is in Cinema - Audiovisual Production and Multimedia - Design for Digital Games. I am a former student of Cícero Dias Technical High School/ NAVE Recife and I am very grateful to have had the opportunity to go through various experiences, from student and intern to coordinating the School's Media Education Area. All of these phases were essential for my personal and professional growth. From each project I participated in, there are lessons that I will carry with me throughout life.

KLENIE RAMOS

I am a specialist in Applied Linguistics for Teaching the English Language and graduated with a Teaching Degree - Portuguese / English. I have been working in the public school system for 28 years, 20 of which I dedicated exclusively to teaching the English language. I am a pioneer in the Pernambuco State Full-Time School Project, created in 2003 at the Pernambucano Gymnasium. I am currently a teacher at the Cícero Dias State Technical School/NAVE Recife, following the same concepts as Interdisciplinary and Integrating Education.

MARIA CRISTINA MARTINS

I am a Master's student in Teaching Physics from Universidade Federal do Estado do Rio de Janeiro - UniRio, postgraduate in Teaching from Colégio Pedro II, and a teaching degree in Physics from Universidade Federal do Rio de Janeiro - UFRJ. I work as a Physics teacher at José Leite Lopes State High School/NAVE Rio and other High Schools. I am also the mother of two girls and I am the manager of my apartment building. I like to know what is happening to our universe. I love astronomy and I was a scholar of Museu de Astronomia e Afins (Mast).

MARTA FRANCESCUTTI

I am enchanted by the nature and human diversity on our planet, which is why I became a geographer. I have a master's degree, bachelor's degree and degree in Geography. For 37 years, I have been a teacher in the area, teaching at state schools in Rio de Janeiro and at José Leite Lopes State High School/NAVE Rio. Teaching is what I enjoy doing most in life and that is what keeps me studying and updated. Lately, I've been interested in researching how the human brain works and how it is used in learning.

MÔNICA D'ALMENERY

Specialist in Basic Education Teaching in the Portuguese Language Subject at PRD - Pedro II and in Portuguese Expression Literatures at Ucam. Acting as a Portuguese Language teacher at José Leite Lopes State High School/ NAVE Rio and Francisco Campos State High School - Seeduc/ RJ. Experienced with students who have learning disabilities and multiple disabilities. I participate in the works Colheita de uvas: crônicas, Pera, Uva, Maçã – Salada Mista and Guia de Práticas Pedagógicas Inovadoras Oi Futuro. I adapted board games for teaching Brazilian Literature to students with ASD and ADHD.

NILMA MEDEIROS

I am a high school chemistry teacher at the state public school and at José Leite Lopes State High School/NAVE Rio. Master in Physical Chemistry from Pontifical Catholic University of Rio de Janeiro - PUC-Rio and a degree in Chemistry from the Universidade Federal Fluminense - UFF. I worked in the industry and today I dedicate myself entirely to Education. I love teaching and sharing my knowledge of chemistry through integrated and contextualized projects, making this science less acidic and more enjoyable.

OBERDAN ALVES

I am a teacher, systems analyst and passionate about cartoons, movies and series. Master in Computer Science in the area of Computational Intelligence at the Computer Information Center of Universidade Federal de Pernambuco - UFPE and graduated with a Computer Science Teaching Degree at Universidade Federal Rural de Pernambuco - UFRPE, I currently specialize in Mobile Application Development. I have experience in support and systems analysis, an area I have worked in for over 14 years. At school, I work with Digital Game Culture and Programming subjects.

PATRÍCIA OLIVEIRA

I have postgraduate studies in Linguistics and Portuguese Teaching from Universidade Federal de Pernambuco - UFPE. I have worked as a Portuguese Language teacher for over 11 years in the Pernambuco State Department of Education. I teach Portuguese, mainly at Cícero Dias Technical High School/NAVE Recife. I am very curious about and adept at new technologies and love to create innovative educational practices. I also have a great passion for developing interactive assignments in the classroom.

PAULA SCARABELOT

Graphic designer graduated from Escola de Belas Artes da Universidade Federal do Rio de Janeiro - EBA / UFRJ, with experience in developing visual identities, editorial projects, illustration and stamping. I was part of the design team of the Rio 2016 Olympic and Paralympic Games Organizing Committee. I have personal projects in the stamping area at DeuCria Studio. The varied professional experiences contributed immensely to the classes at José Leite Lopes State High School/ NAVE Rio Multimedia course, where I have contact with creative and inspiring kids on a daily basis.
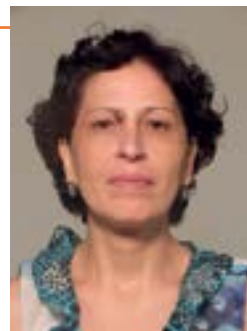
RENATA BARCELLOS

I have post-doctorates in Portuguese and I am a postdoctoral student in Brazilian Literature at Universidade Federal do Rio de Janeiro - UFRJ. I am a school teacher at Rio's public schools and UniCarioca. Associated with Círculo Fluminense de Estudos Filológicos e Linguísticos - Cifefil, member of Academia de Letras e Artes de Paranapuã – Alap- Alap, the Brazilian Union of Writers - UBE and Associação de Jornalistas e Escritoras do Brasil - Ajeb/RJ. I like arts in general, writing, interacting with students, researching and creating new pedagogical proposals for teaching Portuguese.

ROAN SARAIVA

I am enthusiastic about transforming the lives of kids through education. My background is in Digital Visual Arts and I am interested in creating meaningful projects for students. I was coordinator of the Media Education Space at Cícero Dias Technical High School/NAVE Recife and I currently support the school´s management and monitoring processes. I enjoy the days of work as leisure, and travel, which is my passion, I seek to return with elements that can be incorporated into my practice.

SÂMARA CARVALHO

I have a degree in Cinema and Audiovisual from Universidade Federal de Pernambuco - UFPE. I have also worked as a photographer, videomaker and art educator. I fell in love with the area of education and the possibility of expanding learning through the use of audiovisual. Currently, I am working as Coordinator of the Media Education Space at Cícero Dias Technical High School/NAVE Recife. In this space, working in partnership with the students, I learn something new every day.

SANDRO MENEZES

I am a cartoonist, graphic artist, screenwriter and teacher, graduated in Design from Escola de Belas Artes da Universidade Federal do Rio de Janeiro - UFRJ. For eight years, I have been working as a manager and also as a Design, Illustration, Animation and Audiovisual teacher in schools and public projects of inclusive education. I compulsively scribble all day, drawing students and staff on any piece of paper. As a Marvel fan, I don't miss the opportunity to repeat Spider-Man's motto to the kids: "With great power, comes great responsibility."

SARAH NERY

I started studying Communications in 1996, when the internet was not yet part of everyday life. At Journalism school (turn of the century and millennium: 1998-2002) I went from pager and fax to cell phone and e-mail. In the master's degree in Communication and Culture (2005-2007, Universidade Federal do Rio de Janeiro - ECO / UFRJ) and the doctorate in Education (2011-2015, Universidade do Estado do Rio de Janeiro - Proped/ Uerj), the challenges became the ocean of information provoked by digital technologies. In this interface between media and education, I continue learning and unlearning the world, life and living beings.

SILVANA COCKLES

I am a teacher in the Pernambuco state network, specializing in Computer Information in Education and graduated in Psychology. I have worked as a school unit manager and coordinator of a state project with coverage in the municipal network and focus on school distortion. Today, I coordinate the Knowledge Space (library) at Cícero Dias Technical High School/NAVE Recife. I am a curious teacher, and I am inspired by proposals and technologies that present innovative tools and encourage collaborative learning.

TIAGO DARDEAU

I have a Master´s in Education from Universidade do Estado do Rio de Janeiro - UERJ and a am pedagogue. I often say that I never left school, because in the first period of college I was already interning. That was 20 years ago. Since 2010, I have coordinated the technical course for Digital Media Screenwriting at José Leite Lopes State High School/NAVE Rio. I am pleased to coordinate teams, proud of being born in Salvador and I am passionate about Brazilian culture and cuisine. One day I will live in the countryside, but I will never leave the city.